

Vascular Access Devices

Background

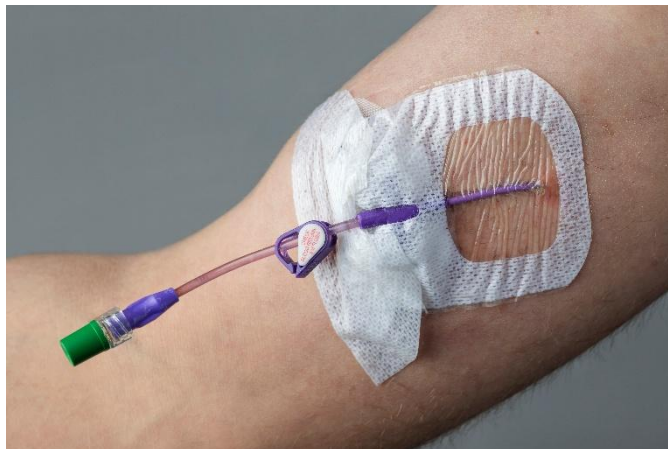
Vascular access devices provide repeated, long-term venous access for drawing blood or administering intravenous medication or infusion therapy. There are many types and brands of access devices, but the two main categories are peripherally inserted central catheters (PICCs) and implantable venous access devices (Ports). The type of device selected depends on the individual's need for access, expected length of use, risk or infection, activity level, and lifestyle.

A PICC is a thin, flexible tube inserted into a vein in the upper extremity and threaded into larger veins near the heart. PICCs can vary in size, brand, number or lumens, and presence of valves. PICCs without valves require a clamp to prevent retrograde blood flow or air from entering the line. Securing the PICC is essential to prevent migration or dislodgment. Maintenance may include routine saline flushing and weekly sterile dressing changes. Additional products, such as antimicrobial patches or end caps, may be used to help prevent infection. Blood pressure readings should be avoided in the extremity with the PICC.

A Port consists of a catheter threaded into a large vein near the heart, connected to a small reservoir (the port). Both parts are placed under the skin. When the port needs to be accessed, a special needle is inserted through the skin into the rubber top of the port. Accessing a port is a sterile procedure.

Potential complications of vascular access devices include infection at the site or in the line, occlusion, broken or damaged tubing, or air embolism. Signs and symptoms of an air embolism include:

- Lightheadedness
- Decreased blood pressure
- Increased heart rate
- Chest pain
- Anxiety
- Shortness of breath



Top Takeaways for School

Vascular access may be necessary for infusion therapy or treatment of a medical condition. Damage to or removal of the line can be a life-threatening emergency.

A dislodged or leaking tubing, or any student complaint of sudden weakness, chest pain, or change in alertness should be assessed immediately by the school nurse.

Any break in the catheter should be clamped immediately at a point closer to the chest than the leak. Quick access to clamps and a pressure dressing is important.

The area around the catheter insertion should always be covered with a clear dressing. Reinforcement may be necessary, but routine dressing changes are sterile procedures and are not recommended to be performed at school.

A port will look like a small, round bump under the skin, about the size of a quarter.

Monitor for signs and symptoms of infection. Fever, redness, swelling, drainage, or pain require follow-up.

Considerations for the Individualized Healthcare Plan (IHP)

- Nursing diagnoses: Risk for infection and risk for injury
- Assessment of implanted medical device (consider location, date of surgical placement, and device-specific information)
- Use of specialized equipment, adaptive equipment, orthotics
- Activity and positioning precautions and/or restrictions
- Equipment troubleshooting (consider equipment/device user manual, battery, charger)
- Consider emergency action plans (EAPs) and emergency evacuation plans (EEPs) related to special health care needs, including staff education/training

Discussion Starters for the Educational Team

1. Would the student benefit from evaluations or assessments in any of the following areas: physical therapy, occupational therapy, speech and language therapy, assistive technology, adapted physical education, functional behavior, psychology, hearing and vision?
2. Would the student benefit from additional academic support and/or modified education (e.g., copies of notes, extra time, reduced workload, simplified instructions, alternative formats for presentation of material, 504/IEP)?
3. Does the student require activity precautions to prevent injury?
4. Does the classroom environment support the student's needs and/or equipment (e.g., desk/seating options, flash pass for bathroom or nurse)?
5. Will staff receive education/training to implement the student-specific emergency plan?

Resources

Cystic Fibrosis Foundation: Vascular Access Devices- PICCS and Ports
cff.org/managing-cf/vascular-access-devices-piccs-and-ports

USA Oncology Centers: Venous Access
usaoncologycenters.com/venous-access/



For more information, please scan the QR code or visit: KennedyKrieger.org/SHNIC

