Purpose

Procedure for changing the needleless connector (cap) on peripheral and central venous lines without administration set change.

Policy Statements

The one-piece needleless connector or cap is changed:

- With each administration IV tubing set replacement (refer to Administration Set Priming and Loading and Initiating or Changing the Infusion Set - Policy and Procedure)
- At minimum every 96 hours (4 days)
- If the needleless connector is removed from the line for any reason
- Immediately upon suspected contamination, or when the integrity of the connector has been compromised
- If there is blood or debris within the connector
- Post infusion of blood products through the needleless connector
- Q24hr with TPN and certain medications/infusions

Aseptic technique is an integral component of all vascular access-related procedures.

The needleless connector must be disinfected prior to each access.

Masks are used when removing the needleless connector from a central venous line.

Site Applicability

All BC Children’s Hospital patient care areas where infusion therapy is managed.

Practice Level/Competencies

Changing the needleless connector on a PIV is a foundational level nursing competency. Central line care, including changing the needleless connector for a CVL is considered a foundational nursing skill and is practiced once the nurse has:

- Attended the Vascular Access Workshop,
- Practiced the procedure in the lab setting,
- Performs at least 3 needleless connector changes for a CVL on patients under supervision of a CVL competent RN, and has completed the CVL validation tool

Definitions

Central Venous Line (CVL): Any venous catheter with the distal tip dwelling in central circulation. Best practice standards – distal tip dwelling in the lower one third of the superior vena cava (SVC) to the junction of the SVC and right atrium.

Aseptic no-touch technique (ANTT): a standardized technique that is used during clinical procedures to identify and prevent microbial contamination of aseptic key parts and key sites by ensuring that they are not touched either directly or indirectly. A ‘key part’ is the part of the equipment that must remain sterile and must only contact other key parts or key sites. Or it is the area on the patient such as a wound, or IV insertion site that must be protected from microorganisms. Aseptic key parts can only contact other aseptic key parts/sites. If it is necessary to touch key parts/sites, sterile gloves are to be worn to ensure asepsis is maintained.

Equipment

- Mask
- Surface disinfectant wipe
- 2% chlorhexidine in 70% alcohol swabs x 3 (x6 if double lumen CVL)
Needleless connector 1 per lumen. Neutron Caps are used for all central lines (PICCs, CVCs, Ports, MedComps, Powerlines, Short term CVCs etc.) and Microclave Clear caps are used for all peripheral lines and syringe medication lines.

Neutron Cap

Microclave Clear Cap

### Procedure

<table>
<thead>
<tr>
<th>Steps</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>DON MASK</strong> and <strong>CLEAN</strong> working surface with disinfectant wipe and allow appropriate dry time.</td>
<td>Routine Infection Control Practices; reduces transmission of microorganisms. Mask required as changing the cap opens the “closed system” of IV catheter.</td>
</tr>
<tr>
<td>2. <strong>PERFORM</strong> hand hygiene, full one minute hand wash for CVL care. Aseptically <strong>PREPARE</strong> equipment on clean work surface.</td>
<td>Routine Infection Control Practices; reduces transmission of microorganisms. Work surface is clean, not sterile, important to keep sterile equipment sterile to reduce transmission of microorganisms.</td>
</tr>
<tr>
<td>3. <strong>IDENTIFY</strong> patient and <strong>EXPLAIN</strong> procedure.</td>
<td>Ensures identification mechanism is present to prevent treatments, medications, and procedures to wrong patient.</td>
</tr>
<tr>
<td>4. <strong>ENSURE</strong> there is a needleless connector attached to the end of the vascular access line. If IV therapy infusing, <strong>CLAMP</strong> catheter and <strong>STOP</strong> IV infusion.</td>
<td>IV lines will be disconnected with old needless connector. Stopping the infusion will ensure no freeflow of fluid onto patient, floor, workspace etc.</td>
</tr>
<tr>
<td>5. <strong>PERFORM</strong> hand hygiene and <strong>DON</strong> non-sterile gloves.</td>
<td>May use Microsan. Protect self from exposure to patient’s blood and harmful drugs/ fluids.</td>
</tr>
<tr>
<td>6. <strong>WRAP</strong> first chlorhexidine/alcohol swab around connection between connector and catheter hub and <strong>SCRUB</strong> for 30 seconds.</td>
<td>Aseptic technique for accessing vascular access reduces transmission of microorganisms.</td>
</tr>
</tbody>
</table>

With second swab, **WIPE** up the line toward the patient including clamp. **DISCARD** all swabs.
7. **REMOVE** existing cap without touching hub of catheter and **DISCARD**.

8. **QUICKLY ATTACH** new cap ensuring a secure luer lock connection.  
   *Done quickly in order to reduce duration of “open system” in effort to reduce transmission of microorganisms. Ensures safe connection.*

9. **SALINE LOCK** or **HEPARIN LOCK** vascular access line if not immediately connecting to new set of IV lines for IV therapy. Refer to Changing the Infusion set Policy and Procedure or Heparin Locking Central Venous Lines policy and procedure.

10. **DISCARD** used supplies and **PERFORM** hand hygiene.  
    *Routine Infection Control Practices.*

### Documentation

**DOCUMENT** on appropriate record(s) (i.e. Central Venous Line Flowsheet for all routine procedures)
- Date and time needleless connector changed

### References


Version History

<table>
<thead>
<tr>
<th>DATE</th>
<th>DOCUMENT NUMBER and TITLE</th>
<th>ACTION TAKEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>03-Oct-2018</td>
<td>CV.01.07 Changing The Needleless Connector (Cap) On Vascular Access Lines (Peripheral Or Central)</td>
<td>Approved at: BCCH Best Practice Committee</td>
</tr>
</tbody>
</table>

Disclaimer

This document is intended for use within BC Children’s and BC Women’s Hospitals only. Any other use or reliance is at your sole risk. The content does not constitute and is not in substitution of professional medical advice. Provincial Health Services Authority (PHSA) assumes no liability arising from use or reliance on this document. This document is protected by copyright and may only be reprinted in whole or in part with the prior written approval of PHSA.