# Procedure/Guidelines/Protocol Checklist & Version Control Sheet

## Name of Procedure/Guidelines/Protocol:
Procedure for Umbilical Venous catheterisation in a Neonate (UVC)

## Purpose of Procedure/Guidelines/Protocol:
To safely obtain central venous access via an umbilical vein

## Replaces:
January 2009 version hard copy

## Applicable to which staff:
Neonatal and SCBU nursing and medical staff.

## Name & title of author:
Una Toland Lead Nurse Neonatal Services and ANNP team SH&SCT

## Equality Screened by:
N/A

## Proposals for dissemination:
Una Toland via team managers to nursing staff

## Proposals for implementation:
With immediate effect

## Training Implications:
To be included in induction training of all new staff

## Date Procedure/Guideline/Protocol submitted to Procedures Committee:
31-03-13

## Outcome:
Approved

## Date of CYP SMT approval
Comments:

## Date of approval by Trust SMT (if required):

## Date approved by HSCB (Social Work only):

## Date for further review (3 year default):
June 2014

## Date added to repository:

## Date added to Intranet:
State where to be placed on Intranet:
PROCEDURE FOR: UMBILICAL VENOUS CATHETERISATION – (UVC)

**Statement:** Umbilical venous catheterisation provides emergency access for infants who are preterm/ sick enough to require central access (for example, sepsis, **MAS** or **PPHN**). A UVC may also be inserted if unable to obtain peripheral intravenous access. 15% Dextrose and or specific drugs are also infused via a central venous access device.

**The following documents are associated with this procedure**
- NMC Standards for Medicine administration August 2008
- The SH&SCT Medicines management Policy 2008
- SH&SCT Policy on gaining consent 2009
- NI Neonatal CR-BSI Surveillance Central venous line and Umbilical Catheter Care Bundles NICORE 2009
- Procedure for Aseptic technique The Royal Marsden Hospital Manual of Clinical Nursing Procedures 7th edition Dougherty and Lister
- Skin cleansing guideline

**Equipment:**

Clean stainless steel trolley  
Umbilical Cannulation tray:-  
  - 2x artery clips  
  - 1x toothed dissecting forceps  
  - 1x non-toothed dissecting forceps  
  - 1x needle probe  
  - 1x needle holder  
  - 1x Scissors  
Neonatal Lone Line Pack:-  
  - 2x drapes  
  - 1x forceps  
  - Measuring tape  
  - Tegaderm Dressing  
  - 10ml Syringe  
  - Cotton Balls  
  - No.11 scalpel handle  
  - Hydrocolloid dressing  
  - Skin cleansing agent as per local guideline  
  - 3.5fr umbilical catheter (neonate weight <1500g)  
  - 5fr umbilical catheter (neonate weight>1500g)  
  - Consider double lumen catheter  
  - 3 way tap and 1 green bionnector
**SOUTHERN HEALTH & SOCIAL CARE TRUST**

1ml syringe, 2x 5ml syringes and 50ml syringe  
Blue venous infusion line plus 2 central venous line identification labels  
1 filter needle  
Ribbon gauze  
1 sterile gown and sterile gloves  
2% Clinell wipe  
1 Ampoule Hepsal flush/0.9% normal saline  
Hydocolloid dressing / Mersilk suture 3.0

**Contraindications**  
Omphalitis  
Omphacele  
Necrotoising enter colitis

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**The Umbilical Venous Catheter should be inserted under asepsis using ANTT.**

<table>
<thead>
<tr>
<th>ACTION</th>
<th>RATIONALE</th>
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<tbody>
<tr>
<td>Where possible parents should be informed of the planned procedure</td>
<td>To gain co-operation of parents and to keep them fully informed</td>
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<tr>
<td>Decontaminate hands as per local policy adhering to the 7 step technique and 5 moments of hand hygiene</td>
<td>To minimize risk of infection</td>
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<tr>
<td>Prepare trolley for aseptic procedure and engage an assistant to help</td>
<td>To reduce risk of transmission of micro-organisms and contamination of sterile field</td>
</tr>
<tr>
<td>Dr/ANNP decontaminates hands using 7 step technique and wears sterile gown and gloves for initial insertion of line</td>
<td>To reduce the risk of cross-infection</td>
</tr>
<tr>
<td>The umbilical venous catheter is always inserted under asepsis using ANTT</td>
<td>To minimise the risk of infection.</td>
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<tr>
<td>Preparation of infant- Nurse on open Giraffe incubator with transitional heat maximised .Full corimetric monitoring</td>
<td>To prevent heat loss and ensure NTE</td>
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<tr>
<td>Ensure continuous monitoring of infants vital signs Heart rate, respiratory rate and saturation</td>
<td>To allow prompt response to deterioration in infants condition</td>
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<tr>
<td>Assess the NIPS and treat appropriate</td>
<td>To alleviate any discomfort for infant during procedure</td>
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<tr>
<td>Placement of UVC</td>
<td>To ensure catheter is in correct position</td>
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<tr>
<td>UVC distance (cm) = (1.5 X birth weight (kg) +5.5 or shoulder to umbilicus and add on length of stump</td>
<td>This should place the tip of the catheter above the diaphragm and outside the chambers of the heart.</td>
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<tr>
<td>In an Emergency</td>
<td>Insert UVC 3-5cms. This placement is not recommended for long term use</td>
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<td>Prepare the UVC under sterile conditions by connecting the 3-way tap to end of the catheter. Draw up 5-mls of heparinised saline and flush each port of the 3-way tap through to end of catheter. Turn the tap off to catheter and leave syringe attached.</td>
<td>3 way tap facilitates withdrawal of blood samples. If a continuous infusion is connected to the line, the 3 way tap should be removed. Ensures no air bubbles are present in the system thus reducing the risk of air embolus.</td>
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<tr>
<td>An assistant should hold the umbilicus upright with the cord clamp, while the Dr/ANNP decontaminates the cord and an area of surrounding skin (approximately 3-5 cm around cord base) using skin cleansing preparation as per local guideline.</td>
<td>To minimize infection risk</td>
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<tr>
<td>Drape the neonate’s abdomen with sterile towels, allowing adequate exposure to the umbilical cord and base.</td>
<td>To maximise sterile field</td>
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<td>Using ribbon gauze tie a knot around the base of the cord as close to the abdominal wall as possible. Secure but do not over tighten the knot.</td>
<td>To avoid bleeding after the umbilical stump is cut.</td>
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<tr>
<td>Cut the umbilical stump to within 1-2 cm of the abdominal wall using a No. 11 scalpel blade</td>
<td>To allow visualisation of umbilical vessels and allow ease of catheter insertion</td>
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<tr>
<td>Identify the umbilical vein. This is the single large thin walled vessel. The vessel is dilated, and the primed catheter is inserted to required distance. The Green bionnector is attached to the catheter and the 3-way tap.</td>
<td>To ensure correct placement of catheter</td>
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</table>
**Inserting the catheter into the umbilical vein**

Assess maturity of infant/skin integrity and secure in place using methods below
- Hydrocolloid dressing strips are placed on either side of the umbilical stump, the catheter is looped and a Tegaderm dressing applied or suture in place using Mersilk 3.0 if required

To secure catheter in place and reduce risk of dislodgement

Dr/ANNP to order Abdominal X-ray to confirm position of UVC. After x-ray confirmation withdraw the catheter if necessary. Document position in notes and complete care bundle insertion documentation.

NB Never advance catheter

Confirms accurate placement of catheter prior to commencing infusion. Ideal position is through diaphragm

Following procedure dispose of all equipment as per unit policy

Reduces risk of Sharps injury and ensures clinical waste is disposed of appropriately.

Ensure all documentation is complete
- Insertion checklist
- Insertion care bundle
- Maintenance care bundle

Ensures traceability and adherence to NMC standards for record keeping

An infant with an UVC in situ should never be left unattended.

Ensures vigilant observation for accidental dislodgement or haemorrhage

Connections are checked at beginning of each shift and hourly to ensure they are secure and there are no kinks in the lines. Regularly observe circulation to lower limbs

To ensure patency of UVC and to reduce risk of dislodgement

The nappy must not be fastened in such a manner as to obscure view of the umbilical stump

To maximise visibility and ensure that there is no ooze of blood or displacement of catheter
Ensure umbilical line has two identification labels – Central venous catheter - one of which should be placed close to umbilicus and the other close to the infusion line leading to the UVC.

| Clearly identifies line and reduces risk of infusion error. |
| Fluids infusing through UVC should be prescribed and changed every 24 hours. | Ensures adherence to safe administration of medicines |

March 2013

References:


Record of Insertion of Central Venous Access Device (CVAD)

| Name .................................................. | Date of insertion: Time ......................... |
| Hosp No: SHSCT ...................................... | Date of removal: Time ......................... |
| Or affix patient label |  |

1. Indication for line insertion: ____________________________________________

2. Catheter type used:  
   - Nutriline Pic-Catheter 24G
   - Premicath 28G
   - Umbilical Venous
   - Umbilical Arterial
   - Size  
   - Size

3. Site used (name vein and right or left): ______________________________________________________________________

4. Length of catheter inserted: __________ cm

5. If attempt to site line was unsuccessful, which sties were tried and how often?
   ______________________________________________________________________

6. Doctor/ANNP inserting the line: ____________________________________________
   Please print name
   Grade
   Supervised by (if appropriate): ____________________________________________
   Please print name
   Grade

7. Type of X-ray ordered (include relevant limb): _______________________________________

8. Anatomical position of line tip on X-ray: _______________________________________

9. **Decision about line:**  
   - Position satisfactory, can be used  
   - Line needs repositioned  
   - Remove line  
   Why? ______________________________________________________________________

10. If line was repositioned, describe how, including new length of catheter: _______________________________________

11. Re-X-rayed? Yes ☐ No ☐
   If yes, final position of tip of line on X-ray? _______________________________________

   Doctor making final decision about line position: __________________________
   Please print name
   Grade
   Confirmed by (if appropriate): __________________________
   Please print name
   Grade

Dated: October 2012
# Central / umbilical line Insertion Bundle

<table>
<thead>
<tr>
<th>Care Elements</th>
<th>Hand / Hygiene</th>
<th>Maximum barrier precautions (gown &amp; gloves &amp; large sterile drape)</th>
<th>Sterile field maintained during insertion</th>
<th>Skin Asepsis</th>
<th>Sterile transparent dressing</th>
<th>Please state if cvc or umbilical line</th>
<th>All elements performed</th>
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<td>Observations</td>
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## Maintenance Bundle for CVCs and Umbilical Catheters

<table>
<thead>
<tr>
<th>Observations</th>
<th>Hand / Hygiene Sterile gloves and ANTT for manipulation</th>
<th>Dressing intact (not damp, loosened or soiled)</th>
<th>Hub decontaminated with Clinell wipe</th>
<th>Lipids discontinued if .50% feeds</th>
<th>Need for line assessed today</th>
<th>Please state if cvc or umbilical line</th>
<th>All elements performed</th>
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Total number of Times individual Element performed

% when element of care was given
Maintenance Bundle for CVCs and Umbilical Catheters instructions

1. This form provides 10 observations of care elements and should be completed on a daily basis when there is an infant with a CVC or umbilical line in your unit.
2. The form should preferably be completed after Intravenous fluids have been changed for the day.
3. One observation should be completed daily for each infant with a CVC or umbilical line in situ.
4. Insert a ‘✓’ or an ‘X’ for each care element in the box, relevant to whether the care element was successfully completed or not. Further details of care elements are given below. Any box left blank will subsequently be recorded as an ‘X’ therefore please make sure to complete all boxes.

Care Elements

**Care element 1: Hand Hygiene, Sterile gloves for manipulation**
Was hand hygiene properly performed (7 step technique), sterile gloves worn and aseptic non-touch technique ‘ANTT’ used for all CVC/UVC manipulations in previous 24 hours to your knowledge? (Hand hygiene and ANTT) will suffice for UAC due to lack of evidence for use of sterile gloves.

**Care element 2: Dressing intact, (not damp, loosened or soiled)**
Is the sterile transparent dressing covering CVC intact? If sterile transparent dressing is used to cover UVC/UAC, is this intact? Record ‘N/A’ UVC/UAC if appropriate

**Care element 3. Hub decontaminated with alcohol swab**
Has the catheter hub been decontaminated with Clinell wipe before and after accessing the system?

**Care element 4: lipids discontinued if > 50% oral feeds**
Has lipofundin been discontinued if infant has achieved > 50% oral feeds?

**Care element 5: Need for line assessed today**
Has the need for CVC, UVC or UAC been assessed today on ward round? Record ‘X’ if this has not been discussed or documented.