PATIENT CARE PLAN FOR CARE OF TOTALLY IMPLANTED VENOUS ACCESS DEVICE (TIVAD)

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

Patient addressograph label / patient name

REASON FOR INSERTION...

DEVICE TYPE...

DATE OF INSERTION...

For further information: Clinical Interventions Team 0151-334-1155 Ext 5737 bleep 4095
### Care and Management of Totally Implanted Venous Access Device (TIVAD) e.g. Port-a-Cath (TIVAD 1)

0.9% Sodium Chloride for injection flush and 5 ml Heparin 10 units/ml in 0.9% Sodium Chloride for injection if Port is being accessed weekly. When a TIVAD is not being accessed regularly a routine flush using 0.9% Sodium Chloride and 5ml Heparin 100 units/ml needs to be completed monthly. Tip verification should be confirmed and documented in the medical notes prior to being used for chemotherapy if placed elsewhere.

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equipment Required</strong></td>
<td></td>
</tr>
<tr>
<td>Dressing Pack containing sterile towel and gloves</td>
<td></td>
</tr>
<tr>
<td>Gauze swabs x 3, 10ml syringes x 2</td>
<td></td>
</tr>
<tr>
<td>Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol swab or Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated applicator</td>
<td></td>
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<tr>
<td>Sterile 10ml 0.9% pre filled Sodium Chloride for injection posiflush syringe</td>
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<tr>
<td>5ml Hepsal 100 units/ml in 0.9% Sodium Chloride for injection for monthly lock or Hepsal 10 units/ml for weekly lock.</td>
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<tr>
<td>Blunt filter drawing up needle. Sharps container</td>
<td></td>
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<tr>
<td>, Alcohol hand rub</td>
<td></td>
</tr>
<tr>
<td>Non coring needle (e.g. Huber or gripper needle) with needle free system</td>
<td></td>
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<tr>
<td>Highly permeable dressing/securing dressing if receiving therapy other than for flushing</td>
<td></td>
</tr>
<tr>
<td>Plastic apron and pair of non sterile gloves</td>
<td></td>
</tr>
</tbody>
</table>

- Explain procedure to the patient. Ensure that valid consent is gained.  
- Assess the need for cryogenic spray or topical local anaesthetic cream prior to assessing device ensuring that only the septum of the port is covered if being accessed prior to chemotherapy  
- Prior to patient contact decontaminate hands using soap and water and don an apron and non sterile gloves.  
- Remove anaesthetic cream if used, locate septum of TIVAD by palpation, remove gloves  
- Maintain aseptic technique at all times  
- Ensure that the working area is as clean as possible.  

Ensures patient compliance and reduces anxiety  
Reduce the risk of infection, to avoid contamination  
To maintain asepsis
Ensure that all equipment is gathered before commencing the procedure and all packaging is intact and in date.
- Open sterile pack allowing the 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 the sterile field.
- Place pre filled saline syringe and identified Hepsal ampoule(s) near to the working area but not on the sterile field. Open Chlorhexidine impregnated applicator.
- Decontaminate hands
- Put on sterile gloves connect the blunt drawing up filter needle to the syringe
- With a piece of sterile gauze pick up the Hepsal ampoules and draw up dispose directly into the sharps container. Place the filled syringe on the sterile field.
- Prime the non-coring needle device including its tubing with 0.9% Sodium Chloride and clamp extension tube, remove syringe.
- Place dressing towel as near as possible to TIVAD site
- Clean the skin covering the TIVAD with Chlorhexidine Gluconate 2% in 70% Isopropyl impregnated applicator. Allow to dry
- Remove needle cover from non-coring needle device. Insert the non-coring needle at 90-degree angle through the skin into the septum of the TIVAD until the needle comes into contact with the metal backing while securing the device with gloved hand.
- Needle free device must be cleaned prior to reattaching syringe – thoroughly clean the hub of the needle free system with 2% Chlorhexidine impregnated wipe, rubbing the top of the needle free connector to the sides. This should be done several times over a period of 30 seconds. Allow to dry.
- Attach pre filled saline syringe, aspirate enough blood to blush the solution and inject the flush using a push pause action clamping as the last ml of the solution is instilled into the catheter. Remove the syringe and discard.
- If there is no flash back of blood or if there is swelling around the TIVAD site assess for correct needle placement, remove the needle and re-access.

To prevent the device moving when inserting the Huber needle
Following successful saline flush, repeat the flushing procedure using the Hepsal if required.
If TIVAD was accessed for flushing purposes only, remove the needle and apply pressure over puncture site for a few minutes until bleeding stops.
If the needle is to remain in situ ensure the needle is secured using appropriate highly permeable dressing.
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 and electronically if needed.

**Totally Implanted Venous Access Device (TIVAD) e.g. Port-a-Cath Blood sampling (TIVAD2)**

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equipment Required</strong></td>
<td><strong>Dressing Pack containing sterile towel and gloves</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Gauze swabs x 3, 10ml syringes x 4,</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol swab or Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated applicator</strong></td>
</tr>
<tr>
<td></td>
<td><strong>10ml 0.9% Sodium Chloride for injection or pre filled syringe</strong></td>
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<tr>
<td></td>
<td><strong>5ml of the identified Hepsal dose</strong></td>
</tr>
<tr>
<td></td>
<td><strong>1 Blunt filtered drawing up needle. Sharps container</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Alcohol hand rub</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Non coring needle (e.g. Huber or gripper needle) with needle free system</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Plastic apron and non sterile gloves</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Semi-permeable transparent IV dressing and securing device if receiving therapy other than for flushing</strong></td>
</tr>
</tbody>
</table>
- Explain procedure to the patient. Ensure that valid consent is gained.
- Assess the need for cryogesic spray or anaesthetic cream.
- Prior contact with patient decontaminate hands using soap and water and don an apron and non sterile gloves
- Remove local anaesthetic cream if required and locate septum of TIVAD by palpation, remove gloves
- Maintain aseptic technique at all times
- Ensure that the working area is as clean as possible.
- Ensure that all equipment is gathered before commencing the procedure and all packaging is intact and in date.
- Open sterile pack allowing the 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 the sterile field.
- Place 0.9% sodium chloride (saline) and Heparin 100units/ml in 0.9% Sodium Chloride ampoule(s) near to the working area but not on the sterile field. Open chlorhexidine impregnated applicator.
- Decontaminate hands.
- Put on sterile gloves connect the needle / filter straw to the syringe
- With a piece of sterile gauze pick up the 0.9% sodium chloride ampoule, draw up 10ml. Repeat for Heparinised saline. If a needle is used dispose directly into the sharps container. Place the filled syringes on the sterile field.
- Prime the non-coring needle device including its tubing with saline and clamp extension tube, remove syringe.
- Decontaminate hands and put on new sterile gloves.
- Place dressing towel as near as possible to TIVAD site.
- Clean the skin covering the TIVAD with Chlorhexidine Gluconate  2% in 70% Isopropyl alcohol impregnated applicator
- Allow to dry
- Remove needle cover from non-coring needle device. Insert the non-coring needle at 90-

Ensures patient compliance and reduces anxiety
Reduce the risk of infection, to avoid contamination
To maintain asepsis
degree angle through the skin into the septum of the TIVAD until the needle comes into contact with the metal backing while securing the device with a gloved hand.

- Needle free device must be cleaned prior to reattaching syringe – thoroughly clean the hub of the needle free system with 2% Chlorhexidine impregnated wipe, rubbing the top of the needle free connector to the sides. This should be done several times over a period of 30 seconds. Allow to dry.
- Attach empty 10ml syringe unclamp and aspirate 5-10mls of blood. Clamp catheter and remove the syringe and discard the sample. If unable to obtain blood flush the catheter as directed below. Using a second syringe, take amount of blood required for analysis then flush the port as directed below.
- Attach syringe with 0.9% Sodium Chloride (saline) and inject the flush using a push pause action camping as the last ml of the solution is instilled into the catheter. Remove the syringe and discard.
- If there is swelling around the TIVAD site assess for correct needle placement, remove the needle and re-access
- Following successful saline flush, repeat the flushing procedure using the Heparinised saline.
- If TIVAD was accessed for maintenance flushing purposes only remove the needle and apply pressure over puncture site for a few minutes until bleeding stops.
- If the needle is to remain in situ ensure the needle is secured using securing tapes and appropriate highly permeable dressing.
- 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

To prevent the device moving when inserting Huber needle
### Totally Implanted Venous Access Device (TIVAD) e.g. Port-a-Cath Administration of antibiotics/infusion/additives (TIVAD3)

<table>
<thead>
<tr>
<th>Action</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equipment Required</strong></td>
<td></td>
</tr>
<tr>
<td>Dressing Pack containing sterile towel and gloves x2</td>
<td></td>
</tr>
<tr>
<td>Gauze swabs x 3, 10ml syringes x 2</td>
<td></td>
</tr>
<tr>
<td>Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol swab or Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated applicator</td>
<td></td>
</tr>
<tr>
<td>10ml 0.9% Sodium Chloride for injection</td>
<td></td>
</tr>
<tr>
<td>5ml Heparin 100units/ml in 0.9% Sodium Chloride for injection.</td>
<td></td>
</tr>
<tr>
<td>Two green needles/filter straw. Sharps container</td>
<td></td>
</tr>
<tr>
<td>Surgical tape, Alcohol hand rub</td>
<td></td>
</tr>
<tr>
<td>Non coring needle (e.g. Huber or gripper needle) with needle free system</td>
<td></td>
</tr>
<tr>
<td>Highly permeable dressing and securing device if receiving therapy other than for flushing</td>
<td></td>
</tr>
<tr>
<td>Plastic apron</td>
<td></td>
</tr>
<tr>
<td>Antibiotics/additives/infusion as prescribed</td>
<td></td>
</tr>
</tbody>
</table>

- Explain procedure to the patient. Ensure that valid consent is gained.
- Assess the need for cryogesic spray or local anaesthetic cream ensuring only to the septum is covered if patient is to receive chemotherapy.
- Prior to patient contact decontaminate hand using soap and water and don an apron. Maintain aseptic technique at all times.
- Ensure that the working area is as clean as possible.
- Ensure that all equipment is gathered before commencing the procedure and all packaging is intact and in date.
- Open sterile pack allowing the 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 the sterile field.

Ensures patient compliance and reduces anxiety
Reduce the risk of infection, to avoid contamination
To maintain asepsis
- Place 0.9% Sodium Chloride (saline) and Heparin 100 units/ml in 0.9% Sodium Chloride ampoule(s) near to the working area but not on the sterile field. Open Chlorhexidine impregnated applicator.
- Decontaminate hands
- Put on sterile gloves connect the needle/filter straw to the syringe
- With a piece of sterile gauze pick up the 0.9% Sodium Chloride (saline) ampoule, draw up 10ml. Repeat for Heparinised saline. If a needle is used dispose directly into the sharps container. Place the filled syringes on the sterile field.
- Prime the non-coring needle device including its tubing with 0.9% Sodium Chloride and clamp extension tube, remove syringe.
- Locate septum of TIVAD by palpation, remove gloves.
- Decontaminate hands and put on new pair of sterile gloves.
- Place dressing towel as near as possible to TIVAD site
- Clean the skin covering the TIVAD with Chlorhexidine Gluconate 2% in 70% Isopropyl alcohol impregnated applicator. Allow to dry
- Remove needle cover from non-coring needle device. Insert the non-coring needle at 90-degree angle through the skin into the septum of the TIVAD until the needle comes into contact with the metal backing.
- Needle free device must be cleaned prior to reattaching syringe – thoroughly clean the hub of the needle free system with 2% Chlorhexidine impregnated wipe, rubbing the top of the needle free connector to the sides. This should be done several times over a period of 30 seconds. Allow to dry.
- Attach syringe with 0.9% Sodium Chloride, aspirate enough blood to colour the solution and inject the flush using a push pause action clamping as the last ml of the solution is instilled into the catheter. Remove the syringe and discard.
- If there is no flash back of blood or if there is swelling around the TIVAD site assess for correct needle placement, remove the needle and re-access.
- Following successful 0.9% Sodium Chloride for injection flush, administer antibiotics/infusion/additives as prescribed following local Trust Policy
- Flush the catheter again with the appropriate volume of 0.9% Sodium Chloride for
injection, using a push/pause action, clamping as the last ml of the solution is instilled into the catheter

- Repeat the flushing technique using Heparin 100units/ml in 0.9% Sodium Chloride if indicated, using a push/pause action, clamping as the last ml of the solution is instilled into the catheter.
- If the needle is to remain in situ ensure the needle is secured using appropriate highly permeable dressing.
- 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 and electronically

<table>
<thead>
<tr>
<th>Type of device</th>
<th>Risks</th>
<th>Actions</th>
<th>Variations / Comments</th>
<th>SIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totally implanted venous access device (port-a-cath)</td>
<td>Infection</td>
<td>Site clean and non tender.</td>
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<td>Check at each visit if in community setting</td>
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<tr>
<td></td>
<td></td>
<td>Observe patient for signs of line infection (pyrexia/raised WCC)</td>
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<td></td>
<td>If clinically unstable and patient has had rigors, take blood cultures from line after an independent venous cultures</td>
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<tr>
<td></td>
<td></td>
<td>Assess medical condition prior to removal of line, needs to be performed in hospital setting where ports are placed.</td>
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<tr>
<td></td>
<td></td>
<td>Send line tip for culture and sensitivity following removal only if line infection suspected.</td>
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<td>Ensure administration lines in place following local policy.</td>
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<tr>
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<td></td>
<td>Replace any administration lines up to a max of 96hrs if constituted in ward environment.</td>
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<td>Label infusion lines with date for renewal.</td>
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</tr>
<tr>
<td>Issue Date: 29th June 2015</td>
<td>Page: Page 10 of 14</td>
<td>Filename: FNUAIMPDE</td>
<td>Issue No: 3.0</td>
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<tr>
<td>Author: Carol McCormick</td>
<td>Authorised by: Helen Ferns</td>
<td>Copy No:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **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**
- **Air embolus**
  - Use Needle-free systems
  - Ensure air dispelled from medication/flushes/infusates prior to administration.
  - Assess need for infusion pump
- **Occlusion of lumen.**
  - Maintain patency via 0.9% Sodium chloride for injection flushes as per guidelines, Pre & post drug/infusion administration. Use heparinised saline as indicated
  - Ensure compatibility of drugs/infusates to avoid precipitation.
  - Ensure monthly flushes when not in use. Use needle-free system according to CINS guidelines using positive pressure flush when flushing
- **Bleeding from site / line itself.**
  - Observe for signs of bleeding from site.
  - Apply pressure above dressing
  - Ensure add on devices/taps securely fastened.
  - Ensure clotting studies in acceptable range prior to removal of line.
- **Line displacement/flipping**
  - 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
  - Anchor lines to avoid accidental displacement of Huber needle using secure dressings.
<table>
<thead>
<tr>
<th>• If in doubt do not use line and ensure patient is aware of problems which may occur.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line in situ when no longer required.</td>
</tr>
</tbody>
</table>
Algorithm persistent withdrawal occlusion

Blood return is absent
Check equipment, Position, clamps, kinking, etc
Flush central venous catheter with 0.9% Sodium chloride in 10ml syringe using a brisk “push pause” technique. Check for flashback of blood
Blood return is still absent
Proceed if ha as long as there are no other complications or pain
Exclusion
Dormant line
If unable to aspirate. Do not continue. Refer to Medic close line and label
Consider
Blood return obtained - use central venous catheter as usual

Blood return is still absent
Patient to receive highly irritant/vesicant drugs or chemotherapy

No
Yes

SECONDARY CARE ONLY
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 will probably not 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.
It may be necessary to verify tip location by chest X Ray.
OR
Step 2
Instill Urokinase 10,000iu in 3.5mls using the Push-Lock method and leave for 30 minutes. After this time withdraw the Urokinase and assess the catheter again.
Repeat as necessary.
If blood return is still absent, it may be necessary to verify tip location by chest X Ray.

Adapted from Standards for InfusionTherapy RCN (2010)
The Push–Lock Method: Reconstitute a 10,000IU vial of Urokinase using 3.5ml of 0.9% sodium chloride for each lumen.

- Lock each lumen with priming volume of 2ml + 0.5ml overfill, i.e., 2.5ml
- Push 0.5ml solution/lumen
- Push 0.5ml solution/lumen
- Aspirate lumen

0 min
10 min
20 min
30 min
References


