**Topic Expert Group:** Patient safety and hygiene practice

**Vascular access**

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**Target group**

Infants and parents

**User group**

Healthcare professionals, neonatal units, hospitals, and health services

**Statement of standard**

Vascular access is achieved in a competent, skillful and safe manner.

**Rationale**

Intravenous (IV) cannulation is among the most common and widespread medical procedures performed on critically ill infants in the NICU. (1) Treatment frequently depends on the use of peripheral or central vascular access devices (VADs) to administer fluids, nutrients, and medication. (2–4) There are several types of VADs, which are inserted into either a vein or an artery. Factors such as body weight, fluid characteristics, availability of venous access sites, and anticipated length of access needed are taken into account when siting a VAD. The frequency of complications, including infiltration/extravasation, leaking, occlusion, thrombosis, and infections, has remained relatively constant over the past 30 years. (5–15)

**Benefits**

**Short-term benefits**

- Reduced number of skin breaking and painful procedures (16,17)
- Reduced occurrence of complications e.g. infections (18)

**Long-term benefits**

- Reduced late consequences of early exposure to antibiotics (consensus)
- Reduced risk of long-term consequences of painful procedures for infants and parents (19)

**Components of the standard**

<table>
<thead>
<tr>
<th>Component</th>
<th>Grading of evidence</th>
<th>Indicator of meeting the standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>For parents and family</td>
<td></td>
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<tr>
<td>1. Parents are informed by healthcare professionals about the need and procedure for achieving vascular access.</td>
<td>B (High quality)</td>
<td>Patient information sheet</td>
</tr>
<tr>
<td>2. Parents are encouraged and guided to comfort the infant if feasible by</td>
<td>B (High quality)</td>
<td>Patient information sheet</td>
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</tbody>
</table>
For healthcare professionals

3. A unit guideline on the aseptic insertion and maintenance of vascular access devices (VADs) is adhered to by all healthcare professionals. (21)
   - A (High quality)
   - B (High quality)

4. The necessity for ongoing vascular access is identified.
   - B (High quality)

5. The procedure is approached in a developmentally supportive manner using (none)-pharmacological pain relieving treatment. (10,22–26) (see TEG Infant-and family-centred developmental care)
   - A (Moderate quality)
   - B (Moderate quality)

6. Training on the insertion of VADs is attended by all responsible healthcare professionals.
   - B (High quality)

For neonatal unit

7. A unit guideline on the aseptic insertion and maintenance of VADs is available and regularly updated.
   - B (High quality)

For hospital

8. Training on the aseptic insertion of VADs is ensured.
   - B (High quality)

9. Equipment to administer and monitor infusion therapy is suitable for a neonatal population.
   - B (High quality)

For health service

10. A national guideline on the aseptic insertion and maintenance of VADs is available and regularly updated.
    - B (High quality)
Where to go – further development of care

<table>
<thead>
<tr>
<th>Further development</th>
<th>Grading of evidence</th>
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</thead>
<tbody>
<tr>
<td>For parents and family</td>
<td>N/A</td>
</tr>
<tr>
<td>For healthcare professionals</td>
<td>N/A</td>
</tr>
<tr>
<td>For neonatal unit and hospital</td>
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<tr>
<td>• Optimise the use of specially trained vascular access professionals.</td>
<td>A (Low quality)</td>
</tr>
<tr>
<td></td>
<td>B (Moderate quality)</td>
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<tr>
<td>For health service</td>
<td></td>
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<tr>
<td>• Develop a European Vascular Access Certification programme for all healthcare professionals in the field.</td>
<td>B (Moderate quality)</td>
</tr>
</tbody>
</table>

Getting started

Initial steps

For parents and family
- Parents are verbally informed by healthcare professionals about the need and procedure for achieving vascular access.
- If present, parents are invited to support their infant before, during and after the insertion of vascular access devices (VADs).

For healthcare professionals
- Attend training on the aseptic insertion and maintenance of VADs.

For neonatal unit
- Develop and implement a unit guideline on the aseptic insertion and maintenance of VADs.
- Provide a flow chart that guarantees most appropriate Vascular Access Device to meet each infant's current and anticipated needs. (23)
- Provide a vascular visualisation device for vascular assessment and insertion support if required.
- Conduct data collection and compliance monitoring.
- Develop information material for parents on the need and procedure for achieving vascular access. (10,24,25)

For hospital
- Support healthcare professionals to participate in training on peripheral and central venous/arterial access.
- Provide a vascular visualisation device for vascular assessment and insertion support if required.

For health service
- Develop and implement a national guideline on the aseptic insertion and maintenance of VADs including indication for insertion, type of device, access visualisation, and management of access and complications.
Source


First version, November 2018

Lifecycle
5 years/next revision: 2023

Recommended citation