Purpose:

Peripheral Intravenous cannula’s (PIVCs) are a cause of significant discomfort for patients and put them at risk for local and systemic complications. They also pose a small but real risk to the healthcare professional because of occupational exposure to blood borne disease. The decision to insert or maintain a PIVC must only be where there is justifiable need and/or significant chance of benefit.

This policy describes groups of mandatory actions (bundles) for the insertion and ongoing care of PIVC used in the clinical care of all patients – excluding neonates.

Scope:

The scope of this policy is organisational wide and refers to all health care professionals. For the purposes of this policy, ‘health care professional’ is taken to include anyone responsible for the insertion and ongoing care of a peripheral intravenous (IV) cannula.

This may include but is not limited to:

- all registered medical, nursing and midwifery staff
- technicians, enrolled nurses and students

This policy does not apply to the insertion or ongoing care of PIVC in neonates.

Definitions – see peripheral intravenous cannulation information package for relevant equipment related ‘points to practice’.

Aseptic non touch technique (ANTT)

ANTT is a standardised 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.

Care bundle

A set of evidence-based actions that when used together, significantly improve patient outcomes. Regular auditing of care bundles (for PIVC insertion and ongoing care) is a way of reviewing how expected practice is implemented and continuous improvement cycles (IHI, 2012).
Peripheral intravenous catheter
Three types of peripheral intravenous catheters are commonly used: short peripheral, midline, and midclavicular. Midlines and mid-clavicular peripheral catheters are not classified as central venous catheters as their tips do not reside in either the superior or inferior vena cava or right atrium.

Short peripheral intravenous cannula (PIVC)
Short PIVC are ‘over-the-needle’ catheters, less than 7.5 cm in length, mainly used for short-term access that consist of a needle (stylet) and catheter sheath. After venipuncture, the needle is withdrawn and discarded, leaving a flexible catheter in the vein.

Peripheral intravenous safety cannula
An ‘over-the-needle’ catheter that consists of a needle (stylet) and catheter sheath. Following venipuncture, the needle is retracted or protected by the integrated passive (requiring activation) or active (automatically activated on needle withdrawal) safety mechanism of the device.

Closed IV cannula system
The closed IV cannula system combines 3 separate IV components (the cannula, extension and bung) into one single device. The pre-attached extension tubing self-primes on insertion providing a closed fluid pathway allowing bloodless cannulation.

Policy content and guidelines:
Indications
Training and certification
To ensure health care practitioner competence in the insertion and ongoing care of a PIVC, they must complete the training requirements as outlined for their profession.

- To maintain an appropriate cannulation skill level a minimum of five interventions a month is recommended.
- Until certification is achieved, cannulation is to be directly directed by another certificated health care professional.

Certification process:
- Certification for ongoing care of a PIVC:
  - Completion of the CCDHB/regional generic intravenous and related therapy certification program. For further information please see CCDHB policy - Generic Intravenous and related therapies certification process for registered nurses, enrolled nurses, midwives, technicians, agency nurses/midwives and student nurses/midwives.

- Certification for cannulation:
  - Completion of the CCDHB/regional cannulation certification program.

N.B. Certification in ongoing care must be obtained prior to completing certification in cannulation. For further information please see CCDHB peripheral intravenous cannulation information package.
Clinical indications for PIVC:
- management of fluid balance (hydration)
- management of electrolyte imbalance
- short term administration of intravenous drugs (3-5 days)
- blood component/blood product administration
- procedure requiring vascular access planned within the following 24 hours
- an unstable condition, such as seizures, gastrointestinal bleeding, or a requirement for cardiac monitoring
- venous access in emergency situations.

PIVC are replaced only when clinically indicated. PIVCs must be promptly removed when treatment is completed; patient is drinking adequately or if complications occur e.g. phlebitis, swelling or pain.

Taking blood is not an indication for cannulation and in all cases first consideration should be for the administration of therapy by alternative routes.

PIVC should not routinely be inserted on a ‘just in case’ basis. If PIVC are inserted, remain insitu or are replaced ‘just in case’ they must be authorised by the medical team with the appropriate clinical indications documented in the clinical notes.

Device selection must take in to consideration:

Gauge
Always use the smallest size cannula possible to adequately deliver the desired therapy.
- A smaller cannula will permit a higher blood flow around the cannula thus improving the haemodilution of the therapies, reducing the damaging effect of irritant solutions on the intima of the vein.
- The degree of mechanical irritation and insertion trauma is minimised by the use of a smaller gauge cannula.

For average flow rates and fluid indications by gauge - see table, appendix 2, page 13 - Peripheral intravenous device selection algorithm.

Dwell
The duration of dwell of a PIVC is established by a number of clinical situations. For guidance, please see the practice section of the ongoing PIVC care bundle, page 7.

If a patient requires more than 5 days of IV therapy, consideration should be given to vascular access devices with longer dwell times i.e. a CVC – see appendix 3, page 14 - Vascular access device selection algorithm.

- Obtaining more intermediate access reduces the amount of trauma inflicted on the patient by frequent cannulation.
Therapy
Consideration must also be given to the type of fluid being administered through peripheral catheters. Generally, therapies not appropriate for peripheral catheters include:

- long term therapy
- continuous vesicant chemotherapy
- parenteral nutrition formulae exceeding 10% dextrose and/or 5% protein
- solutions and/or medications with pH less than 5 or greater than 9
- solutions and or medications with osmolarity greater than 600 mOsm/L.

Midlines and mid-clavicular (long lines) peripheral catheters
Midlines and mid-clavicular catheters are subject to the same limitations as short peripheral cannulae with regard to pH, fluid osmolarity and the administration of vesicant medicines. Management of these peripheral catheters is directed in C&C DHB policy and procedures see Central venous catheter (CVC) management – adults (hyperlink).

Patient preparation:

Informed consent
Obtain verbal consent from the patient or guardian where the patient is under 16 years of age. The patient/guardian has the right to refuse treatment. In these situations, full documentation of the reasons should be made. For more information please see CCDHB policy - Informed consent (adults and children).

Safe holding
Safe holding is the positioning of a patient so that a procedure can be carried out in a safe and controlled manner. Safe holding may be initiated to facilitate cannulation, and must be administered appropriately with respect to age, cognitive ability and behaviour or if there is a physical inability to hold position during the procedure. For further information please refer to the restraint minimisation and safe practice policy, and details within the restraint/enabler register for your clinical area.

Pain relief
Anxiety associated with cannulation can be reduced with good communication skills, diversion/distraction and relaxation techniques.

Local anaesthetic agents can be utilised which produce numbness of the skin and have been proven to reduce the pain experienced during cannulation.

- Limit application of topical local anaesthetic agents as excessive use can be harmful
- Children or those cognitively impaired should be supervised when topical agents are applied in case of ingestion.

See peripheral intravenous cannulation information package for further local anaesthetic use information.
Clinical assessment:

Site selection

- The health care professional shall assess specific patient factors such as pre-existing catheters, anatomic deformity, site restrictions (e.g. mastectomy, arteriovenous (AV) fistula or graft), the relative risk of mechanical complications and the risk of infection. For further patient factors that contribute to difficulty in obtaining/maintaining PIV access, see appendix 4, page 13 - venous access assessment score.
- Site selection shall avoid areas of flexion and bony prominences and the lateral surface of the wrist for a 5-10cm radius.
- In adults: site selection shall be routinely initiated in the distal areas of the upper extremities; subsequent catheterisation shall be made proximal to the previously catheterised site.
- In children: site selection can also include veins of the scalp, feet and fingers (avoiding areas used for suckling).

Difficult peripheral venous access

Where peripheral intravenous access is poor and cannulation is difficult, alternative methods of access should be considered. Use of ultrasound, or near infra-red guided access techniques or a referral for assessment by a vascular access professional will limit unnecessary harm and may result in the placement of more intermediate or long term access devices. See Appendix 3, page 15 - Venous access assessment score.

Risks and precautions:

- Unnecessary cannulation must be avoided, as peripheral cannulation is associated with an increased risk of bacteraemia and associated complications.
- Steel needles are only indicated for one off/stat dosing and should not be used routinely for drug administration due to the risk of infiltration/extravasation.
- Peripheral cannula should NOT be used for routine blood sampling. However, if cannulation is necessary, blood can be drawn ONLY ONCE immediately following insertion. Slowly draw blood, as excess force may haemolyse the sample and cause thrombophlebitis of the vein.
- Complications of insertion include: (see Peripheral Intravenous Cannulation Information Package)
  - haematoma
  - arterial puncture
  - introduction of pathogens
  - pain
  - malpositioned cannula
- Complications of ongoing care include: (see Intravenous therapy instructional package for nurses, midwives and technicians)
  - phlebitis
  - infiltration
  - extravasation
  - local infection (entry site)
  - blood stream/systemic infection
Peripheral intravenous cannula - insertion

Equipment – cannula insertion
Peripheral intravenous device set-ups should be selected appropriately for the intended therapy – see appendix 2, page 13 - peripheral intravenous device selection algorithm.

choose 1 device as listed below:

1) Closed IV cannula system with a pre-attached extension set and access bung
2) Straight cannula system with an attachable IV catheter extension set and access bung
3) Straight cannula system with an attachable access bung - this is indicated if the cannula is inserted for short term/single use in which case an access bung could be directly applied to the cannula hub e.g. day procedures, or in emergency situations.

IV Starter Pack (can be substituted for appropriate sterile individual equipment) this includes:
- sterile drape
- 2% chlorhexidine and 70% alcohol swab
- disposable latex free tourniquet
- occlusive, transparent split dressing with securement strips
- gauze swabs
- line label
- label for patients notes (attached to front of pack)

5 or 10ml leuer lock syringe and 5 or 10mls 0.9% sodium chloride ampoule
or a 10 ml pre-filled saline syringe

non-sterile gloves

cleaned working surface i.e. trolley or tray

sharps container for point of care disposal
**PERIPHERAL INTRAVENOUS CANNULA - INSERTION CARE BUNDLE**

<table>
<thead>
<tr>
<th>Category</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hand hygiene</strong></td>
<td>• compliance with the 5 moments of hand hygiene</td>
</tr>
<tr>
<td></td>
<td>• hands decontaminated before clean glove application</td>
</tr>
<tr>
<td><strong>Personal protective equipment</strong></td>
<td>• clean gloves applied immediately prior to insertion</td>
</tr>
<tr>
<td></td>
<td>• plastic apron applied if indicated</td>
</tr>
<tr>
<td><strong>Skin preparation</strong></td>
<td>• 2% chlorhexidine gluconate in 70% isopropyl alcohol is applied and allowed to dry</td>
</tr>
<tr>
<td></td>
<td>• if patient sensitivity, use 10% povidone–iodine</td>
</tr>
<tr>
<td></td>
<td>• if indicated, hair is removed using clippers (not shaven) to improve dressing adherence</td>
</tr>
<tr>
<td><strong>Aseptic technique</strong></td>
<td>• compliance with aseptic non-touch technique</td>
</tr>
<tr>
<td></td>
<td>• a new sterile cannula for all cannulation attempts</td>
</tr>
<tr>
<td></td>
<td>• a single use latex free tourniquet</td>
</tr>
<tr>
<td><strong>Dressing</strong></td>
<td>• a sterile, semi-permeable, transparent dressing is applied allowing observation of insertion site</td>
</tr>
<tr>
<td><strong>Practice</strong></td>
<td>• no more than two attempts at insertion by the same health care professional when alternative clinical support is available</td>
</tr>
<tr>
<td></td>
<td>• fluid administration containers, tubing and connectors must be replaced when a new PIVC is inserted</td>
</tr>
<tr>
<td><strong>Documentation</strong></td>
<td>• date, catheter size, reason for insertion, location and operator undertaking insertion is documented in the appropriate clinical record</td>
</tr>
<tr>
<td></td>
<td>• number of attempts if more than one and any associated complications is documented in the appropriate clinical record</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>• where available and not clinically contraindicated use safety equipped cannulation equipment</td>
</tr>
<tr>
<td></td>
<td>• sharps container for point of care disposal.</td>
</tr>
</tbody>
</table>

For rationale see, [Appendix 1, page 12 - PIVC care instructions with rationale](#).
Peripheral Intravenous cannula - ongoing care

- Flushing is recommended to assess, promote and maintain device patency and prevent the mixing of incompatible medications and solutions.
- The optimal volume to flush catheters used for intermittent injections or infusions is equal to at least twice the volume of the catheter, the extension set (if used), and the needleless access bung.

**Equipment - flushing a PIVC**

- 70% alcohol swab
- 1 x 10ml 0.9% sodium chloride ampoule and 1 x 10ml leur lock syringe
- or a 10 ml pre-filled saline syringe
- non-sterile gloves

**Removal of Peripheral Cannula**

Remove peripheral cannula if:

- access no longer required
- patient has pain when fluids are infused or on flushing
- signs of phlebitis, infection or thrombophlebitis, Visual Infusion Phlebitis Score (VIP) score of 2 or greater, *for VIP score see appendix 5, page 14.*
- signs of swelling or oedema and an absence of blood return.

**Equipment – removal of PIVC**

- non-sterile gloves
- sterile gauze
- microbiology swab if clinically indicated
- adhesive sterile dressing with a small absorbent pad
# Peripheral Intravenous Cannula - Ongoing Care Bundle

## Hand Hygiene
- Compliance with the 5 moments of hand hygiene
- Hands decontaminated before clean glove application

## Personal Protective Equipment
- Clean gloves applied immediately prior to ongoing care activities
- Plastic apron applied if indicated

## Bung/line preparation
- 70% isopropyl alcohol is used and allowed to dry.

## Aseptic technique
- Use an aseptic non-touch technique
- Saline flushing shall be in a pulsatile (push-pause-push) motion
- Saline flush – inject at least 1-5ml of 0.9% sodium chloride into the PIVC as appropriate
- Administration of medicine as per prescription
- Saline flush – inject at least 1-5ml of 0.9% sodium chloride into the PIVC using positive pressure (clamping) technique at completion

## Dressing
- A sterile, semi-permeable, transparent dressing must remain dry and intact or is changed immediately
- If the insertion site is obscured by an opaque dressing, preventing visual inspection, this dressing must be changed

## Practice
- PIVC that are no longer clinically indicated must be removed promptly
- PIVC are left in situ in hospitalised and community care patients for the duration of therapy unless complications occur
- PIVC must be flushed with 0.9% sodium chloride to review patency each shift unless in more frequent use
- PIVC insertion sites must be revealed and inspected each shift, (daily in the community) and every time the cannula is accessed, or infusion rates are altered

## Documentation
- PIVC(s) site location, appearance (using the 0-5 visual infusion phlebitis scale), and on-going care requirements must be recorded daily in the PADP care plan, as available, or in an alternate area specified location e.g. the patient care flow chart
- Any other actions, significant or exceptional findings must be documented in the appropriate clinical record

## Safety
- Use needleless access systems
- Use leur lock connections
- Sharps container for point of care disposal

## Removal
- Dressing is removed gently, use of adhesive remover if skin is fragile
- PIVC is removed slowly and gentle pressure is applied as tolerated for 2-3 mins or until bleeding stops
- Site is assessed and dressing applied
- Integrity of PIVC is checked before disposal in to biohazard bag
- If site appears infected, swab is taken and sent to microbiology for culture and sensitivity
- Site is covered with an adhesive dressing, left in place for 24 hrs
- Date, time and reason for removal is documented in the clinical notes
- A reportable event form is completed if required
Insertion and ongoing care of a peripheral intravenous cannula – excluding neonates

Related documents:
C&C DHB documents:
- Generic Intravenous and related therapies certification process for registered nurses, enrolled nurses, midwives, technicians, agency nurses/midwives and student nurses/midwives

References:
Sample reference list included, for further references please see - peripheral intravenous cannulation information package.


Appendices

Appendix 1: PIVC care instructions with rationale
Appendix 2: Peripheral Intravenous device selection algorithm
Appendix 3: Vascular access device selection algorithm
Appendix 4: Venous access assessment score
Appendix 5: Visual Infusion Phlebitis Score
## Appendix 1: PIVC care instructions with rationale

<table>
<thead>
<tr>
<th>Action/caution</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>When a cannula is initially inserted, an extension set and needle less access bung is also attached.</td>
<td>The extension set reduces the amount of trauma to the insertion site caused by accessing/manipulating the cannula. This helps to reduce the risk of mechanical phlebitis and subsequent increased risk of infection.</td>
</tr>
<tr>
<td>Use of leur lock connections is recommended. If a leur slip connection is used, insert the slip connection into the bung using a firm push and twist clockwise motion.</td>
<td>Leur slip connections must not be left unattended. If left they can come apart or pop off.</td>
</tr>
<tr>
<td>Access bung should be changed immediately if the integrity of the system is compromised or if residual blood remains within the bung. Leur lock access bungs are needle less intravenous access systems.</td>
<td>Use of needles on these systems will cause damage and breach the integrity of the bungs which could cause leakage and/or allow the free passage of air or bacteria. Residual blood in the bung provides a medium for bacterial adherence and growth.</td>
</tr>
<tr>
<td>Accessing a PIVC is an aseptic non-touch procedure.</td>
<td>Minimises the potential to introduce micro-organisms into the PIVC and/or the patient’s bloodstream via the needle less access bung.</td>
</tr>
<tr>
<td>PIVC are flushed with Sodium Chloride 0.9% before and after the administration of medicine/fluids.</td>
<td>This procedure helps prevent catheter occlusion, helps assess patency, acts as a buffer between medicine doses and prolongs catheter patency.</td>
</tr>
<tr>
<td>Flush PIVC every shift with 0.9% sodium chloride if not in more frequent use.</td>
<td>Assesses PIVC function and is part of the monitoring requirements for indwelling PIVC.</td>
</tr>
<tr>
<td>PIVC are flushed using a pulsatile (push-pause or start-stop-start) motion.</td>
<td>Pulsatile flushing creates a turbulent flow within the catheter lumen, effectively removing residue.</td>
</tr>
<tr>
<td>The flush should be started gently, checking for any signs of fluid leakage at the exit site, swelling at the cannula site, or discomfort experienced by the patient.</td>
<td>If the PIVC has become dislodged or complicated, initial gentle flushing will reduce the amount of discomfort experienced by the patient.</td>
</tr>
<tr>
<td>A positive pressure (clamping) technique is used prior to disconnection of the final syringe in an administration sequence, if the device is in intermittent use.</td>
<td>Prevents the negative reflux of blood in to the cannula on syringe disconnection caused by the valve refilling the space occupied by the syringe.</td>
</tr>
<tr>
<td>If a cannula can not be flushed on access using gentle pressure, vigorous attempts and applying excessive force are not recommended. The cannula should be removed and a new catheter inserted if clinically indicated.</td>
<td>PIVC can become occluded secondary to internal lumen thrombus formation – (blood clot in the lumen creating total blockage).</td>
</tr>
<tr>
<td>Saline flush – inject 2-5ml of 0.9% sodium chloride into the PIVC using positive pressure (clamping) technique at completion.</td>
<td>By using a positive pressure technique when completing the flush i.e. applying the clamp to the line while the final 0.5ml of fluid is injected, the risk of occlusion through negative reflux on disconnection is prevented.</td>
</tr>
<tr>
<td>PIVC must be promptly removed if no longer required. Regular medical review should determine if IV access is still indicated or an alternate route is available.</td>
<td>PIVC access has associated risks i.e. infection because of the potential for direct microbial entry to the bloodstream, or other preventable complications.</td>
</tr>
</tbody>
</table>
Appendix 2:
Peripheral Intravenous device selection algorithm

Venous access assessment score 3 or less

Patient Requires Peripheral IV Access

Blood sampling only
• Multi sample needle or butterfly

Stat Dose
• Butterfly

Access < 1 day or procedure only

Access > 1 day

IV Access required for:
• Nausea/vomiting
• Dehydration
• Severe pain
• Intermittent therapy
• Child under 10 years

Yes
Cannula system with extension set and access bung

No
Cannula system with access bung

Patient requires central venous access see vascular access device selection algorithm on next page

Colour | Gauge | Indications | ml/min
--- | --- | --- | ---
Orange | 14G | Adult rapid infusion, trauma or anaesthesia requirements | 330
Grey | 16G | Adult rapid infusion, trauma or anaesthesia requirements | 215-220
Green | 18G | Blood components, anaesthesia, maternity and large fluid requirements | 94-108
Pink | 20G | Fluids up to 2-3 litres per day, regular IV medications, Smallest gauge for adult blood transfusion and CT scanning | 55-64
Blue | 22G | Regular IV medications, maintenance fluids, paediatrics | 56
Yellow | 24G | Paediatrics, neonates, elderly, fragile veins | 24

Insertion and ongoing care of a peripheral intravenous cannula – excluding neonates

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CapitalDoc ID 1.769
Date printed from CapitalDoc: 28/01/2013

Regard printed versions of this document as out of date – The CapitalDoc document is the most current version
Appendix 3: Vascular access device selection algorithm

**Venous access device selection**

- Therapy osmolarity > 600 / pH < 5 OR
  - >9 or known irritant / vesicant OR
  - >5 days required?

  - NO
  - >3 peripheral sites available and <5 days access required?
    - YES
    - Peripheral IV cannula
    - NO
    - Upper extremity available AND <1 year access required?
      - YES
      - PICC
      - NO
      - <6 months access required?
        - YES
        - Implanted port
        - NO
        - <1 months access required?
          - YES
          - Non-tunnelled CVC
          - NO
          - Tunnelled CVC

**PLEASE NOTE:**
If patient is within specialist services of oncology, haematology, or renal please refer to that team before requesting venous access device.

**DEVICE DEFINITIONS**
- **Peripheral IV cannula:** Insertion site and tip in peripheral vein; max dwell 96 hrs in adult and left in situ for duration of therapy for infants/children if no complaints.
- **PICC:** Peripherally inserted central catheter, 55cm long, tip advanced to the superior vena cava (SVC), dwell time up to one year.
- **Non-tunnelled CVC:** <20cm, multiple-lumen CVC, percutaneously placed in the subclavian or internal jugular vein with the tip advanced into the SVC, dwell <1 month.
- **Tunnelled catheter:** Hickman catheter is surgically placed CVC, with either a percutaneous puncture or a cut down incision made to insert the catheter tip into the cephalic, subclavian or jugular vessels and advanced into the SVC, no maximum dwell is no complications.
- **Implanted port:** Totally implanted, surgically placed CVC, with either a percutaneous puncture or a cut down incision made to insert the catheter tip into the subclavian vein and advanced into the SVC, no maximum dwell if no complications.
## Appendix 4: Venous Access Assessment Score

### Venous Access Assessment Score:

*Score 1 point for each box checked*

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sepsis</td>
<td>Osteomyelitis</td>
<td>Endocarditis</td>
<td>Wound infection/cellulitis</td>
</tr>
<tr>
<td>Trauma</td>
<td>Pancreatitis</td>
<td>Bowel disorders</td>
<td>Hyperemesis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Predisposing conditions</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>Steroid dependence</td>
<td>Obesity</td>
<td>Drug abuse</td>
</tr>
<tr>
<td>Coagulopathies</td>
<td>Renal disease</td>
<td>Heart failure</td>
<td>Peripheral vascular disease</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medications</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medications with a pH &lt;5 or &gt;9</td>
<td>Vesicant or irritant medication &gt;2 doses</td>
<td>Infusions with osmolarity &gt;600 mOsm/l</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration of therapy</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5 days or more</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Limited venous access</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age less than 4</td>
<td>Age greater than 70</td>
<td>Only 1 extremity available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diagnostic Testing</th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Daily labs for 6 days or more</td>
<td>Serial CT Scans ordered</td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Venous considerations</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 2 PIV device failures in 24 hours</td>
<td>&gt; 3 IV attempts in 24 hours</td>
<td>&gt; 2 PICCs in past 12 months</td>
<td>Previous chemotherapy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Add totals:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

**Score of 3 or more**

- Patient is a candidate for further clinical assessment see vascular access device selection algorithm
Appendix 5: Visual infusion phlebitis tool (Jackson, 2007)

![Visual infusion phlebitis tool diagram](image-url)