This SOP applies to all staff employed by NHS Greater Glasgow & Clyde and locum staff on fixed term contracts.

**SOP Objective**

To ensure the safe insertion and maintenance of Peripheral Venous Catheters (PVCs) in adults within in-patient areas.

This SOP provides succinct information on the insertion, maintenance and good practice points of these invasive devices and is underpinned by the NHSGGC Vascular Access Policy.

**Document Control Summary**

<table>
<thead>
<tr>
<th>Approved by and date</th>
<th>Board Infection Control Committee 19 May 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Publication</td>
<td>26 May 2014</td>
</tr>
<tr>
<td>Developed by</td>
<td>Infection Prevention and Control Team, Practice Development and Interventional Radiology</td>
</tr>
<tr>
<td>Related Documents</td>
<td>Standard Infection Control Precautions (SICPs) - (HPS National IPC Policy) Preventing infection when inserting and maintaining a PVC (Health Protection Scotland 2012) NHSGGC Administration of Intravenous Medicines Policy (Acute Adult)</td>
</tr>
<tr>
<td>Implications of Race Equality and other diversity duties for this document</td>
<td>This policy must be implemented fairly and without prejudice whether on the grounds of ethnicity, gender, sexual orientation, religion, belief, disability or age.</td>
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<tr>
<td>Lead Manager</td>
<td>Board Infection Control Manager</td>
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<tr>
<td>Responsible Director</td>
<td>Board Medical Director</td>
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The most up-to-date version of this policy can be viewed at the following website: [www.nhsggc.org.uk/infectionpreventionandcontrol](http://www.nhsggc.org.uk/infectionpreventionandcontrol)
PVC Care Bundle

A care bundle is a group of evidence-based interventions when implemented together result in better outcomes than when implemented individually. The science supporting each bundle component is sufficiently established to be considered the standard of care.

The bundle is not intended to be a comprehensive list of all elements of care related to PVC’s; rather the bundle approach to a small group of interventions.

Compliance with the bundle is measured by adherence to all elements of the bundle. If all elements have been accomplished, or if an element is documented as medically contraindicated, the bundle is counted as complete for that patient.

The approach has been most successful when all elements are executed together, an “all-or-none” strategy. If any of the elements are absent, this is deemed non-compliance.

NHSGGC Peripheral Venous Catheter Insertion and Maintenance Care Plan

Every Peripheral Venous Catheter must have supporting documentation to evidence that the correct insertion technique and correct interventions are fully maintained for each patient.

The PVC must be checked at least once per day and the care plan must be fully completed to ensure optimal practice to avoid patient harm.

If the PVC is inserted outwith the in-patient ward area, e.g. Emergency Department or Operating Theatre, it is the responsibility of the ward nursing staff to commence the care plan as soon as the patient is admitted to the area. If nursing staff are unable to state that the PVC insertion bundle elements have been met then ‘Not Applicable’ should be recorded.

The care plan is based on the Health Protection Scotland (HPS) PVC bundle and will support optimal care for adults with a PVC within in-patient areas.

Cont/ ...
**Peripheral Venous Catheter (PVC) Insertion and Maintenance in Adult In-Patients**

**Exception**

Patients receiving chemotherapy at the Beatson West of Scotland Cancer Centre will continue to have the existing Adult PVC Chart (MIS 247232) used to monitor and document the PVC at least 4-6 hourly and when clinically indicated.

**Use of PVC Top Port**

The PVC top port should only be utilised within theatre, critical care environments and in emergency situations. If the PVC has been newly inserted by the clinician then the top port is sterile and hence can be utilised to deliver time critical medications. However the clinician accessing an existing PVC must make a clinical assessment of the patency and viability of the device to allow delivery of medication or fluid. The PVC top port cannot be adequately decontaminated due to the design of the device and hence the clinician has to make a clinical judgement that the risk of re-cannulation for that patient may exceed the risk of injecting through a potentially contaminated top access port.

If a patient has a PVC in situ which has visible signs of contamination evident on the device or dressing, e.g. blood / body fluids or other organic matter, then removal of the PVC and re-cannulation should be considered.

Cannulation can be an uncomfortable experience for patients and the balance of person centre care must be assessed in conjunction with the requirement for safe and effective venous access.

**Bundle elements:**

**Inserting a PVC**

1. Ensure that a PVC is clinically indicated for this patient.
2. Hand hygiene has been performed immediately before PVC insertion procedure.
3. Skin is cleansed with an antiseptic containing Chlorhexidine 2% in 70% Isopropyl alcohol and left to dry before insertion.
4. Aseptic technique is maintained throughout the insertion procedure, i.e. critical parts are not touched.
5. The catheter site is covered with a sterile transparent semi-permeable dressing.

The most up-to-date version of this policy can be viewed at the following website:

www.nhsggc.org.uk/infectionpreventionandcontrol
# Peripheral Venous Catheter (PVC) Insertion and Maintenance in Adult In-Patients

**Effective from May 2014**

**Review date May 2017**

<table>
<thead>
<tr>
<th>Bundle elements: Maintaining an inserted PVC</th>
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<tbody>
<tr>
<td>1. The clinical need for the PVC has been reviewed and recorded today.</td>
</tr>
<tr>
<td>2. Medical staff have reviewed the need for intravenous therapy including antibiotics, and switched to oral if possible today.</td>
</tr>
<tr>
<td>3. The PVC site has been assessed. PVC has been removed if there are signs of inflammation or phlebitis at the site, and has been considered if in longer than 72 hours.</td>
</tr>
<tr>
<td>4. The PVC dressing is intact.</td>
</tr>
<tr>
<td>5. The access hub has been cleaned* with an antiseptic containing Chlorhexidine 2% in 70% Isopropyl alcohol before accessing (“scrub the hub”).</td>
</tr>
</tbody>
</table>

* NHSGGC Administration of Intravenous Medicines Policy (Acute Adult) advocates 30 seconds.

## Practice points

Documenting date and time of catheter insertion is an important step to achieve timely line removal.

The use of personal protective equipment (PPE) including gloves is important in all procedures where blood and body fluid risk exists.

The featured recommendation on hand hygiene does not detract from other times when hand hygiene is recommended and will be monitored against (namely the 5 Moments for Hand Hygiene).

The featured recommendations do not aim to cover emergency situations which require clinical judgement for patient care actions.

A patient information leaflet containing written guidance on why the line has been inserted and what possible complications to be aware of should be given to the patient as soon as possible after insertion (unless clinically contraindicated).

If the PVC is for long-term therapy, i.e. 7-14 days, consider whether the insertion of a midline, Peripherally Inserted Central Catheter (PICC) or Central Venous Catheter (CVC) would be more appropriate.

The most up-to-date version of this policy can be viewed at the following website: [www.nhsggc.org.uk/infectionpreventionandcontrol](http://www.nhsggc.org.uk/infectionpreventionandcontrol)
Repeated unsuccessful attempts at cannulation can be distressing for the patient and increases the risk of infection. After two unsuccessful attempts junior doctors should, if clinically appropriate, take a break before undertaking any further attempt and should consider discussing this with a senior colleague.

Removal of the PVC should be documented in the PVC Care Plan. PVCs should be removed by a competent practitioner if visual infusion phlebitis (VIP) score is ≥2 unless a medical practitioner has identified this PVC as one that is critical and therefore should not be removed unless discussed with senior medical staff, i.e. middle grade and above. The responsibility for communicating this exception is the senior medic.

A needlefree connector, with or without extension, must be attached to the cannula after insertion.

Access should be via the needlefree connector not the port at the top of the device. Before accessing this you should “scrub the hub” for at least 15 seconds** with Chlorhexidine 2% in 70% Isopropyl alcohol wipe.

** NHSGGC Administration of Intravenous Medicines Policy (Acute Adult) advocates 30 seconds.

If a “giving” set is used, a closed circuit system should be maintained at all times (avoiding unnecessary disconnection). The needlefree connector should be changed when a new PVC is inserted.
The most up-to-date version of this policy can be viewed at the following website:

www.nhsggc.org.uk/infectionpreventionandcontrol
Preventing infection when inserting and maintaining a PVC

Patient who needs a peripheral vascular catheter (PVC)

When inserting a PVC

- a PVC is clinically indicated for this patient
- hand hygiene is performed immediately before all PVC insertion procedures (WHO Moment 2)
- a skin antiseptic containing 70% isopropyl alcohol is used to cleanse skin and left to dry before insertion
- aseptic technique is maintained throughout insertion procedure i.e. “critical parts are not touched”
- a sterile transparent, semipermeable dressing is used to cover the catheter site

When maintaining an inserted PVC and accessing the insertion site and line

- the clinical need for the PVC is reviewed and recorded every day (on a daily basis)
- medical staff review the need for intravenous (IV) therapy including antibiotics on a daily basis - switch to oral if possible
- hand hygiene is performed immediately before accessing the line/site (WHO Moment 2)
- removal of PVCs is considered if in longer than 72 hours
- the PVC site is assessed, removing the PVC where there is phlebitis or inflammation at the site
- PVC dressings are intact
- an antiseptic containing 70% isopropyl alcohol is used to clean the access hub before accessing – rub the access hub for at least 15 seconds (“scrub the hub”)

Practice points

Documenting date and time of catheter insertion is an important step to achieve timely line removal.

The use of personal protective equipment (PPE) including gloves is important in all procedures where blood and body fluid risk exists.

The featured recommendation on hand hygiene does not detract from other times when hand hygiene is recommended and will be monitored against (namely the 5 Moments for Hand Hygiene).

The featured recommendations do not aim to cover emergency situations, which require clinical judgement for patient care actions.

Further information

Click on highlighted text in the box(es) above to link to evidence underpinning each recommendation.

For further information on the background to these recommendations and the literature reviews that informed these please visit http://www.hps.scot.nhs.uk as well as referring to your local teams and policies.


http://www.hps.scot.nhs.uk/haic/ce/evidenceforcarebundles.aspx

The most up-to-date version of this policy can be viewed at the following website:

www.nhsggc.org.uk/infectionpreventionandcontrol