

Reference Number: UHB 450 Version Number: 1	Date of Next Review: UHB 450 Previous Trust/LHB Reference Number: N/A
Parenteral Nutrition Procedures for Adult Patients	
Introduction and Aim These procedures provide essential guidance in the delivery of care for a patient receiving Parenteral nutrition. The procedures aim to enhance the patient's experience, standardise practice and minimise the risk of patient harm.	
Objectives <ul style="list-style-type: none"> • To standardise the procedures for the administration of Parenteral Nutrition and ongoing care of a Peripheral and Central Venous Catheter in patients receiving Parenteral Nutrition • To ensure adherence to the national Aseptic Non-Touch Technique 	
Scope These procedures apply to all staff deemed competent in the care and management of an adult patient receiving Parenteral Nutrition.	
Equality and Health Impact Assessment	An Equality and Health Impact Assessment (EHIA) has been completed and this found there to be no negative impact. Key actions have been identified and these can be found incorporated within this procedure.
Documents to read alongside this Procedure	Consent to Examination or Treatment policy Mental Capacity Act ANTT Practice Framework and All Wales ANTT policy UHB Hand Hygiene Procedure The Medicines Management Policy (2018) 1000 Lives Plus: 2013: Reducing Health Care Associated infections: the appropriate and timely use of invasive devices EPIC3: National Evidence Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospital in England RCN Standards for Infusion Therapy (2016)
Approved by	Nursing and Midwifery Board

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Summary of reviews/amendments			
Version Number	Date of Review Approved	Date Published	Summary of Amendments
1	11/04/19	07/05/2019	New standardised PN procedures

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1. Introduction

Parenteral Nutrition (PN) is nutrition administered directly into the bloodstream via an intravenous catheter. The most prevalent risk associated with PN feeding is an infection of the intravenous catheter used to administer PN. Patients requiring parenteral nutrition are usually short-term (Intestinal Failure type 1) and administered as inpatient. Patients with Intestinal Failure type 2 and 3 are required for longer periods, sometimes lifelong and patients are discharged into the community either self caring or with nursing support. The Nutrition Support team like to promote independence and autonomy and therefore provide the service to train patients to perform their own catheter care and administer feeds at home. A full multidisciplinary risk assessment must be made and documented, before a patient with a PN feeding and central catheter is discharged from acute care to community and before delegation of care.

2. Statement

These procedures have been produced to support staff to administer PN and maintain the catheter, including routine care such connection, disconnection and dressing changes and specialist care such as blood sampling or line repair.

The procedures demonstrated in this document are in line with the All Wales Policy for Aseptic Non Touch Technique (ANTT).

3. Aim

To standardise procedures in PN administration to maintain patient safety and minimise the risk of patient harm.

4. Objectives

To standardise the procedures of the administration of Parenteral Nutrition and ongoing care of a Central Venous Catheter in patients receiving Parenteral Nutrition

To ensure adherence to the national Aseptic Non-Touch Technique

5. Competence, accountability and responsibility

5.1 Registered Practitioners

All professionals undertaking this procedure must be appropriately trained and competent registered practitioners, that is:

- Registered Adult Nurse

The registered healthcare professional must:

1. Have undertaken training by the PN Nutrition Nurse Specialists
2. Have undertaken supervised practice with a registered practitioner who is competent in this skill
3. Have been assessed as competent in performing these procedures

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4. Keep a documented record of their competence/sign off
5. Update their practice every 3 years (to include a one off assessment of competence)

The practitioner is accountable for their own practice. Evidence of continuing professional development and maintenance of competence level will be required.

5.2 Students

Student nurses and Medical students are not authorised to undertake this skill.

5.3 Patients and relatives

Patients and relatives/other carers - i.e. spouse, carer, involved in the patient's care can undertake this procedure if they have been trained by a Nutrition Nurse Specialist or Home Care Company Nurse and have been assessed as competent.

6. Indication

It is the responsibility of the Ward Sister/Charge Nurse to ensure PN is administered to patients when PN is prescribed and is readily available for administration on the ward. Staff nurses at ward level are to be trained in PN procedures for the Ward Sister/Charge Nurse to delegate this task, this will also facilitate the ability to provide holistic care for patients at ward level. If there are any issues with the ability to administer PN at ward level, please contact the PN Nurse Specialists.

7. Consent

Informed verbal consent for the procedure must be sought under the guidance of the UHB Consent to Examination or Treatment Policy. (Section 8.8, 8.6 deals with treatment of children and *Gillick Competence*). Please refer to the Mental Capacity Act toolkit (UHB Mental Capacity Act intranet page) for guidance on how to assess mental capacity if you suspect the patient does not have the capacity to provide their consent and the actions to be taken e.g. a best interest decision. Please use the documentation provide in the Mental Capacity Act Toolkit to document mental capacity assessments and best interest decisions.

8. Contraindications

The practitioner should apply clinical judgement and expertise combined with these procedures in deciding if it is safe to perform them, for example assessing for a damaged line.

Individual patients must be assessed by the multidisciplinary team as there may be a contraindication for the commencement of PN such as, refusal on religious beliefs or allergy to eggs.

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9. Administration

Practitioners are permitted to administer intravenous medicines provided they have received UHB delivered or endorsed appropriate education, training and assessment of competence. All intravenous medicines and fluids should be prepared and administered in accordance with Cardiff and Vale UHB approved local procedures.

Administration of intravenous medication requires two registrants, which is recommended practice to reduce the risk of adverse drug events in accordance with The Medicines Management Policy (2018).

Before administering any Parenteral Nutrition, consult the patient's prescription chart (Check PN prescription on blue PN chart or HPN chart corresponds to PN bag/attached sticker)

- Patient identity
- Patient allergies
- Dose/rate
- Date and time of administration
- Route and method of administration
- Validity of prescription
- Signature of prescriber

Parenteral Nutrition should come to room temperature, this can be achieved by taking the feed out of the fridge 1-2 hours before the procedure. Check the bag has the correct patient identifiable data, is within the expiry date and has no leaks or noticeable particles. Cover to protect contents from light.

10. Documentation

The practitioner administering the medication must record the administration as soon as possible after the event. This includes completing the surveillance (Appendix 1) and fluid balance chart and ensuring both registrants sign the prescription chart.

11. Resources

This procedure is a revision of existing guidelines within the UHB. There are specific resources required for implementation. All equipment required is available via CSSD or the Adult Nutrition Support Team.

12. Training

The Adult Nutrition Support Team provide general education and training, and the PN Nutrition Support Nurses undertake the training and assessment of the PN procedures. This training is open to qualified nursing staff and is arranged by contacting them and

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arranging a mutually convenient time to train in the ward environment.

It is the responsibility of the Ward Sister/Charge Nurse to ensure PN is administered to patients when PN is prescribed and is readily available for administration on the ward. It is the responsibility of the Ward Sister/Charge Nurse to delegate PN procedures to the ward staff to ensure PN is administered. When delegating procedures to other members of staff or patient/relatives:

Nurses must be accountable for their decisions to delegate tasks and duties to other people as per the NMC Code of Conduct (2015).

To achieve this, you must:

11.1 only delegate tasks and duties that are within the other person's scope of competence, making sure that they fully understand your instructions

11.2 make sure that everyone you delegate tasks to is adequately supervised and supported so they can provide safe and compassionate care, and

11.3 confirm that the outcome of any task you have delegated to someone else meets the required standard.

Standard 17 of the NMC Standards for Medicines Management (NMC 2015) also states that:

'A registrant is responsible for the delegation of any aspects of the administration of medicinal products and they are accountable to ensure that the patient, carer or care assistant is competent to carry out the task.'

'This will require education training and assessment of the patient, carer or care assistant and further support if necessary. The competence of the person to whom the task has been delegated should be assessed and reviewed periodically. Records of the training received and outcome of any assessment should be clearly made and be available.'

For this reason registered Nurses will be responsible for ensuring that the person to whom they are delegating PN procedures to:

- a. is clear about their role and responsibilities
- b. receives the training that they require
- c. demonstrates their competence through a documented assessment

13. Responsibilities

Healthcare professionals must ensure that they have undertaken the required training and assessment of competence prior to them being involved with PN procedures.

Individual PN designated wards are responsible for implementing the procedures. The Adult Nutrition Support Team will continue to provide the training and support of staff

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undertaking the PN procedures in adults.

Incident forms must be completed for non-compliance with this procedure or other adverse events associated with their use e.g. catheter related infections, and the incident escalated through the appropriate directorate channels. Serious clinical incidences must be escalated to the Patient Safety and Quality Department e.g. feeding via a damaged line.

14. Implementation

The procedure will be circulated to all PN designated wards and will be available on the UHB Intranet site. Adherence to the procedure will be audited on an ad hoc basis by the Nutrition Support Team. It is encouraged that directorates include this to their audit calendars as appropriate.

15. Equality and Health Impact Assessment

An Equality and Health Impact Assessment has been undertaken to assess the relevance of this procedure to equality and potential impact on different groups, specifically in relation to the General Duty of the Race Relations (Amendment) Act 2000 and the Disability Discrimination Act 2005 and including other equality legislation. The assessment identified that the procedure presented a low risk to the UHB. The Equality and Health Impact assessment can be found in Appendix 3.

Hand hygiene procedures

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Hand washing

This is the single most important step in avoiding a line infection therefore the UHB Hand Hygiene Infection Control Procedure must be followed at all times.

All staff present in a clinical environment **MUST** adhere to the following principles of Bare Below the Elbows to enable effective hand hygiene:

- Wear short sleeves (rolled up sleeves are acceptable), or elbow length sleeves.
- No wrist watches or bracelets to be worn.
- Keep nails short and clean.
- Artificial nails and nail varnish must not be worn.
- One plain band ring can be worn.
- Any cuts and abrasions on hands and arms should be covered with a non-permeable dressing.

Technique

- If a ring is worn, either remove it or ensure that the area underneath is washed.
- Turn on taps. Adjust water temperature and flow to desired settings.
- Wet hands under running water.
- Apply soap to hands. Utilise the technique illustrated on the hand washing posters and shown on page 10.
- Ensure all areas of the hands are covered, including the wrists and forearms if applicable.
- Pay particular attention to fingertips, nails, thumbs and the area between the fingers.
- All areas of the hands and wrists should be vigorously rubbed. Rinse hands under running water.
- Dry hands with disposable paper towels. Use a used or new paper towel to turn off the running water then discard.
- Dispose of the paper towels using the foot pedal on the bin, ensuring that hands are not re-contaminated in the process.

Alcohol hand gel

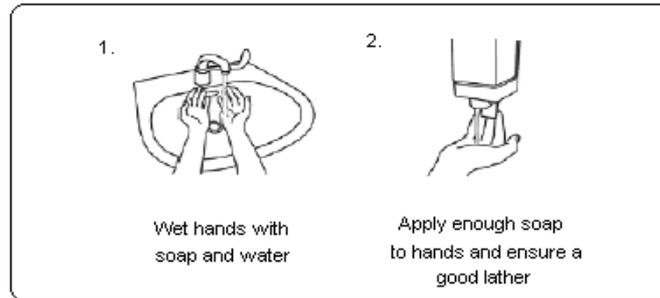
This is used during the procedures in addition to hand washing. Utilise the technique illustrated on the hand washing posters and shown on page 10.

- Ensure it is rubbed into all area of the hands.
- Allow alcohol to evaporate fully so that hands are completely dry.

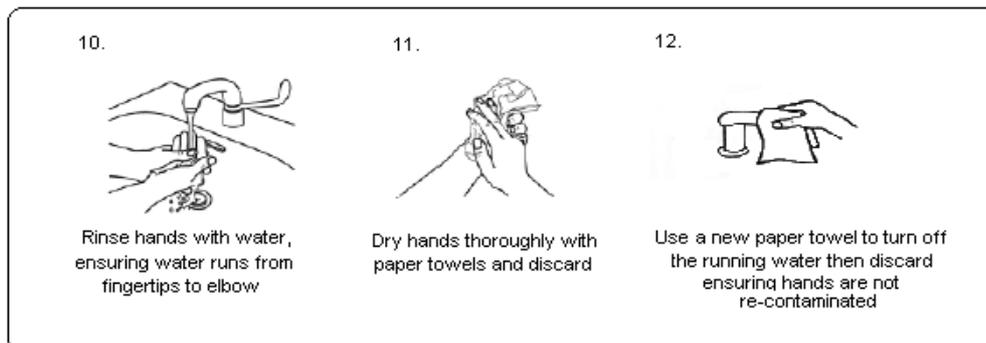
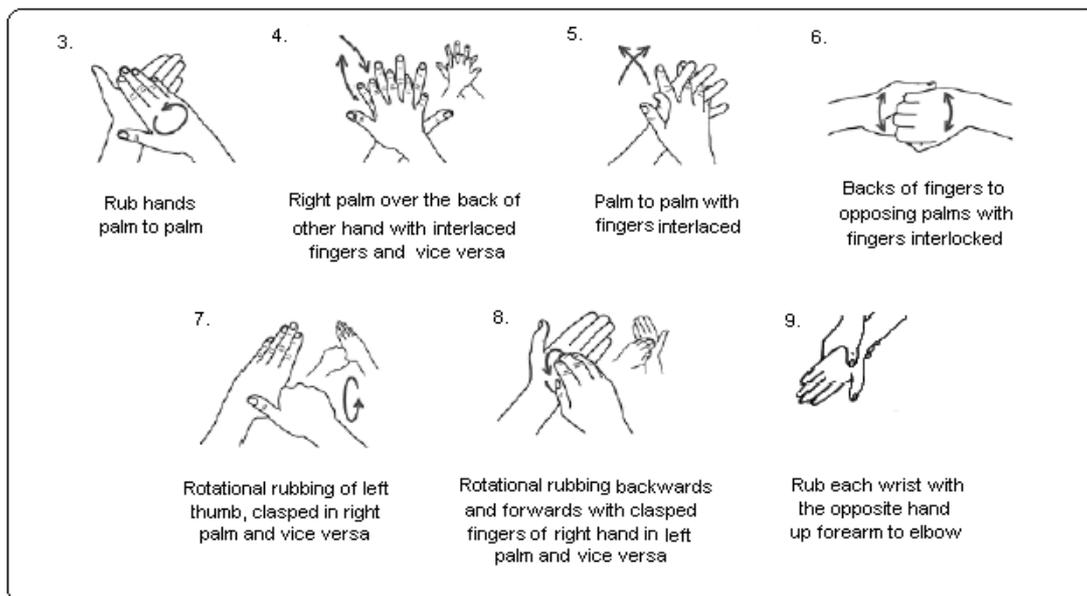
Skin Care: Report any skin irritation to the Occupational Health Department.

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Handwashing Technique for Parenteral Nutrition Procedures



The Steps Below should Take 40- 60 seconds



National Patient Safety Agency (2008) Hand Cleaning Techniques. How to Hand Wash? With soap and water. www.npsa.nhs.uk/cleanyourhands

Cardiff and Vale University Health Board (2013) Infection Control Procedure for Hand Decontamination.

Welsh Healthcare Associated Infection Programme. National Model Policies for Infection Prevention and Control. part 1: Standard Infection Control Precautions. (2014). Public Health Wales.

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Trolley and equipment Preparation for All Procedures

Prior to use, the trolley must be cleaned according to the Aseptic Non Touch Technique (ANTT) Approach.

When starting your preparation, wash your hands and then clean work surfaces and procedure trolley with Clinell Universal Sanitising Wipes. Do not scrub surfaces, firmly wipe over each part of the surface once using an S shaped movement and work from the top to the bottom of the trolley.

Leave to air dry. The equipment should then be placed on the bottom of the trolley.

Sterile field

A Critical Aseptic Field should be used at all times to ensure key-sites and key parts are protected.

Key-Sites: are open wounds, including insertion and puncture sites.

Key-Parts: are the parts of the procedure equipment or medical devices that come into direct or indirect contact with Parenteral Nutrition (PN) feed e.g. needle free device, syringe.

‘Key-Parts and Key-Sites provide a direct route for the transmission of pathogens into the patient.’

Key-Parts and Key-Sites must only come into contact with other **active aseptic Key-Parts or Key-Sites** or **sterile liquid infusions.**

For IV infusions the key parts will be the whole infusion from the bag of fluid, the giving set, needle-free device and central venous line.

Key-Parts may be **active or non active**. For example, an IV port not in use is inactive. Non active key-parts must be rendered aseptic prior to use by cleaning and disinfecting.

Scrub the Hub

Needle free devices (e.g. Bionector or Clave) on cannulas, lines and necks of ampoules/vials should be disinfected by performing a minimum 15 second scrub with friction using a Clinell wipe (2% chlorhexidine, 70% alcohol) and allowed to dry for 30 seconds.

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Pre- Connection Procedure

1. Ensure the intravenous access device is safe to use and position is documented in the medical notes before administering Parenteral Nutrition.
2. A single lumen catheter should be used for the administration of Parenteral Nutrition. If a multi-lumen catheter is used, Parenteral Nutrition should be administered via a dedicated lumen kept exclusively for this purpose and strict Aseptic Non Touch Technique implemented when handling the line.
3. To bring the Parenteral Nutrition to room temperature, take the feed out of the fridge 1-2 hours before the procedure. Check the bag has the correct patient identifiable data, is within the expiry date and has no leaks or noticeable particles. Cover to protect contents from light.
4. The bag can then be 'hung' on the drip stand or placed on the work surface in the treatment room until ready to administer.
5. All IV medication should be checked with a second nurse.
6. Before administering any Parenteral Nutrition, consult the patient's prescription chart (Check PN prescription on blue PN chart or HPN chart corresponds to PN bag/attached sticker). Both nurses should check:
 - a. Drug
 - b. Dose/rate
 - c. Date and time of administration
 - d. Route and method of administration
 - e. Validity of prescription
 - f. Signature of prescriber
 - g. Patient identity
 - h. Patient allergies

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Connection Procedure

Equipment

Trolley and large Clinell Universal wipes (**only used for trolley preparation**)

Giving set

Filter (1.2 µm)

Dressing pack

1 pair of sterile gloves

1 x 10 ml sterile pre-filled sodium chloride (0.9%) syringe

Small Clinell wipes (2% Chlorhexidine, 70% Alcohol)

Alcohol gel

Disposable apron

Sterile adhesive edge drape

Procedure

1. Follow Pre-connection Procedure on page 7.
2. Prepare the patient for the procedure: Explain procedure and obtain consent
3. Gather equipment in a tray.
4. Prepare trolley as detailed on page 6.
5. Put on apron. Alcohol gel hands.
6. Open dressing pack outer packaging and drop it onto trolley.
7. Only touching the corners, open out dressing pack creating a sterile field.
8. Open all items onto the sterile field.
9. Expose line and assess line site.
10. Clinell wipe the giving port on the PN bag and remove giving port cap using the Clinell wipe. Discard the cap and Clinell wipe and allow port to air dry.
11. Wash and dry hands. Put on sterile gloves.
12. Unfold sterile drape from the dressing pack and peel off strip, exposing the adhesive. Hold with dominant hand.
13. Using the non-dominant hand, pick up a Clinell wipe and hold line up.
14. Attach the adhesive strip to the patient's chest. Keep line elevated and off the sterile drape.

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15. Using the dominant hand pick up another Clinell wipe and clean down the line, including clamp, needle free device and Curos. Discard Clinell wipe.
16. Remove Curos port and discard. Keep line elevated and off the sterile drape and clean the end of the needle free device using another Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell wipes.
17. Pick up the pre-filled sodium chloride syringe. Expel air lock in the syringe then attach to needle free device.
18. Unclamp the line.
19. Using the push-pause technique, flush the sodium chloride into the line. As the last 1 ml is being flushed, close the line clamp to provide a positive pressure. Discard syringe.
20. Attach the filter to the giving set and ensure the giving set clamp is closed. Insert giving set spike into the giving port of the PN bag. Do not touch the spike or the entrance to the giving port.
21. Prime the giving set and filter ensuring all air is expelled. Clamp the giving set.
22. Remove the end cap of the giving set and connect to the needle free device.
23. Remove gloves and Alcohol gel hands.
24. Thread the giving set into the pump as per manufacturer's guidance.
25. Switch on the infusion pump and set the required volume to be infused over the required time.
26. Unclamp the line and start the infusion.
27. Dispose of all waste as per UHB policy.
28. Wash hands.
29. Complete surveillance form, prescription chart, and fluid balance and record procedure and any concerns in the medical notes.

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Disconnection Procedure

Ensure the line is clamped after the feed has finished. The line must be flushed with 10 ml of Sodium Chloride (0.9%) as soon as the feed is stopped to avoid the risk of blockage. Resistance when flushing the line is an early sign of impending blockage. If resistance is felt, do not exert excessive pressure as this may cause the line to rupture. Please inform the Nutrition Support Team.

Equipment

Trolley and large Clinell Universal wipes (**only used for trolley preparation**)

Dressing pack

1 x 10 ml sterile pre-filled sodium chloride (0.9%) syringe

Small Clinell wipes (2% chlorhexidine, 70% alcohol)

Alcohol gel

1 pair of sterile gloves

Disposable apron

Curos port

Sterile adhesive edge drape

Procedure

1. Follow Pre-connection Procedure on page 7.
2. Prepare the patient for the procedure: Explain procedure and obtain consent
3. Gather equipment in a tray.
4. Prepare trolley as detailed on page 6.
5. Put on apron. Alcohol gel hands.
6. Open dressing pack outer packaging and drop it onto trolley.
7. Only touching the corners, open out dressing pack creating a sterile field.
8. Clean Curos port using a Clinell wipe, and drop onto sterile field. Discard Clinell wipe.
9. Open all remaining items onto the sterile field.
10. Expose line and assess line site.
11. Wash and dry hands. Put on sterile gloves.
12. Unfold sterile drape from the dressing pack and peel off strip, exposing the adhesive.
Hold with dominant hand.

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13. Using the non-dominant hand, pick up a Clinell wipe and hold line up.
14. Attach the adhesive strip to the patient's chest. Keep line elevated and off the sterile drape.
15. Using the dominant hand pick up another Clinell wipe and clean down the line, including clamp, needle free device and giving set. Discard Clinell wipe.
16. Disconnect giving set and discard. Keep line elevated and off the sterile towel and clean the end of the needle free device using a Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell wipe.
17. Pick up the pre-filled sodium chloride syringe. Expel air lock in the syringe then attach to needle free device.
18. Unclamp the line.
19. Using the push-pause technique, flush the sodium chloride into the line. As the last 1 ml is being flushed, close the line clamp to provide a positive pressure. Discard syringe.
20. Peel off the tab of the Curo's port and attach to the end of the needle free device.
21. Remove gloves and Alcohol gel hands.
22. Dispose of all waste as per UHB policy.
23. Wash hands.
24. Complete surveillance form, prescription chart, and fluid balance and record procedure and any concerns in the medical notes.

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Alcohol flush, Needle Free Device and Dressing change procedure

This is usually done together once a week and can be completed as part of the disconnection procedure.

Flushing the line with alcohol reduces the risk of blockage and infection and is used for tunnelled lines only. Occasionally it may be used more frequently if advised by the NST, and must be omitted if the patient is prescribed the antibiotic Metronidazole.

The needle free device reduces the risk of infection. Occasionally it is changed more frequently e.g. if blood is taken from the line.

The dressing helps to secure the line and reduces the risk of infection. It should be covered when showering and changed if loose, wet or soiled.

Chloroprep should only be used once a week (an alternative, such as povidone iodine in alcohol should be used in patients with chlorhexidine allergy). If the dressing is changed more frequently, sodium chloride (0.9%) should be used to avoid skin irritation.

Equipment

Trolley and large Clinell Universal wipe (**only used for trolley preparation**)

Dressing pack

2 x sterile gloves

2 x 10 ml sterile pre-filled sodium chloride (0.9%) syringe

Chloroprep 2% one-step applicator (3 ml)

Transparent dressing

Needle free device

Curos port

10 ml syringe

Red blunt fill needle

10 ml alcohol (20%) vial

Small Clinell wipes (2% Chlorhexidine, 70% Alcohol)

Alcohol gel

Disposable Apron

Sterile adhesive edge drape

Procedure

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1. Follow Pre-connection Procedure on page 7.
2. Prepare the patient for the procedure: Explain procedure and obtain consent
3. Gather equipment in a tray.
4. Prepare trolley as detailed on page 6.
5. Put on apron. Alcohol gel hands.
6. Open dressing pack outer packaging and drop it onto trolley.
7. Only touching the corners, open out dressing pack creating a sterile field.
8. Clean Curoport using a Clinell Wipe, and drop onto sterile field. Discard Clinell Wipe.
9. Open all remaining items onto sterile field.
10. Expose line and assess line site.
11. Wash and dry hands. Put on sterile gloves.
12. Unfold sterile drape from the dressing pack and peel off stripe, exposing the adhesive.
Hold with dominant hand.
13. Using the non-dominant hand, pick up a Clinell wipe and hold line up.
14. Attach the adhesive strip to the patient's chest. Keep line elevated and off the sterile drape.
15. Using the dominant hand pick up another Clinell wipe and clean down the line, including clamp, needle free device and giving set/Curoport. Discard Clinell wipe.
16. Remove Curoport/giving set and discard. Keep line elevated and off the sterile drape and clean the end of the needle free device using a Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell wipe.
17. Pick up the pre-filled sodium chloride syringe. Expel air lock in the syringe then attach to needle free device.
18. Unclamp the line.
19. Using the push-pause technique, flush the sodium chloride into the line. As the last 1 ml is being flushed, close the line clamp to provide a positive pressure. Discard syringe.
20. Draw up 5 ml of alcohol using the red blunt fill needle and syringe.
21. Remove the red blunt fill needle from the syringe. Attach the syringe to the needle free device. Flush the alcohol slowly over 2 – 3 minutes. Clamp the line and discard syringe.
22. Remove the needle free device. Keep the line elevated and off the sterile drape and

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clean the end of the line using a Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell wipe.

23. Pick up the other pre-filled sodium chloride syringe. Expel the air lock in the syringe and attach to the new needle free device.
24. Attach the new needle free device with syringe to end of line.
25. Unclamp the line.
26. Using the push-pause technique, flush the sodium chloride into the line. As the last 1 ml is being flushed, clamp the line clamp to provide a positive pressure. Remove empty syringe from needle free device and discard.
27. Peel off the tab of the Curosp port and attach to the end of the needle free device.
28. Gently loosen and remove dressing. Be mindful not to pull the line from the skin.
29. Discard dressing and remove gloves.
30. Alcohol gel hands.
31. Put on second pair of sterile gloves.
32. Pick up Chloroprep applicator and activate by squeezing the wings.
33. Clean the skin around the exit site. Discard the applicator and allow to dry for 30 seconds.
34. Pick up the new dressing and remove the backing paper. Position line using a loop and apply dressing to cover the exit site and loop. Dressing should be fixed well with no trapped air.
35. Remove gloves and Alcohol gel hands.
36. Dispose of all waste as per UHB policy.
37. Wash hands.
38. Complete surveillance form, prescription chart, and fluid balance and record procedure any concerns in the medical notes.

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Blood Sampling Procedure for Biochemistry

This can be done as part of the procedures above. If bloods are required after disconnecting an infusion there must be a minimum of 5 minutes after the infusion is completed prior to taking blood sample.

Equipment

Trolley and large Clinell Universal wipe (**only used for trolley preparation**)

Dressing pack

Sterile gloves

2 x 10 ml sterile pre-filled sodium chloride (0.9%) syringe

Needle free device

Curos port

10 ml syringes (as many as appropriate for blood tests required +1 additional for discard)

Red blunt fill needle

Appropriate blood bottles

Small Clinell wipes (2% Chlorhexidine, 70% Alcohol)

Alcohol gel

Disposable Apron

Sterile adhesive edge drape

Procedure

1. Follow Pre-connection Procedure on page 7.
2. Prepare the patient for the procedure: Explain procedure and obtain consent
3. Gather equipment in a tray.
4. Prepare trolley as detailed on page 6.
5. Put on apron. Alcohol gel hands.
6. Open dressing pack outer packaging and drop it onto trolley.
7. Only touching the corners, open out dressing pack creating a sterile field.
8. Clean Curos port with a Clinell wipe, wipe clean and drop onto sterile field. Discard Clinell wipe.

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9. Clean the blood bottles with a Clinell wipe, taking extra care to clean the neck and top of the bottles, and place onto edge of sterile field. Discard Clinell wipe.
10. Open all remaining items onto the sterile field.
11. Expose line and assess line site.
12. Wash and dry hands. Put on sterile gloves.
13. Unfold sterile drape from the dressing pack and peel off stripe, exposing the adhesive. Hold with dominant hand.
14. Using the non-dominant hand, pick up a Clinell wipe and hold line up.
15. Attach the adhesive strip to the patient's chest. Keep line elevated and off the sterile drape.
16. Using the dominant hand pick up another Clinell wipe and clean down the line, including clamp, needle free device and giving set/Curos port.
17. Remove Curos port/giving set and discard. Keep line elevated and off the sterile drape and clean the end of the needle free device using a Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell wipe.
18. Connect a 10 ml syringe to needle free device on end of line.
19. Unclamp line. Take 3 -5ml ml of blood, disconnect syringe and discard as this will be mixed with saline.
20. Using another syringe, withdraw appropriate amount of blood from line for sampling and disconnect syringe.
21. Connect syringe to the red blunt needle, and insert sample into relevant blood bottles, according to Manufacturers recommended order of draw. Invert/agitate bottles as per manufacturer's direction.
22. Pick up the pre-filled sodium chloride syringe. Expel air lock in the syringe and attach to needle free device.
23. Using the push-pause technique, flush the sodium chloride into the line. As the last 1 ml is being flushed, close the line clamp to provide a positive pressure. Discard syringe.
24. Remove the needle free device. Keep the line elevated and off the sterile drape and clean the end of the line using a Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell Wipe.

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25. Pick up the other pre-filled sodium chloride syringe. Expel air lock in the syringe and attach to the new needle free device.
26. Attach the new needle free device with syringe to end of line.
27. Unclamp the line.
28. Using the push-pause technique, flush the sodium chloride into the line. As the last 1 ml is being flushed, clamp the line to provide a positive pressure. Remove empty syringe from needle free device and discard.
29. Peel off the tab of the Curoc port and attach to the end of the needle free device.
30. Remove gloves and alcohol gel hands.
31. Dispose of all waste as per UHB policy.
32. Wash hands.
33. At the bedside, recheck patient identity, label blood samples and forms. If all correct, send to the laboratory according to UHB policy.
34. Complete surveillance form, and record procedure and any concerns in the medical notes.

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Blood Culture Procedure

This can be done as part of the procedures above. If blood is being collected for biochemical sampling and cultures at the same time, the culture bottles should always be filled first to prevent cross contamination from other blood bottles.

Equipment

Trolley and large Clinell Universal wipe (**only used for trolley preparation**)

Dressing pack

Sterile gloves

2 x 10 ml sterile pre-filled sodium chloride (0.9%) syringe

Needle free device

Curos port

20 ml syringe

Red blunt fill needle

Blood culture bottles

Small Clinell wipes (2% Chlorhexidine, 70% Alcohol)

Alcohol gel

Disposable Apron

Sterile adhesive edge drape

Procedure

1. Follow Pre-connection Procedure on page 7.
2. Prepare the patient for the procedure: Explain procedure and obtain consent
3. Gather equipment in a tray.
4. Prepare trolley as detailed on page 6.
5. Put on apron. Alcohol gel hands.
6. Open dressing pack outer packaging and drop it onto trolley.
7. Only touching the corners, open out dressing pack creating a sterile field.
8. Clean Curos port with a Clinell wipe, wipe clean and drop onto sterile field. Discard Clinell wipe.
9. Clean the blood bottles with a Clinell wipe, taking extra care to clean the neck and

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top of the bottles, and place onto edge of sterile field. Discard Clinell wipe.

10. Open all remaining items onto the sterile field.
11. Expose line and assess line site.
12. Wash and dry hands. Put on sterile gloves.
13. Unfold sterile drape from the dressing pack and peel off stripe, exposing the adhesive. Hold with dominant hand.
14. Using the non-dominant hand, pick up a Clinell wipe and hold line up.
15. Attach the adhesive strip to the patient's chest. Keep line elevated and off the sterile drape.
16. Using the dominant hand pick up another Clinell wipe and clean down the line, including clamp, needle free device and giving set/Curos port.
17. Remove Curos port/giving set and discard. Keep line elevated and off the sterile drape and clean the end of the needle free device using a Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell wipe.
18. Connect 20 ml syringe to needle free device on end of line.
19. Unclamp line. Withdraw 20 ml of blood and disconnect syringe. This will be used as the sample for the culture bottles.
20. Connect syringe to red blunt needle and insert the needle into the ANAEROBIC bottle first (gold top). Release 10 ml and withdraw needle.
21. Insert needle into the AEROBIC bottle second (blue top) and release remaining 10 ml.
22. Pick up the pre-filled sodium chloride syringe. Expel air lock in the syringe and attach to needle free device.
23. Using the push-pause technique, flush the sodium chloride into the line. As the last 1 ml is being flushed, close the line clamp to provide a positive pressure. Discard syringe.
24. Remove the needle free device. Keep the line elevated and off the sterile drape and clean the end of the line using a Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell wipe.
25. Pick up the other pre-filled sodium chloride syringe. Expel air lock in the syringe and attach to the new needle free device.

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26. Attach the new needle free device with syringe to end of line.
27. Unclamp the line.
28. Using the push-pause technique, flush the sodium chloride into the line. As the last 1 ml is being flushed, clamp the line to provide a positive pressure. Remove empty syringe from needle free device and discard.
29. Peel off the tab of the Curoc port and attach to the end of the needle free device.
30. Remove gloves and alcohol gel hands.
31. Dispose of all waste as per UHB policy.
32. Wash hands.
33. At the bedside, recheck patient identity, label blood samples and forms. If all correct, send to the laboratory according to UHB policy.
34. Complete surveillance form, and record procedure and any concerns in the medical notes.

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Drug Line Lock Procedure (vial and pre-filled syringe)

Equipment

Trolley and large Clinell Universal wipe (**only used for trolley preparation**)

Dressing pack

Sterile gloves

1 x 10 ml sterile pre-filled sodium chloride (0.9%) syringe

Curos port

Small Clinell wipes (2% Chlorhexidine, 70% Alcohol)

Alcohol gel

Disposable Apron

Sterile adhesive edge drape

Vial equipment

Medication vial

Water for injection ampoule

10 ml syringe

Red blunt needle

Or pre-filled medication syringe

Procedure

1. Follow Pre-connection Procedure on page 7.
2. Prepare the patient for the procedure: Explain procedure and obtain consent
3. Gather equipment in a tray.
4. Prepare trolley as detailed on page 6.
5. Put on apron. Alcohol gel hands.
6. Open dressing pack outer packaging and drop it onto trolley.
7. Only touching the corners, open out dressing pack creating a sterile field.
8. Clean Curos port using a Clinell Wipe, and drop onto sterile field. Discard Clinell Wipe.
9. If using, clean the medication vial and water for injection ampoule with a Clinell wipe, taking extra care to clean the neck and top of the bottles, and place

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onto edge of sterile field. Discard Clinell wipe.

10. Open all remaining items onto sterile field.
 11. Expose line and assess line site.
 12. Wash and dry hands. Put on sterile gloves.
 13. Unfold sterile drape from the dressing pack and peel off stripe, exposing the adhesive. Hold with dominant hand.
 14. Using the non-dominant hand, pick up a Clinell wipe and hold line up.
 15. Attach the adhesive strip to the patient's chest. Keep line elevated and off the sterile drape.
 16. Using the dominant hand pick up another Clinell wipe and clean down the line, including clamp, needle free device and giving set/Curos port.
 17. Remove Curos port/giving set and discard. Keep line elevated and off the sterile drape and clean the end of the needle free device using a Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell wipe.
 18. Pick up the other pre-filled sodium chloride syringe. Expel air lock in the syringe and attach to needle free device.
 19. Using the push-pause technique, flush the sodium chloride into the line. As the last 1 ml is being flushed, close the line clamp to provide a positive pressure. Remove empty syringe from needle free device and discard.
- (If using pre-filled medication syringe, skip steps 20 and 21).**
20. Using the 10 ml syringe and red blunt needle, reconstitute the medication with the water for injection.
 21. Obtain the correct volume and dose required as per prescription, in the 10 ml syringe and remove the red blunt needle.
 22. Attach the syringe containing the medication to the end of the needle free device on the line.
 23. Unclamp line.
 24. Slowly inject the medication drug solution into the line – as the last 0.5 ml is injected, clamp the line to provide positive pressure and to ensure the medication is 'locked' in the line. Remove syringe from needle free device and discard.

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25. Peel off the tab of the Curoc port and attach to the end of the needle free device.
26. Remove gloves and Alcohol gel hands.
27. Dispose of all waste as per UHB policy.
28. Wash hands.
29. Complete surveillance form, prescription chart, and fluid balance and record procedure and any concerns in the medical notes.

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Tunnelled line repair procedure

A line repair should only be attempted by suitably trained staff. If you suspect that a line may be damaged, **do not use the line and notify the NST as soon as possible**.

The length of the remaining external segment must be sufficient to permit catheter repair and prevent catheter retraction under the skin, at least 5 cm from exit site.

If necessary, the catheter may be used for infusion after 4 hours. The joint will not achieve full mechanical strength for 48 hours; the splint can then be removed.

Equipment

Trolley and large Clinell Universal wipes (**only used for trolley preparation**)

Dressing pack

Line Repair kit

Needle free device

Sterile scissors

Disposable clamp

Large transparent dressing (e.g. Tegaderm)

IV 3000 dressing

2 x 10 ml sterile pre-filled sodium chloride (0.9%) syringe

Small Clinell Wipes (2% chlorhexidine, 70% alcohol)

Alcohol gel

2 x of sterile gloves

Sterile adhesive edge drape

Disposable apron

Curos port

Sterile gauze

Tongue Depressor (to act as a splint)

Tape

Procedure

1. Follow Pre-connection Procedure on page 6.
2. Prepare the patient for the procedure: Explain procedure and obtain consent
3. Gather equipment in a tray.

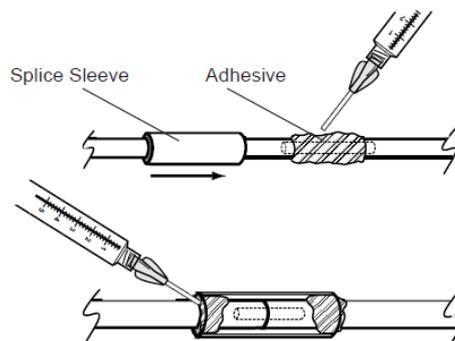
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4. Prepare trolley as detailed on page 5.
5. Put on apron. Alcohol gel hands.
6. Open dressing pack outer packaging and drop it onto trolley.
7. Only touching the corners, open out dressing pack creating a sterile field.
8. Clean Curoc port using a Clinell Wipe, and drop onto sterile field. Discard Clinell Wipe.
9. Open all remaining items onto sterile field.
10. Expose line and assess line site.
11. Wash and dry hands. Put on sterile gloves.
12. Unfold sterile drape from the dressing pack and peel off stripe, exposing the adhesive. Hold with dominant hand.
13. Using the non-dominant hand, pick up a Clinell wipe and hold line up.
14. Attach the adhesive strip to the patient's chest. Keep line elevated and off the sterile drape.
15. Using the dominant hand pick up another Clinell wipe and clean down the line, including clamp, needle free device and Curoc port. Discard Clinell wipe.
16. Remove Curoc port and discard. Keep line elevated and off the sterile drape and clean the end of the needle free device using a Clinell wipe. The line can now be dropped onto the sterile drape. Discard Clinell wipe.
17. Inspect the line for visible damage; a gentle 1 ml flush of saline can be used to identify small areas of damage not easily visible.
18. Once damaged area is identified, using a disposable clamp, clamp the line near the exit site.
19. Remove gloves and Alcohol gel hands
20. Open the repair kit and drop contents onto sterile field. Inspect kit for all components.
21. Wash and dry hands. Put on second pair of sterile gloves.
22. Remove the plunger from the syringe barrel, squeeze the medical adhesive into the barrel, re-insert plunger, and attach blunt needle.
23. Pick up the pre-filled sodium chloride syringe. Expel air lock in the syringe then attach to the new needle free device. Prepare the new segment of line by

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attaching the needle free device and syringe to the new line segment and priming it with sodium chloride. Discard syringe.

24. Cut the external portion of the damaged catheter at a 90° angle just distal to the damaged area.
25. Apply adhesive onto the exposed stent of the replacement segment ensuring the adhesive does not occlude the opening of the inner lumen.
26. Insert the stent of the replacement segment into the existing, cut broviac line.



27. Use syringe to apply adhesive onto the outside of the catheter around the spliced joint, slide the splice sleeve down and centre over the joint. Inject adhesive under each end of the splice sleeve, gently roll between fingers to distribute the adhesive evenly, wipe away excess adhesive.
28. Remove disposable clamp using gauze or second person if available.
29. Pick up the pre-filled sodium chloride syringe. Expel air lock in the syringe then attach to needle free device.
30. Unclamp the line.
31. Using the push-pause technique, gently flush the sodium chloride into the line. As the last 1 ml is being flushed, close the line clamp to provide a positive pressure. Discard syringe.
32. Peel off the tab of the Curos port and attach to the end of the needle free device.
33. Fasten the catheter repair joint to a splint- formed by cutting a tongue depressor into 2 halves, sandwich the repaired segment between the two halves and secure with tape. Wrap with gauze for patient comfort.
34. Secure line to the patient by applying a large transparent dressing over line and repair site ensuring there is sufficient access to clamp and end of line to allow for

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continued infusions.

35. Remove gloves and Alcohol gel hands.

36. Dispose of all waste as per UHB policy.

37. Document line repair; include patient name, hospital number and LOT number of repair kit.