Vascular Access - Emergency Department

**PURPOSE:**
To standardize vascular access and decrease the number of IV attempts.

**Inclusion Criteria:**
Patients who present to the ED in need of vascular access.

**Exclusion Criteria:**
Patients who present to the ED with trauma activation or need ALS team.

Peripheral Intravenous (PIV) Access Needed

**Emergent PIV**
(Patient needs PIV within 30 minutes)

**Notify Attending**
- 2 attempts by two separate experienced team members
- Consider IO access
- Consider using ultrasound (US) guided IV attempts

**Urgent PIV**
(Patient needs PIV within 2 hours)

- Needlestick Pain Prevention**
- Notify Attending if unable to obtain IV access after the below attempts to discuss next steps and IV alternatives

**Difficult**
- 2 attempts- US guided or 1 attempt by team member
- May use special techniques*

**Not Difficult**
- 2 attempts by maximum of 2 team members
- May use special techniques*

**Notify Attending** if unable to obtain IV access after the above attempts to discuss next steps and IV alternatives***

**Special Techniques**
- Hot packs
- Vein viewer
- Transilluminator

**Needlestick Pain Prevention**
- Distraction/child life
- Sucrose
- LMX
- Pain Ease
- Buzzy
- Synera patch

**IV Alternatives**
- IM route for medications
- Oral, NG, GT route for hydration/medications
- Intraosseous line placement

E. Rader
4-1659
Approved by P&T Committee 11/19/19
Vascular Access - Inpatient

**PURPOSE:**
To standardize vascular access and decrease the number of IV attempts.

**Inclusion Criteria:**
Admitted patients who need vascular access.

**Patient needs peripheral IV access**

**EMERGENT**
(Access required within 1 hour)

- Consult MET
- 2 IV attempts by experienced RN/LIP/Vascular Access Team (VAT)

Examples of Emergent patients include but are not limited to:
- Sepsis
- Hypoglycemia
- Sensitive medication timing
- Positive blood culture in need of antibiotic

**Vascular access obtained?**

**EMERGENT**
Team Huddle for IV Escalation
- Consult Anesthesia, Transport, IR, etc... for immediate consideration of **IV Alternatives/next steps**

**NON-EMERGENT**
(Access required within 4 hours)

**Difficult IV Access**
- 2 IV attempts by experienced RN
- OR
- 2 IV attempts by VAT

Examples of difficult IV access include but are not limited to:
- Chronic disease process
- History of multiple IV sticks
- Central lines in past

**Vascular access obtained?**

**NON-EMERGENT**
Consider the following:
- Consult Anesthesia, Transport, IR, MET RN, etc...for consideration of **IV Alternatives/next steps**

**Special Techniques**
- Hot packs
- Vein viewer
- Transilluminator

**Needlestick Pain Prevention**
- Distraction/Child Life
- Sucrose for infants
- Elamax
- Pain Ease
- Buzzy
- Synera patch

**Daily Evaluation of IV Access**
- Daily vascular access assessment on rounds
- IR consult as indicated

**Team Huddle for IV Escalation**
NON-EMERGENT
- Daily vascular access assessments on rounds
- IR consult as indicated

**Daily Evaluation of IV Access**
- IR consult as indicated

**Daily Evaluation of IV Access**
- IR consult as indicated

**IV Alternatives**
- IM route for medications
- Oral, NG, GT route for hydration/medications
- Intraosseous line placement

E. Rader
4-1659
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Vascular Access - Perioperative Area

Inclusion Criteria:
Patients presenting to the Operating Room who need vascular access.

Patient needs peripheral IV access

Pre-op RN attempts IV access (max 2 attempts)

If pre-op RN unsuccessful, Anesthesia resident and/or Attending attempt IV access

If IV access has not been obtained within 6-10 attempts, discuss options with surgeon performing case and parent:
- Cancel case
- Continue to attempt IV access
- Consider placing a central line

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Needlestick Pain Prevention

- May use **sucrose** for patient who is not NPO
- May use **Pain Ease spray**
- **Lidocaine (LMX) 4% cream**- apply 1 application topically as needed for painful procedure. For use in patients ≥ 4 months of age. Apply 30 minutes prior to procedure.
- **Lidcaine-prilocaine (EMLA) 2.5-2.5% cream**- apply 1 application topically as needed for painful procedure. Apply to site 1-3 hours prior to procedure. Cover with bio-occlusive dressing.
- **Lidocaine-tetracaine (synera) 70-70 mg**- apply 1 patch topically as needed for painful procedure. For use in patients ≥ 3 years of age. Apply to site 20-30 minutes prior to procedure.
**Considerations**

Consider central venous access for patients with one or more of the following:

<table>
<thead>
<tr>
<th>Therapy/Indication</th>
<th>Anticipated Duration</th>
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</thead>
<tbody>
<tr>
<td>Difficult IV access (per definition)</td>
<td>ALL</td>
</tr>
<tr>
<td>Non-irritating medications/fluids</td>
<td>&gt;72 hours</td>
</tr>
<tr>
<td>Irritants/vesicants</td>
<td>&gt;48 hours</td>
</tr>
<tr>
<td>PPN/TPN</td>
<td>&gt;72 hours</td>
</tr>
<tr>
<td>Calcium</td>
<td>&gt;1 dose</td>
</tr>
<tr>
<td>Transfusions</td>
<td>&gt;48 hours</td>
</tr>
<tr>
<td>Multiple medications and/or compatibility issues</td>
<td>ALWAYS CONSIDER</td>
</tr>
<tr>
<td>Frequent venous blood sampling</td>
<td>&gt;48 hours</td>
</tr>
<tr>
<td>Concern for Renal Failure/venous preservation</td>
<td>&gt;24 hours</td>
</tr>
</tbody>
</table>
References

https://www.chop.edu/clinical-pathway/iv-access-improvement-project-clinical-pathway
https://www.chop.edu/clinical-pathway/vascular-access-inpatient-clinical-pathway
Contributing Members

Arkansas Children’s- Little Rock

Dr. Elizabeth Storm- Emergency Medicine
Dr. Rebecca Latch- Hospitalist
Dr. Shawn Cecil- Chief Resident
Sabra Curry- APRN NICU
Dr. Arundathi Reddy- Anesthesiology
Dr. Charles James- Interventional Radiology
Randy Rice, RN- Emergency Department
Kristin Maclean, RN- Emergency Department
Simone Merced, RN- Medical/Surgical Resource Team
Nici Belknap, RN- NICU
Catherine Rayburn, RN- Vascular Access Team
Emily Huffman, RN- Information Services
Tammy Diamond-Wells, RN - Nursing Director
Emily Rader, RN- Clinical Pathways Specialist

Arkansas Children’s- Northwest Arkansas

Dr. Sarah Jeffreys- Hospitalist
Mandy Quick, APRN- Emergency Department