

PATIENT CARE PLAN FOR CARE OF PERIPHERAL MIDLINE

The care plan is designed to be used in conjunction with CINS Guidelines for vascular devices.

Manufacturers' specific recommendations should be noted and adhered to by individual practitioners.

Patient addressograph label / patient name

Review Dates:	
Date	Comments

**REASON FOR INSERTION
 DEVICE TYPE...**

DATE OF INSERTION...

Named Nurse or Advisor details....

The Clinical Interventions Team at The Clatterbridge Cancer Centre 0151 556-5737 bleep 4095 Mon –Fri 9-5 or alternatively the CCC Hotline on 0800 169 5555 which is available 24 hours a day 7 days a week.

These general guidelines have been provided to assist all health care professionals when handling Clatterbridge Midlines.

Issue Date: 22 nd June 2017	Page: Page 1 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

Visual Infusion Phlebitis (VIP) Scoring Tool for Intravenous Access Device (VIAD)

Exit site appears healthy	→	No sign of phlebitis Observe PICC exit site	0
One of the following is evident: Slight pain near exit site Slight redness near exit site	→	Possible first signs of phlebitis Continue to observe IV catheter	1
Two of the following are evident: Pain at exit site Swelling Erythema	→	IMPORTANT Seek advice VIP score 3-5 Mon-Fri between 9am and 5pm ring the Clinical Interventions Team on 0151 556-5737 or bleep 4095 Out - of - hours ring CCC Hotline on 0800 169 5555	2
All of the following are evident: Pain along the IV catheter Erythema Swelling	→		3
All of the following are evident and extensive: Pain along the path of the IV catheter Erythema Swelling Palpable venous cord	→		4
All of the following are evident and extensive: Pain along the path of the IV catheter Erythema Swelling Palpable venous cord Pyrexia	→		5
			Complete contact record with name and details of problem.

Trouble shooting guide:

Type of device	Risks	Actions	Variations / Comments	SIGN
<i>Midline</i>	Infection due to loss of skin integrity	<ul style="list-style-type: none"> • Site clean and protect with sterile dressing depending on patients tolerance. • Minimum of eight hourly inspection using the VIIAD score of exit site for signs of inflammation or infection. Do not remove dressing unless soiled. • Take swab for culture and sensitivity if indicated • Check weekly or at each visit if in community setting • Observe patient for signs of line infection (pyrexia/raised WCC) • If clinically unstable and patient has had rigors, take blood cultures from line after an independent venous sample • Assess medical condition prior to removal of line • Send line tip for culture and sensitivity following removal, in community only send if line sepsis suspected • Ensure administration lines in place following local policy.. • Replace administration lines up to a max of 96hrs if constituted in ward environment. • Label infusion lines with date for renewal. • Change add-on devices at same time as administration sets or as soon as integrity is compromised. Use needle-free systems and avoid 3 way taps 		
Issue Date: 22 nd June 2017	Page: Page 3 of 14	Filename: FNUAMANMI	Issue No: 2.2	
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:	

	Air embolus	<ul style="list-style-type: none"> • Use Needle-free systems • Ensure air dispelled from medication/ flushes/infusates prior to administration. • Assess need for infusion pump 		
	Occlusion of lumen.	<ul style="list-style-type: none"> • Maintain patency via 0.9% Sodium chloride for injection flushes, Pre & post drug/ infusion administration. • Ensure compatibility of drugs/infusates to avoid precipitation. • Ensure weekly flushes when not in use. Use needle-free system using positive pressure flush 		
	Bleeding from site / line itself.	<ul style="list-style-type: none"> • Observe for signs of bleeding from site. • Apply pressure above dressing • Ensure add on devices/taps securely fastened. • . 		
	Line migration / displacement	<ul style="list-style-type: none"> • Check notes to ensure medical staff have documented line is in correct place and safe to use • If line disconnected for any reason then discard • Check each time line accessed for signs of line migration and that the Securacath device is closed correctly • Anchor lines to avoid accidental displacement if in doubt do not use line and ensure patient is aware of problems which may occur. 		
	Line in situ when no longer required.	Ensure prompt removal when line no longer required, and inform The Clinical Interventions Team of removal.		

Issue Date: 22 nd June 2017	Page: Page 4 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

Exit dressing change:

Action	Rationale
<p><u>Equipment required</u> Dressing Pack containing sterile towel and Gloves Gauze swabs x 3, Surgical tape Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol swab or Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated applicator Semi-Permeable transparent IV dressing Alcohol hand rub or gel Plastic apron.</p>	
<p><u>Care of Exit site</u> Dressing changes should be performed on a weekly basis or when dressing is dirty or loose.</p> <ul style="list-style-type: none"> ▪ Before the procedure begins make sure that your hands are washed and dried thoroughly and that they continue to be decontaminated during the procedure. A plastic apron should be worn. ▪ Maintain aseptic technique at all times. ▪ Inspect the catheter exit site for signs of skin discolouration or signs of infection e.g. exudates from exit site. If you suspect infection please contact the hospital team who placed the catheter for advice. Refer to trouble-shooting guide. 	<p>To prevent infection</p> <p>Exit site dressings are important in preventing trauma and the extrinsic contamination of the site of entry (Jones 2004).</p>
<ul style="list-style-type: none"> • Explain the procedure to the patient. Ensure that valid consent is gained. • Ensure working area is as clean as possible. • Ensure all equipment is gathered before commencing the procedure and all packaging is intact and in date. 	<p>To prevent/reduce patient anxiety Maintain safety and reassure patient.</p> <p>To prevent infection and catheter contamination.</p>
<ul style="list-style-type: none"> • Open sterile pack, allowing inner pack to fall onto the clean working area. • Open out sterile pack to create a sterile field. Open remaining equipment ensuring no contamination of sterile field. Open Chlorhexidine impregnated applicator. 	<p>To allow for a sterile environment for accessing intravenous catheter.</p>

Issue Date: 22 nd June 2017	Page: Page 5 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

<ul style="list-style-type: none"> • Loosen exit site dressing. To loosen dressing lift lower end and gently ease the dressing off from the skin • Dressing should be removed from the direction from the end of the line towards the exit site to prevent accidental catheter removal. Be aware that fixation device may come off with the dressing, so care should be taken to prevent migration. 	<p>To reduce incidence of infection</p> <p>Chlorhexidine based solutions are recommended (in alcohol) as per policy (DOH 2001)</p> <p>To prevent accidental removal of the catheter and friction or trauma to skin surface.</p>
<ul style="list-style-type: none"> ▪ Aseptically remove the dressing. ▪ Wash hands and put on sterile gloves ▪ Place sterile towel as near as possible to the catheter. ▪ Clean around the catheter and exit site with Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated applicator. ▪ The solution should be applied with friction but should not be too vigorous or the skin's natural defence may be destroyed ensuring the line is lifted to clean beneath the Securacath device ▪ Allow to dry. ▪ Then apply a transparent permeable dressing to exit site. ▪ Remove the dressing towel ▪ Remove gloves. ▪ Clear away equipment. Dispose of contaminated waste as per policy. Remove apron. ▪ Decontaminate hands. ▪ Document care in patient's records making a note of the VIIAD score. 	<p>Alcoholic Chlorhexidine combines the benefits of rapid action and excellent residual activity (DOH 2001)</p> <p>Semi-permeable transparent IV dressings are well tolerated by patients (Campbell et al 1999, Treston-Aurand et al 1997, Wille 1993) and are easy to apply and remove (Wille 1997).</p>

Issue Date: 22 nd June 2017	Page: Page 6 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

Peripheral Midline - 0.9% Sodium Chloride more frequently if required

Action	Rationale
<p><u>Equipment Required</u> Dressing Pack containing sterile towel and gloves Gauze swabs x 3 10ml syringes x 3 Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol applicator or 2% Chlorhexidine in 70% Isopropyl alcohol impregnated wipe. 10ml 0.9% Sodium Chloride pre filled syringe Surgical tape Alcohol hand rub Plastic apron Needle free I/V access connector change as per manufacturer's guidelines se</p>	<p>10 ml syringes should always be used. Smaller syringe sizes may damage the catheter (Hadaway 1998)</p>
<ul style="list-style-type: none"> ▪ Before the procedure begins make sure that your hands are washed and dried thoroughly and that they continue to be decontaminated during the procedure. A plastic apron should be worn. • Maintain aseptic technique at all times. • Explain the procedure to the patient. Ensure that valid consent is gained. • Inspect the catheter exit site for signs of inflammation or signs of infection e.g. exudates from exit site. If you suspect infection please contact the hospital team who placed the catheter for advice. Refer to trouble-shooting guide. • Ensure working area is as clean as possible. • Ensure all equipment is gathered before commencing the procedure and all packaging is intact and in date. • Open sterile pack allowing inner pack to fall onto clean working area. • Open out sterile pack to create a sterile field. Open remaining equipment ensuring no contamination of sterile field. • Place 0.9% sodium chloride pre filled saline syringe. Open the 2% Chlorhexidine 	<p>Maintain asepsis.</p> <p>Reduce risk of infection. Reduce anxiety and improve patient compliance</p> <p>Chlorhexidine based solutions are recommended (in alcohol) dependent on the availability and catheter manufacturers recommendations (DOH 2001).</p>

Issue Date: 22 nd June 2017	Page: Page 7 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

applicator.

- Ensure easy access to the needle free system.
- Decontaminate hands.
- Put on sterile gloves. .
- Place sterile towel as near as possible to the catheter.
- Scrub the hub of the needle free system with 2% Chlorhexidine impregnated wipe, rubbing from the top of the needle free connector to the sides. Do this several times using different parts of the wipe, over a period of 30 seconds.
- Allow to dry.
- Attach syringe with 0.9% sodium chloride flush pull back to colour the saline with blood and inject the flush using a push/pause action, clamping as the last ml of solution is instilled into the catheter.
- Remove the syringe and discard.
- NEVER FORCE THE SOLUTION INTO THE CATHETER, this can damage the catheter.
- Ensure that the catheter is wrapped in sterile gauze if line being discharged and secured with a transparent dressing and comfortable.
- Remove dressing towel and discard. Remove gloves.
- Wash hands
- Clear away equipment used taking care to dispose of contaminated waste as per policy.
- Document care in patient's records.

The pulsated flush creates turbulence within the catheter lumen, removing debris from the internal catheter wall (Goodwin & Carlson 1993, Todd 1998).
 Positive pressure within the lumen of the catheter should be maintained to prevent reflux of blood (INS 2000).

Issue Date: 22 nd June 2017	Page: Page 8 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

Peripheral Midline –Administration of antibiotics/infusion/additives

Administer drugs or IV therapy as prescribed using correct diluent and rate of infusion. A midline should not be used routinely to administer chemotherapy

Action	Rationale
<p><u>Equipment Required</u> Dressing pack containing sterile towel and gloves Gauze swabs x 3, 10ml syringes x 4 Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol applicator or Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated wipe 2 x 10ml 0.9% Sodium Chloride pre filled saline syringes for injection NEVER USE LESS THAN A 10ML SYRINGE Surgical tape Alcohol hand rub/ gel, Antibiotics/additives/infusion as prescribed Plastic apron</p>	
<ul style="list-style-type: none"> ▪ Before the procedure begins make sure that your hands are washed and dried thoroughly and that they continue to be decontaminated during the procedure. A plastic apron should be worn. • Maintain aseptic technique at all times. • Explain the procedure to the patient. Ensure that valid consent is gained. • Inspect the catheter exit site for signs of skin discolouration or signs of infection e.g. exudates from exit site. If you suspect infection please contact the hospital team who placed the catheter for advice. Refer to trouble-shooting guide. • Ensure working area is as clean as possible. • Ensure all equipment is gathered before commencing the procedure and all packaging is intact and in date. • Open sterile pack allowing inner pack to fall onto clean working area. • Open out sterile pack to create a sterile field. Open remaining equipment ensuring no contamination of sterile field. • Place 0.9% Sodium Chloride pre filled syringe on the sterile field. Open 2% Chlorhexidine wipe. 	<p>Reduce the risk of infection and contamination</p> <p>Ensures patient compliance and reduces anxiety</p> <p>Maintain asepsis. Reduce the risk of infection and contamination.</p> <p>To avoid contamination</p>

Issue Date: 22 nd June 2017	Page: Page 9 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

- Ensure easy access to the needle free system.
- Decontaminate hands
- Put on sterile gloves. Connect needle or filter straw to the syringe.
- Place sterile towel as near as possible to the catheter.
- Scrub the hub of the needle free system with 2% Chlorhexidine impregnated wipe, rubbing from the top of the needle free connector to the sides. Do this several times using different parts of the wipe, over a period of 30 seconds. Allow to dry.
- Attach syringe containing the 0.9% Sodium Chloride solution to the needle free system then pull back to colour the saline with blood and then Inject the solution using a push/pause action, clamping as the last ml of solution is instilled into the catheter. Remove the syringe and discard. Blood return is not always possible with a midline
- NEVER FORCE THE SOLUTION INTO THE CATHETER, this can easily damage the catheter.
- Administer IV antibiotics/infusion/additives as prescribed. Chemotherapy should not be used via a midline.
- Flush catheter again using second pre filled saline syringe.
- Ensure that the catheter is secure and comfortable.
- Remove dressing towel and discard. Remove gloves. Wash hands
- Clear away equipment used. Dispose of contaminated waste as per organisational policy.
- Document care in patient's records.

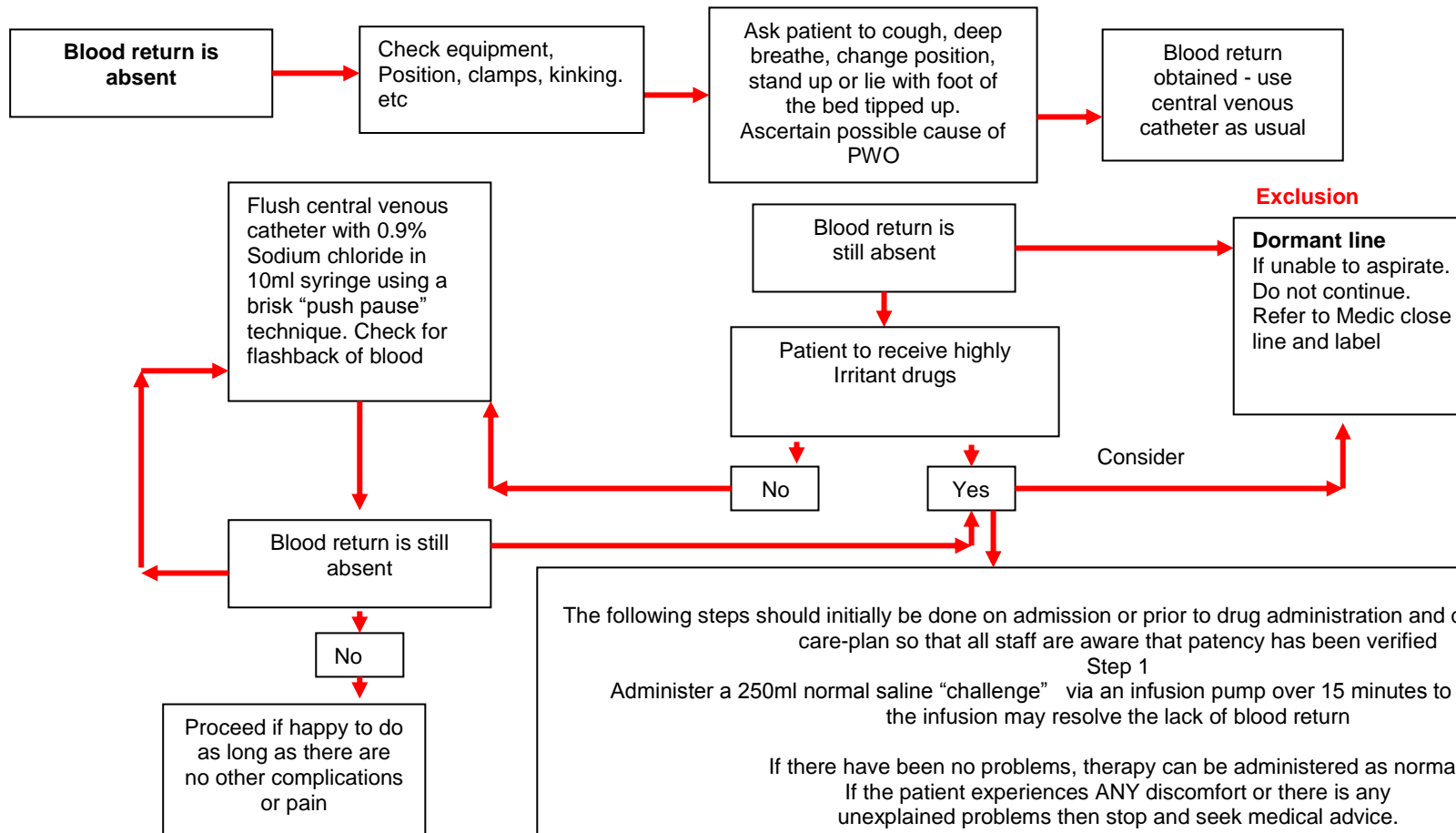
Creates turbulence in catheter, preventing clotting in the catheter. Maintains positive pressure and prevents backflow of blood into the catheter.

Chemotherapy should not be used via a midline as it is difficult to observe for a chemotherapy extravasation.

Issue Date: 22 nd June 2017	Page: Page 10 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

Algorithm persistent withdrawal occlusion

i.e. fluids can be infused freely by gravity but blood cannot be withdrawn from



The following steps should initially be done on admission or prior to drug administration and documented in nursing care-plan so that all staff are aware that patency has been verified

Step 1
Administer a 250ml normal saline "challenge" via an infusion pump over 15 minutes to test for patency – the infusion may resolve the lack of blood return

If there have been no problems, therapy can be administered as normal.
If the patient experiences ANY discomfort or there is any unexplained problems then stop and seek medical advice.

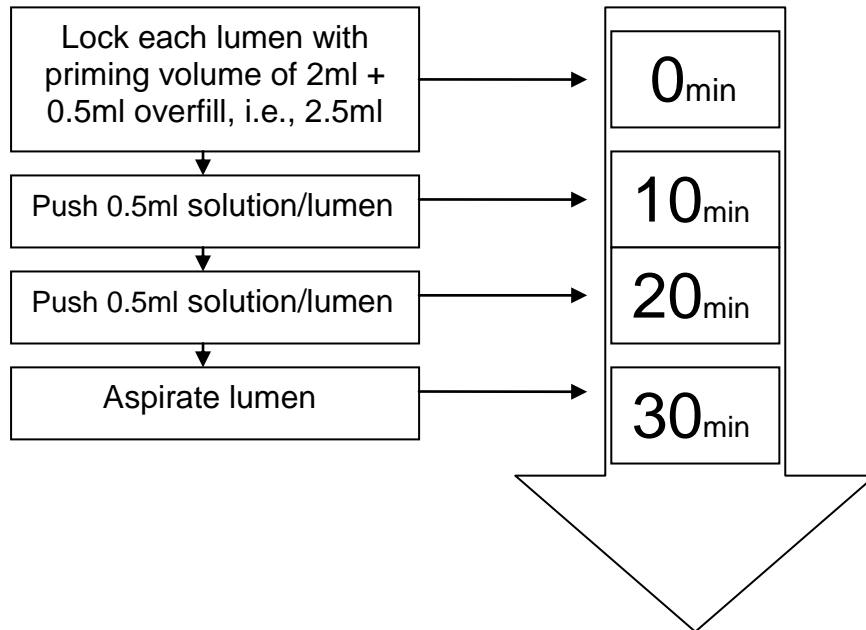
OR

Step 2 Instill Urokinase 1,000iu in 3.5 mls of 0.9% Sodium Chloride and instill using the push lock method . After this time withdraw the urokinase and assess the catheter again.
Repeat as necessary.

Adapted from Standards for Infusion Therapy RCN (2016)

Issue Date: 22 nd June 2017	Page: Page 11 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

The Push–Lock Method: Reconstitute a 10,000IU vial of Urokinase using 3.5ml of 0.9% sodium chloride for each lumen.



Issue Date: 22 nd June 2017	Page: Page 12 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

REFERENCES:

1. **Department of Health (DOH) (2001)** Guidelines for preventing infection associated with the insertion and maintenance of central venous catheters, Journal of Hospital Infection, 47 Supplement S47 – S67
2. **Department of Health (DOH 2003).** Winning Ways: Working together to reduce health care associated infection in England
3. **Department of Health (DOH 2005).** Saving Lives: A delivery programme to reduce health care associated infection including MRSA
4. **Goodwin M, Carlson I (1993)** The peripherally inserted catheter: a retrospective look at 3 years of insertions, Journal of Intravenous Nursing, 16 (2) 92-103
5. **Hadaway L (1998)** Catheter connection, Journal of Vascular access devices 3 (3), 40.
6. **Infection Control Nurses Association (2001)** Guidelines for Preventing Intravascular Catheter-related Infection.
7. **INS (2000)** Infusion Nursing Standards of Practice, Journal of Intravenous Nursing 23 (6S) supplement
8. **Todd J (1998)** Peripherally inserted central catheters. Professional Nurse 13(5) 297-302
9. **Jones A (2004)** Dressings for the Management of Catheter Sites – A review. JAVA, Vol. 9 No 1, 1-8.
10. **Campbell H, Carrington M (1999)** Peripheral IV cannula dressings: advantages and disadvantages. British Journal of Nursing, 8(21):1420-1422, 1424-1427
11. **Treston-Aurand J et al (1997)** Impact of dressing materials on central venous catheter infection rates. Journal of Intravenous Nursing 20(4):201-206.

Issue Date: 22 nd June 2017	Page: Page 13 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No:

- 12. Wille JC (1993)** A comparison of two transparent film-type dressings in central venous therapy. *Journal of Hospital Infection* 23(2):113-121.
- 13.INS (2000) Standards for infusion therapy. Cambridge, MA: INS and Becton Dickinson (III)** In *RCN Standards for Infusion* (2005).
- 14.Masoorli S (2003)** Extravasation injuries associated with the use of central venous access devices. *Journal of vascular access devices*. 21-23 Spring

Issue Date: 22 nd June 2017	Page: Page 14 of 14	Filename: FNUAMANMI	Issue No: 2.2
Author: Carol McCormick	Authorised by: Elizabeth Morgan & Helen Clark		Copy No: