Capital Health

LEARNING MODULE
FOR

CARE OF AN IMPLANTED VASCULAR ACCESS DEVICE (IVAD)

Post-Entry Level Competency

CC 80-020

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LEARNING OBJECTIVES & METHOD

Following completion of the required learning activities, the RN will understand:

1. The indications and advantages of an Implanted Vascular Access Device (IVAD).
2. The components and anatomical placement of an IVAD.
3. The rationale for using a non-coring huber needle versus a conventional needle when accessing the IVAD.
4. The criteria for identifying the power-injection capability of an IVAD.
5. The nursing assessment and interventions required post insertion of an IVAD.
6. The potential complications associated with IVADs and nursing actions to prevent and treat these complications.

To be deemed competent in the care of an IVAD, the RN will:

1. Review the Policy and Procedure and learning module for the care of an IVAD.
2. Complete the self-test.
3. Practice the procedures and demonstrate the skills to clinical educator or delegate.
4. Maintain a record of competence.
5. Conduct a yearly self-assessment of competency level and develop a plan in conjunction with the health services manager to meet ongoing needs.

THEORY

An Implanted Vascular Access Device or IVAD is a totally implanted drug and fluid delivery system. It is commonly referred to as an infusion port, port or port-a-cath. An IVAD consists of two primary components, an injection port with a self-sealing septum and a radiopaque catheter.

Picture 1 – Implanted port

Source: Bard Access; October 2012

The injection port is a small reservoir made of titanium or plastic, with a septum made of a dense self-sealing material, usually silicone. The port is implanted in a subcutaneous pocket and sutured in place to the fascia to prevent migration. The anterior upper-chest wall is the most common site, but the abdomen, groin, or antecubital area of the arm may also be used. Depending on the type and size of IVAD, the diameter of the port ranges from 16.5-40 mm with reservoir volume of 0.2-1.47 mL.

The catheter is tunnelled into a large vein, such as the subclavian, and then threaded until the tip of the catheter rests in the lower third of the Superior Vena Cava (SVC). The catheter is made of radiopaque silicone or polyurethane allowing for placement and location verification under fluoroscopy. These materials are soft and flexible but can rupture if excessive pressure is applied, such as when using a syringe less than 10mLs.

IVADs are available in a variety of shapes and sizes. Most commonly single lumen IVADs are used but they are also available as double lumen. If the port has a double septum, these are considered two separate catheters and both ports must be flushed separately.

Picture 2 – Dual lumen IVAD

Source: Bard Access; October 2012

Peripheral ports

An IVAD may be placed peripherally, above or below the antecubital fossa. A peripheral port has an injection port that is approximately half the size of a standard port. A peripheral port must be accessed with a smaller gauge non-coring huber needle (22 gauge).

Indications for IVADs

Like other central venous access devices (CVADs), implanted infusion ports are chosen when patients require venous access for greater than 7 days, administration of hyperosmolar solutions (TPN), or continuous infusion of irritant or vesicant drugs. They allow repeated access for blood sampling and IV administration, without the trauma of repeated venipunctures. The tip of the catheter rests in the superior vena cava, therefore maximizing hemodilution and potentially decreasing venous irritation.

Advantages:

- can remain in place and be functional for many years
- ideal for intermittent access
- less potential for infection
- no external components when not accessed
- increased patient mobility and freedom

Disadvantage:

- more invasive procedure for insertion and removal
- must be accessed with a needle through the skin

- usually single lumen

Non-coring Huber Needles

Specifically designed non-coring huber needles, commonly known as “gripper needles” must be used to access the IVAD. This design allows the septum to self-seal when the needle is removed and prevents damage of the septum, which could cause leakage of fluid. The average life of the system is 1000-3600 punctures with a non-coring needle.

Non-coring huber needles are available in a variety of sizes and configurations. The gauge and length of the needle depends on the depth of the port and the type of fluid to be infused. To reduce the risk of needle dislodgement, select the length that allows the needle to sit flush to the skin and securely in the port.

- Non-coring huber needles are available in a variety of lengths from 0.5-2 inches. To reduce the risk of dislodgement, select a length that allows the needle to sit flush to the skin and securely in the port. Most common length is 0.75 inch.
- Most commonly used gauge is 19-22. A 19 gauge needle is recommended for the administration of blood products.
- A peripheral port must be accessed with a 22 gauge non-coring huber needle or smaller.
- Non-coring huber needle sets are available with or without the "Y" injection site
- Non-coring power needles are available for use with power ports when power injection of contrast media is required.

Picture 3 - Non-coring huber needle

SafeStep® Huber Needle Set

Picture 4 - Non-coring **power** needle

Power-Loc Max®

Source: Bard Access; October 2012

Power Ports

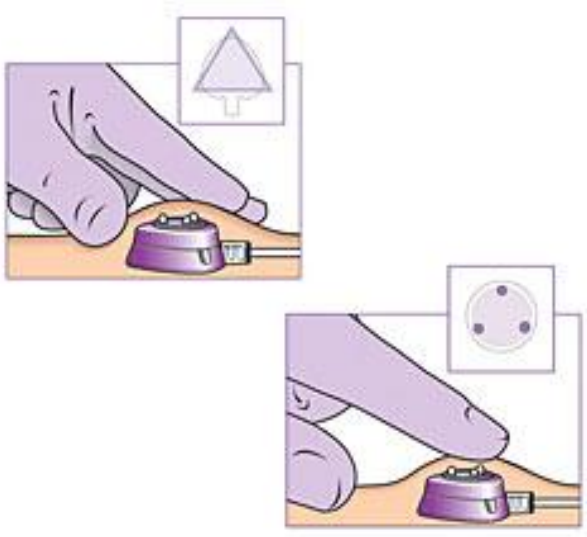
IVADs may be classified as “power ports” which indicates that the infusion device can withstand infusions at a rate of 5 mL/second at a maximum of 300 psi. This allows for power injection of contrast materials. The maximum pressure for non-power ports is 40psi.

When accessing an IVAD for power injection, power-injection capability should be confirmed at the time of access. At least two of the following identification methods should be used.

- reviewing the patient’s health record for documentation of the type of device inserted
- asking the patient for information. Patients should be provided with product identification information such as a wallet card or key ring.
- CT or chest x-ray confirmation. Power ports have the letters “CT” on the port which can be visualized by CT or x-ray.
- Many manufacturers add unique features to aid in identifying power port. One example is the Bard power port which can be identified by their triangular shape as well as subcutaneously by palpating three bumps located on the top of the septum, also in a triangular shape.

Picture 5 – Power Port

Source: Bard Access; October 2012



Source: Bard Access; October 2012

If the infusion port is being accessed for a power injection, it must be accessed with a non-coring huber needle which meets the specifications for power injection.

After accessing a power port with a non-coring power needle, a verification sticker must be added to the tubing of the non-coring needle. The RN accessing the power port must date and initial this sticker. The sticker communicates to the CT staff that the device was verified to be a power port prior to access.

Picture 6 – Power Verification Sticker

Pre-Insertion Care

Provide and document patient teaching. Include the following: purpose, placement, insertion procedure, and post-insertion care, including what to report to the nurse.

The following bloodwork may be considered: CBC, INR, PTT to assess for coagulopathies and thrombocytopenia.

Insertion Care

An implanted vascular access device (IVAD) or infusion port may be inserted in interventional radiology or in the operating room. In interventional radiology, the procedure is preformed under local anaesthesia using fluoroscopy to facilitate correct tip placement.

Two small incisions are made. A small incision slightly larger than the diameter of the device is made and a small pocket for the port is created under the skin. Another very small incision is made above this site and the catheter is threaded through the vein until the distal end is situated in the lower 1/3 of the SVC. The port is sutured in place.

IVADs are flushed and heparin locked at the time of insertion.

Post Insertion Care

Prior to initial use, placement is confirmed at the time of insertion in the radiology department or by x-ray in the OR. An IVAD may be used immediately following insertion.

Immediately, and for the first two hours post insertion, assess the insertion site for bleeding, redness or swelling. The patient's level of comfort and any abnormal sensations at the site should be assessed. Any abnormal sensations should be reported to the physician immediately. These symptoms may include pain upon inspiration, burning, or throbbing.

Steri-strips may be applied to the site or a skin adhesive (Histocryl® glue) may be used to close the incision. Immediately following insertion, the site is covered with a sterile gauze dressing; this should be removed 48 hours following insertion. If steri-strips are applied, remove 5-7 days post-insertion.

The patient should be encouraged to keep the incision dry when showering or bathing for the first week by applying saran wrap over the wound.

If complications are noted, refer to the nursing actions outlined in the complications section.

All patients should be aware of safety precautions and signs and symptoms to report to the health care professionals.

Care and Maintenance

Accessing an IVAD

Aseptic technique is required when accessing an IVAD.

Stabilize the system by grasping the edges of the port between the thumb and index finger of your non-dominant hand in order to prevent movement of the septum during needle insertion. Thumb or finger should ideally cover the skin over the catheter port connection. Another method of stabilizing is the use of thumb and 2 fingers. Thumb and middle finger stabilizing with index finger stabilizing and protecting connection.

Interventions to reduce pain of port access should be considered. Topical anaesthetics such as EMLA cream may be ordered.

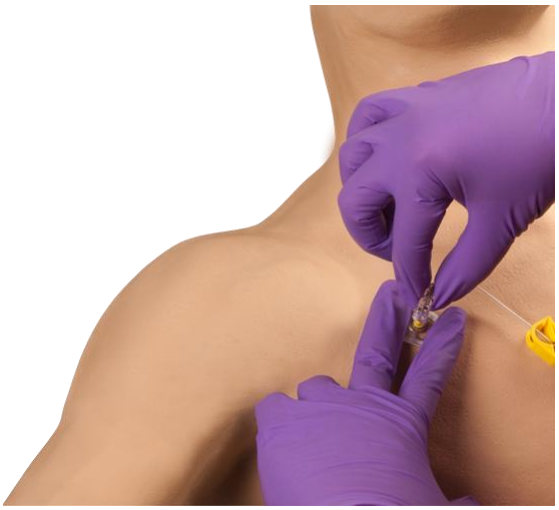
Insert the non-coring huber needle perpendicular (90^0) to the skin surface and through the centre of the septum until the needle touches the back of the port. Correct positioning reduces the risk of extravasation. Case reports document that huber needles have become dislodged from the septum and lead to chemotherapy extravasation.

Non-coring huber needles that adhere to the skin are recommended. They should be inserted to the back of the septum and should be further secured with a transparent dressing. Incorrect insertion of the needle can damage the septum or affect the ability to flush the system.

Never tilt or rock the needle once the port has been entered, as this may damage the system or cause fluid to leak into the subcutaneous tissue.

De-Accessing an IVAD

Picture 7 – Deaccessing



Source: Bard Access; October 2012

When not in use, IVAD must be accessed and flushed every 4 weeks with 20 mL normal saline using turbulent technique followed by 5 mL heparin lock solution (100u/mL).

Occlusion Prevention:

Regular flushing of the IVAD is required to prevent or delay catheter occlusion related to fibrin formation or drug precipitate. This is accomplished by flushing the port with 20 mLs normal saline following drug administration or blood sampling and every 4 weeks when not in use. The flushing technique should be a start/stop method, otherwise known as “turbulent flush”. This type of flushing technique helps clear the walls of the catheter more efficiently then a straight flush.

When the IVAD is not being used, it must be flushed once per month with 20 mL normal saline followed by 5 mL of heparin 100 units/mL solution.

If the infusion port has a double septum, both ports must be flushed. These are considered two separate catheters.

Positive or neutral displacement needleless connectors are used to prevent the backflow of blood into the catheter, which could lead to clotting of blood in the catheter and at the tip of the catheter. It is important to always follow the clamping sequence recommended by the manufacturer to help to prevent backward flow of blood into the catheter.

Complications

Three major complications of all CVADs:
1. Occlusions - may be mechanical, thrombotic or non-thrombotic.
2. Infection
3. Venous thrombosis

Pinch-off Syndrome is a complication unique to IVADs.

Catheter pinch-off syndrome is rare and often misdiagnosed complication of IVADs. It occurs when the catheter is compressed between the first rib and the clavicle causing intermittent problems with infusion and aspiration. In rare situations the catheter may fracture, break and embolize.

Pinch off can be prevented by using the internal jugular vein for access rather than the subclavian vein.

It is important to recognize early signs of catheter pinch-off problems such as,
- abnormal symptoms upon flushing or infusion of fluids through the catheter
- blood cannot be aspirated from the catheter or the catheter cannot be flushed easily
- patient must modify posture (e.g. raise shoulder) for the catheter to function

If the catheter has fractured the patient may experience arrhythmias, palpitations, shortness of breath or extravasation.

Patients should be educated to inform healthcare professionals if they experience pain or any other abnormal sensation.

If any of the symptoms are present, stop using the catheter and obtain a chest x-ray. For accurate imaging the patient should be upright with arms at side.

If pinch off is confirmed or suspected, the catheter must be removed immediately. In rare situations the catheter may embolize into the right ventricle or pulmonary artery and may need to be retrieved by interventional radiology.

COMPLICATIONS SIGNS AND SYMPTOMS	POSSIBLE CAUSE	NURSING ACTIONS	BEST PRACTICE
Bleeding from the insertion site Excessive bleeding after insertion is unusual	Bleeding occurs if the patient: • Has some form of coagulopathy • Is on an anti-coagulant • Is taking over the counter medications, which affect platelet count • Has undergone a traumatic insertion procedure • Has been extremely active post insertion	If bleeding is excessive, apply direct pressure and notify the doctor. If bleeding occurs immediately post insertion, apply a mild pressure dressing. The initial dressing should have gauze covering the insertion site to absorb any drainage.	Thorough patient assessment to determine the presence of factors which may cause bleeding post insertion (i.e. bleeding disorders, abnormal clotting blood levels)
Skin sensitivity at IVAD site - Irritated or inflamed skin in the area of the transparent dressing - Patient complains of discomfort under the dressing	Sensitivity to 2% Chlorhexidine Gluconate with 70% Isopropyl Alcohol Sensitivity to the transparent dressing Not allowing complete drying of antiseptic prior to dressing application	Consider changing the antiseptic of choice to 0.5% Chlorhexidine Gluconate with 70% Isopropyl Alcohol. Consider changing the antiseptic to 10% Povidone Iodine. To achieve the maximum antiseptic effectiveness it must be applied for a total of 2 minutes and allowed to remain on the skin once dry. Try an alternate transparent dressing (e.g. IV 3000™) or gauze dressing.	Allow antiseptic and skin protectant to completely dry prior to applying the new dressing.
Skin Erosion Erosion of the skin can occur when the IVAD is placed just beneath the skin surface and the port body breaks through the skin	Port implanted too superficially, Poor nutrition / skin integrity Significant weight loss	Identify patients at risk Careful application of dressings / tape to limit skin irritation	Routinely assess IVAD site

Extravasation - Swelling or redness around port or chest, - pain or burning in chest, neck or shoulder during or post infusion	Huber needle no longer inserted completely. Catheter fracture/separation Backtracking of fluid by fibrin sheath	Stop the infusion Notify the physician Follow chemotherapy extravasation algorithm if chemotherapy was infusing	Proper needle insertion and securement. Patency must be confirmed by having brisk blood return prior to infusing any medication or infusate into an CVAD Teach patients activities to avoid pulling on or dislodging huber needle.
Fluid Leaking from the cap/IV connection	Loose tubing connection.	Tighten adaptor and IV tubing. If IVAD was heparin locked, the catheter will have to be flushed again.	Luer lock all connections Use waterproof tape to secure adaptor only if a disconnection risk has been identified
Port Migration Position of port has changed or is mobile.	One or more sutures have disconnected. Device can rotate 180^0 if not properly secured. Patients who manipulate their port – also known as "port fiddlers".	Assess history of problem Assess for redness, swelling or pain Notify physician, as surgery is required to secure the port.	Teach patient how to modify ADLs to minimize stress on port. Patients should be reminder not to manipulate their port.
Catheter tip migration May present as: - referred pain in the jaw, ear or teeth; - distended veins on the side of the CVAD; - pain during infusion or flushing - sluggish drip rate	Types of patients most susceptible: • Oncology patients who experience frequent nausea and vomiting • Patients who are physically active • Respiratory patients who have severe bouts of coughing.	Assess for signs and symptoms of catheter migration (see signs and symptoms). Teach the patient to observe for these and notify RN if present. If these are present, notify the physician. The physician will have catheter tip placement verified by x-ray.	Medicate conditions that could cause nausea and vomiting, severe episodes of coughing. Teach patients to engage in activities that require less physical activity (i.e. brisk walking).

during infusion - inability to aspirate blood.	In these three instances there may be an increase in intrathoracic pressure causing spontaneous migration of the tip of the catheter.		

OCCLUSIONS

Signs and Symptoms	Possible Cause	Nursing Actions	Best Practice
IV will not infuse Pump occlusion alarm sounding Inability to aspirate blood but can flush (Partial occlusion) Inability to aspirate blood or flush IVAD (Complete occlusion**)**	**Mechanical:** • IV tubing or catheter kinked • Clamp closed • Dressing placed on too tight • Catheter tip lying against the side of the vein **Chemical :** Precipitate in IV tubing or catheter **Thrombotic:**	Check IV tubing and IVAD for kinks - correct kinks if present. Check clamps - release if closed. Check to see if dressing is too tight over the IVAD. Have the patient change position and the position of the arm. Attach a 10 mL prefilled syringe of normal saline to adaptor, aspirate gently, inject 3-5 mLs of normal saline and attempt to aspirate again. Check IV tubing and adaptors for presence of precipitate. Refer to policy: *Management of Occluded Central Venous Access Devices*.	Do not allow IV lines to run dry. Flush IVAD with normal saline before and after medication. Ensure dressing is not applied tightly as to occlude the IVAD line. Flush with 20 mL normal saline using turbulent technique before and after all medications. Flush with 20 mL normal saline after taking blood samples

Deep vein thrombosis Swelling in the arm, distension of the veins of the arm and neck on the side in which the IVAD is located. The IV solution may not infuse and the patient may have pain in the neck, scapula, arm or ear. Over time, collateral circulation will develop over the chest.	Injury to the intima of the wall of the vein. Obstructed blood flow by clot formation. Changes in composition of the blood.	Notify the physician	

Infection:

Systemic and local infections are possible complications of a central line. A common source of infection is the catheter hub but other potential causes include migration of skin flora up the catheter tract, hematogenous seeding from another site of infection, catheter related thrombus and rarely, contaminated infusate. To decrease the risk of infection from the catheter, aseptic technique is used at all times. Hand hygiene is critical before performing any aspect of line care. Clean non-sterile gloves are worn to minimize the risk of transferring microorganisms from the caregiver's hands to the patient as well as for the caregiver's protection. All catheter connection sites must be disinfected with 70% alcohol or 2% Chlorhexidine Gluconate with 70% Isopropyl Alcohol swabs for 15 seconds using a juicing technique before the system is accessed. Always allow solution to dry completely to ensure antimicrobial activity. A mask is to be worn any time the system is open and when the dressing is removed.

Signs and Symptoms	Possible Cause	Nursing Actions	Best Practice
Catheter sepsis – Rise in temperature, increased pulse, chills, malaise, drainage from the insertion site and elevated white blood cell count.	Infection present at insertion site or bactremia	Obtain blood samples for culture and sensitivity. If drainage is noted from insertion site - send a swab for culture and sensitivity. Notify the physician Two potential modes of treatment (1) Leave IVAD in place, treat with	Use aseptic technique during all aspects of IVAD care Perform hand hygiene thoroughly with antibacterial soap or use alcohol based hand rub and wear clean gloves before caring for the IVAD. Change dressings and adaptors as

Signs and Symptoms	Possible Cause	Nursing Actions	Best Practice
		antibiotics (2) Remove the IVAD The decision to remove the catheter depends upon the causative organism, the type of catheter and the condition of the patient (e.g., immunocompromised).	outlined in nursing procedures Scrub all adaptors for at least 15 seconds using an alcohol swab prior to accessing

Venous Air Embolism:

To prevent venous air embolus and decrease the risk of infection, open the system only when it is absolutely necessary. Lines should always be clamped when they are not in use. All lines must be clamped before the system is opened. An open system or cleansed connection site should never be set down.

Signs and Symptoms	Possible Cause	Nursing Actions	Best Practice
Chest pain, dyspnea, tachycardia, cyanosis, decreased blood pressure, nausea, confusion	When 10-20mL of air is trapped in the vein it is carried quickly to the right ventricle. Here it blocks the flow of blood from the right ventricle into the pulmonary arteries thus the right side of the heart overfills. The right ventricle forcefully contracts in an attempt to eject the blood, causing the air bubble to break into smaller air bubbles, which cause more obstruction and pulmonary hypoxia. Pulmonary hypoxia causes vasoconstriction	If signs and symptoms are noted, place on the left side with feet above the heart (this allows air to enter the right atrium and disperse via the pulmonary artery) Notify the physician Monitor vital signs Oxygen by mask is usually required Stay with the patient	Avoid use of instruments which may puncture catheter (i.e. hemostats, scissors, safety pins) Remove all air from IV tubing prior to use When changing adaptor - close clamp on IVAD prior to removing the old adaptor.

Signs and Symptoms	Possible Cause	Nursing Actions	Best Practice
	in the lung. This leads to an even greater workload for the right ventricle. Eventually, left ventricular filling is reduced and cardiac output drops, shock and death rapidly occur. May occur on insertion and removal, if catheter is punctured, during adaptor change or if air not removed from IV tubing		

Pinch Off Syndrome:

Signs and Symptoms	POSSIBLE CAUSES	NURSING ACTIONS	Best Practice
Occurs when the catheter is compressed between the first rib and the clavicle causing intermittent problems with infusion and aspiration. Early signs: - abnormal sensations - patient must modify posture (eg. raise shoulder) for the catheter to function	Mechanical friction caused by shoulder movements when catheter is placed in the subclavian vein medial to the mid-clavicular line between the clavicle and 1st rib. Catheter is squeezed between these bones until the line fractures or is completely severed.	Stop using the CVAD Notify the physician Obtain upright chest X-ray.	Insertion technique. Avoid forceful flushing of the IVAD. Teach patients to avoid activities with a lot of shoulder movement.

Signs and Symptoms	POSSIBLE CAUSES	NURSING ACTIONS	Best Practice
In rare situations, the catheter may fracture or break possibly leading to catheter embolism. If the catheter has fractured the patient may experience chest pain, shortness of breath or palpitations.			

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SELF TEST

1. Two components of an implantable vascular access device (IVAD) are:

2. Describe why a non-coring huber needle is used with an IVAD.

3. If the IVAD is accessed continuously, the huber needle should be changed every ____ days.

4. If an IVAD is not in use, it must be accessed and flushed with _____ every ___ weeks.

5. Describe the procedure for accessing an IVAD.

6. Describe the procedures to confirm patency.

7. List two methods that could be used to identify if the patient has a “power port”.

8. Discuss the nursing interventions, which would be appropriate if resistance is encountered when instilling fluid into a port.

9. What nursing measures are implemented if the patient experiences pain and burning when initiating an IV infusion via an IVAD?

10. Describe the nursing interventions if catheter pinch-off is suspected.

SELF TEST ANSWERS

1. (a) Injection Port - a small chamber made of titanium or plastic with a self-sealing septum, usually silicone.

   (b) A Radiopaque silicone or polyurethane catheter

2. A non-coring huber needle has a curved tip, which prevents coring of the septum and permits a clean entry, thus assuring long life without leakage. Conventional needles "core" holes in the septum, damaging its self-sealing capacity. Non-coring huber needles allow the septum to reseals itself when the needle is removed.

3. 7

4. 20mL normal saline and 5 mL Heparin lock solution (100u/mL) turbulent flush

   every 4 weeks

5. Cleanse the site with 2% Chlorhexidine Gluconate with 70% Isopropyl Alcohol using gentle friction in a horizontal pattern, then vertical pattern, followed by a circular pattern. Allow to air dry completely.

   Stabilize by grasping the edges of the port between the thumb and index finger of your non-dominant hand in order to prevent movement of the septum during needle insertion. Insert the huber needle perpendicular (90°) to the skin surface and through the centre of the septum until the needle touches the back of the port.

6. Assess system patency by aspirating for blood return and flushing the system with 20mL normal saline (two 10 mL prefilled saline syringes) using turbulent technique.

7. At least two of the following identification methods should be used.

   - reviewing the patient's chart for documentation of the type of device inserted
   - asking the patient for information. Patients should be provided with product identification information such as a wallet card or key ring.
   - CT or chest x-ray confirmation. Power ports have the letters "CT" on the port which can be visualized by CT or x-ray.
   - Many manufacturers add unique features to aid in identifying power port. Such as the Bard power port which can be identified by their triangular shape as well as subcutaneously by palpating three bumps located on the top of the septum, also in a triangular shape.

8. Check needle placement. Change the patient's position or move the upper extremities and repeat attempt. Remove huber needle and insert another huber needle. If resistance is still felt, DO NOT APPLY FORCE. STOP AND CONTACT THE PHYSICIAN.

9. Stop the infusion - assess for blood return, assess site redness, swelling, and tenderness. Notify physician.

10. Interventions :

    - assess for sudden and/or intermittent withdrawal occlusion and inability to infuse

fluids.

- reposition arms or shoulders to assess for blood return or IV fluid flow.
- notify physician and obtain an upright CXR.

Capital Health Proficiency Standards Skills Checklist

Title: **Accessing the IVAD**

Name:

Unit:

Evaluator:

Date:

The RN will perform the above procedure consistent with the skills checklist.

Critical Behaviours Performed	Yes	No
1. Performs hand hygiene. Applies non-sterile gloves and mask.		
2. Positions patient. Exposes and palpates port. If IVAD will be used to administer CT contrast, uses at least 2 identifiers to confirm device is a power port.		
3. Selects appropriate type and size non-coring huber needle.		
4. Using swab sticks cleans the area by gently scrubbing over the IVAD site in a horizontal pattern to cover a 5 cm area and then with the other side of the swabstick in a vertical pattern. With a second swabstick, cleans the area beginning at the IVAD site with a circular motion going from left to right (middle to outward) extended in 5cm in diameter coverage. Flips the swabstick over and repeats going from right to left. Discards swab sticks and allows to air dry.		
5. Removes non-sterile gloves and performs hand hygiene.		
6. Places equipment onto sterile field. Applies sterile gloves.		
7. Attaches needleless adapter to the extension set of the huber needle. Attaches prefilled saline syringe to adaptor and primes tubing and huber needle. Leaves syringe attached to set with clamp closed.		
8. Stabilizes port edge with non-dominant hand.		
9. Using dominant hand, inserts the non-coring huber needle at a 90° angle through the centre of the port system using firm, consistent pressure.		
10. Opens clamp and verifies patency by aspirating for blood return.		
11. Flushes with 20 mL of normal saline using turbulent flush technique. Clamps during last mL. Removes syringe from adapter.		

Critical Behaviours Performed	Yes	No
12. Connects to primed IV set or heparin locks.		
13. Applies transparent dressing.		
14. If IVAD was confirmed to be a power port and was accessed using a non-coring power needle (PowerLoc Max®), the RN dates and initials the power verification sticker attached to the tubing of the non-coring needle.		
15. Disposes of supplies and performs hand hygiene.		
16. Documents.		

Capital Health Proficiency Standards Skills Checklist

Title: **Heparin Locking**

Name:

Unit:

Evaluator:

Date:

The RN will perform the above procedure consistent with the skills checklist.

CRITICAL BEHAVIOUS PERFORMED	YES	NO
1. Performs hand hygiene and applies non-sterile gloves.		
2. Prepares 5 mLs of heparin 100units/mL flush solution in a 10 mL syringe.		
3. Scrubs adaptor with alcohol swab for 15 seconds using a juicing technique and allows to air dry.		
4. Attaches prefilled saline syringe to adaptor and opens clamp on extension.		
5. Aspirates for blood return to verify patency. Flushes with a total of 20 mL normal saline using turbulent flush technique. Clamping during the last mL. Removes saline syringe.		
6. Flushes with 5 mL heparin 100units/mL solution. Clamping during the last mL. Removes syringe.		
7. Disposes of supplies and performs hand hygiene.		
8. Documents.		

Capital Health Proficiency Standards Skills Checklist

Title: **Obtaining Blood Samples from an IVAD**

Name:

Unit:

Evaluator:

Date:

The RN will perform the above procedure consistent with the skills checklist.

CRITICAL BEHAVIOURS PERFORMED	YES	NO
1. Performs hand hygiene and applies non-sterile gloves.		
2. Temporarily stops any infusing IVs for 1 minute.		
3. Scrubs adaptor with an alcohol swab and allows to air dry.		
4. Attaches vacutainer holder and leur adaptor or 10 mL syringe to adaptor and withdraws required 6-10 mL discard (unless drawing blood cultures). Discards 20mL if drawing blood for coagulation studies only.		
5. Obtains required blood tubes/samples.		
6. Removes vacutainer setup and scrubs adapter with an alcohol swab.		
7. Attaches prefilled saline syringe and flushes with a minimum of 20 mL saline (two 10mL prefilled normal saline syringes) using turbulent flush technique. Clamping during the last mL. Removes syringe.		
8. Resumes IV or locks with 5 mL heparin 100 units/mL solution.		
9. If using the syringe method, using a vacutainer, a vacutainer connector and double connector transfers blood from the syringe to the blood tubes.		
10. Disposes of supplies and performs hand hygiene.		
11. Completes requisition(s) and labels all tubes at the bedside.		
12. Documents.		

Capital Health Proficiency Standards Skills Checklist

Title: **Deaccessing**

Name:

Unit:

Evaluator:

Date:

The RN will perform the above procedure consistent with the skills checklist

CRITICAL BEHAVIOURS PERFORMED	YES	NO
1. Performs hand hygiene and applies non-sterile gloves and mask.		
2. Stops any infusing IVs.		
3. Scrubs adaptor with an alcohol swab and allows to air dry.		
4. Attaches prefilled saline syringes and flushes the system with a minimum of 20 mL saline using turbulent flush technique. Clamping during the last mL. Removes syringe		
5. Flushes with 5 mL heparin 100 units/mL, clamping during last mL.		
6. Removes transparent dressing.		
7. Stabilizes the base of the huber needle and withdraws the needle by pulling straight up, engaging the safety mechanism.		
8. Applies bandaid to site, if needed.		
9. Disposes of supplies and performs hand hygiene.		
10. Documents.		