

Peripheral intravenous catheter (PIVC): maintenance

Point of care tool

The procedures described in this fact sheet are only to be performed by competent personnel and trainees supervised by competent personnel, and in conjunction with local procedures.

PIVC review

- Catheter duration and replacement – refer to the [I-CARE PIVC guideline](#) for recommendations.
- PIVC should be reviewed every eight hours and at each access, and those that are no longer clearly needed should be promptly removed.
 - In the case of continuous infusions, clinicians should inspect the site hourly.
 - More frequent assessment is necessary when using solutions or medications with the potential to extravasate.

Assess for:		
<ul style="list-style-type: none"> • Catheter position 	<ul style="list-style-type: none"> • Occlusion/patency 	<ul style="list-style-type: none"> • Dressing intact
<ul style="list-style-type: none"> • Phlebitis: <ul style="list-style-type: none"> ○ Erythema ○ Tenderness ○ Swelling ○ Pain ○ Palpable venous cord ○ Purulent discharge. 	<ul style="list-style-type: none"> • Systemic infection: <ul style="list-style-type: none"> ○ Rigor ○ Fever ○ Tachycardia ○ Hypotension ○ Malaise ○ Nausea/vomiting. 	<ul style="list-style-type: none"> • Infiltration/extravasation*: <ul style="list-style-type: none"> ○ Insertion site: <ul style="list-style-type: none"> - Cool skin temperature - Blanched, taut skin - Oedema - IV fluid leaking - Burning/stinging pain - Redness ○ Change in infusion flow.
<p>*In addition, extravasation may also lead to tissue necrosis, ulceration and blistering.</p>		

Dressing and catheter fixation

- Poor PIVC securement has been observed to increase risk of phlebitis, infection, occlusion, infiltration and dislodgement.
 - Using a short extension set attached to the catheter can reduce complications associated with catheter movement.
- Dressing: sterile, transparent, semi-permeable, self-adhesive, (standard or hyperpermeable) polyurethane dressing:
 - Protects site from extrinsic contamination.
 - Allows continuous observation of the insertion site.
 - Helps stabilise and secure the catheter – can be used in conjunction with sterile tape.
 - Replacement:

- If following clinically indicated cannula replacement procedure, replace dressing every seven days or if the dressing becomes damp, loosened, no longer occlusive or adherent, soiled, or if there is excessive accumulation of fluid under the dressing.
- Utilise aseptic technique including sterile dressing change pack.
- Remove blood or ooze from catheter insertion site with sterile 0.9% sodium chloride.
- Skin preparation as per insertion (2% alcoholic chlorhexidine, or 10% povidone iodine with 70% alcohol).

Accessing the PIVC

- Hand hygiene and appropriate PPE.
- All intravenous access ports should be meticulously cleaned with a single-use 70% alcohol-impregnated swab vigorously for a minimum of 15 seconds and allowed to dry prior to accessing the system.
- Access with a sterile single-use device.

Replacement of IV fluids

Fluid	Replacement interval
Standard (crystalloid) and non-lipid parenteral solutions	Every 24 hours
Lipid-containing solutions	Within 24 hours
Lipid emulsions	Within 12 hours
All blood components (excluding factor VIII or IX for continuous infusion)	Within 4 hours
Drug infusions (e.g. heparin, insulin)	Every 24 hours

Administration set changes

Administration set	Replacement interval
Not containing lipids, blood or blood products	Up to 96 hours*
Lipid/lipid-containing parenteral nutrition	Within 24 hours*
Chemotherapeutic agents	Remove immediately after use*
Propofol	Within 12 hours or as per manufacturer*
Heparin	Every 24 hours*
Other infusions (not including blood products)	When disconnected or new catheter*

*All administration sets should be replaced when disconnected or if the catheter is changed.

- Administration sets should not be intermittently disconnected (including for patient toileting/showering).
- If administration sets are disconnected from the intravascular device, the set should be discarded and a new administration set connected using aseptic technique and observing standard precautions.

For more information and references refer to the full I-Care peripheral intravenous catheter guideline available from: <https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/infection-prevention/intravascular-device-management/default.asp>