ANTICIPATED VASCULAR ACCESS REQUIREMENTS: NEONATAL INTENSIVE CARE UNIT PATIENTS

DOCUMENT TYPE: ALGORITHM

Site Applicability

BC Women’s Hospital Neonatal Intensive Care Unit (NICU).

Practice Level/Competencies

House Staff and Neonatologist with specialized skill to place or remove umbilical catheters in Neonates

Members of the NICU PICC team with specialized skill to place or remove Peripheral Inserted Central Catheters in neonates

Registered Nurses with advanced skill to insert peripheral intravenous catheters in neonates.

Documentation

- Nursing Flow Sheet
- Physician Progress Notes
- Central Venous Catheter (CVC), Peripherally Inserted Central Catheter (PICC), Central Arterial Catheter: Assessment and Tracking: NICU
- Peripherally Inserted Central Catheter (PICC) Registry
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WHAT ARE THE ANTICIPATED VASCULAR ACCESS (Venous and/or Arterial) REQUIREMENTS?

**CENTRAL**

Infant < 1250 grams And/or IV medication and/or parenteral nutrition for >7 days and/or IV solutions-medications require central access and/or clinical acuity of the infant

Attempt to centrally place UVC if possible. If central UVC unsuccessful attempt low non-central UVC. If any UVC access unsuccessful consider PIV (follow "peripheral" pathway and reassess access as required).

To prevent hypoglycemia start IV solution prior to x-ray confirmation if blood return.

**UVC Non-Central/Atypical malpositioned**

Pull UVC back to below liver. Consider PIV/PICC and remove UVC

Review Need for UVC Daily

**UVC Central**

IV medications and/or parenteral nutrition for <7 days and infusions do not require central access

Attempt Peripheral Access

Successful: Daily Review Need for Access

Unsuccessful after 4 skin breaks or venipunctures within 24 hours

Notify House Staff or Pediatrician (if in MBC) and discuss:
- Need for vascular access
- Give infant a break
- Timeframe for re-attempt
- Consider UVC or PICC
- Emergent situations or newly born infant must notify Neonatologist

**AT DAY 5 & Onward**
Neonatologist determines with team to continue with UVC which is reviewed DAILY or change access to PIV/PICC

**PERIPHERAL**

Infant < 1000 grams or clinical indication: frequency of blood draws, invasive blood pressure monitoring required

Attempt UAC insertion

Review for UAC Daily

**ARTERIAL**

DAILY REVIEW ACCESS

Consider removal when enteral feeds are at or >120 mL/kg/day for infants at or >1500 grams and/or medications can be given orally

**PICC unsuccessful after 2 practitioner attempts notify House Staff to consider access options**

At Day 10 & Onward
Team reviews the need for vascular access with Neonatologist

Neonatologist determines with team to continue with UVC which is reviewed DAILY or change access to PIV/PICC

**PICC Central/Non-Central/Atypical**
Follow PICC Documentation Forms

NOTE: At time of birth, access should be obtained within 1 hour. Umbilical lines should be placed within 30 minutes from start of attempt. If unsuccessful, place low lying UVC and reassess access once in the unit

NOTE: Prior to CDH Surgery for repair UVC must be removed and replace with adequate central access (e.g. double lumen PICC)

NOTE: Once any type of access is no longer clinically indicated best practice is to remove it as soon as possible

**Abbreviations:**
Kg – kilograms
mL – Milliliters
> – greater than
< – less than
IV – Intravenous
PIV – Peripheral Intravenous
UVC – Umbilical Venous Catheter
UAC – Umbilical Arterial Catheter
PICC – Peripheral Inserted Central Catheter
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References


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Developed By
BCW Neonatal Program – Quality & Safety Leader

Version History

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