

# Introduction to IV Therapy

BY Terry White, MBA, BSN



# Important

- It is West Virginia State Law that nursing students (LPN and RN) are forbidden to start IVs or draw blood samples on patients
- Taking this class does NOT permit you to start IVs or draw blood samples
- As a student, you are only permitted to discontinue IVs per physician orders under the supervision of your clinical instructor



# IV Basics

- Intravenous Access
  - Blood Draws
  - Medications
  - Nuclear Medicine / Radiology



# Types of IV Access

- Ordered by MD/DO/NP/PA
  - Almost always need an order first
- ER / ICU Nurses often make determination prior to written orders
  - Standard IV Access Only
  - Usually standing orders or emergencies
  - Experience
    - Physicians back up decisions
  - Nurses often recommend IV Access type to ordering provider



# Types of IV Access

- RN or LPN
  - Standard IV Access
- RN or Provider
  - External Jugular
  - PICC
  - Intraosseous
  - RNs only permitted by state and hospital regulations
    - Specialty IV Therapy RNs
    - Flight Nurses
- Physician / Radiologist
  - Central
    - Femoral
  - Hickman
  - Port



# Types of IV Access



# Types of IV Access



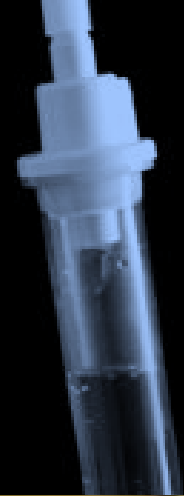
- **Peripheral IV**

- Saline Lock / Heparin Lock
- ‘Standard’ IV Access
- Common Sites
  - Hand
  - Arm
  - Head (new borns /infants)
- Less Common
  - Neck
  - Foot
  - Distal Chest



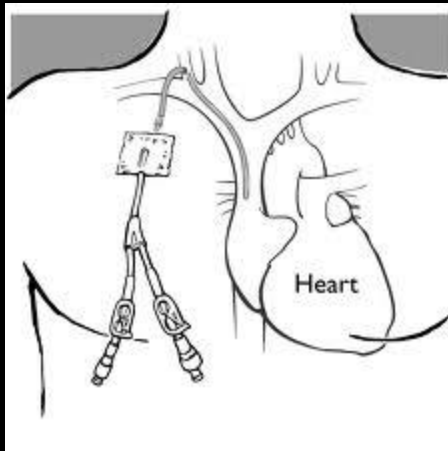
# Types of IV Access

- PICC Line
  - May be inserted by RN (certified / permitted)
  - Ultrasound Guidance
  - Incision in arm
  - Moderate time frame use
    - Chemo
    - Poor Vascular Access
      - Hx. of long term IV therapy, IV drug abuse
  - Draw Blood from line





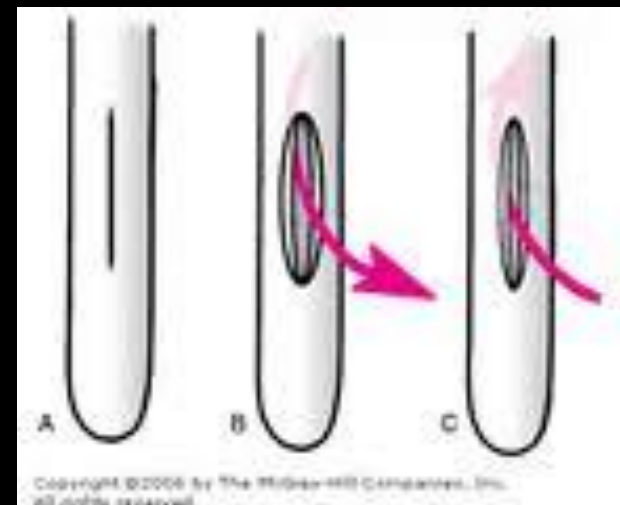
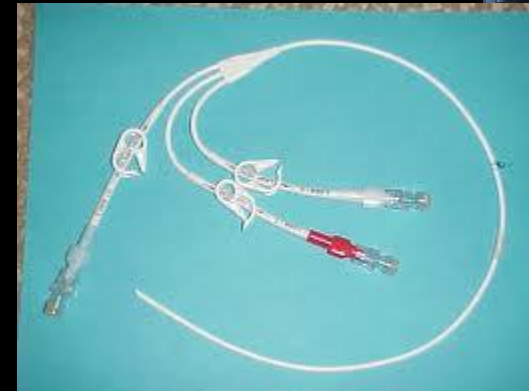
# Types of IV Access



- Hickman
  - Tunneled IV Catheter
  - Interventional Radiologist Insertion
  - Moderate time frame use
  - Draw blood from line



- Groshong Catheter
  - Tunneled
  - Interventional Radiology insertion
  - Moderate Time Frame
  - Draw Blood From Line
  - Very Similar to Hickman



# Types of IV Access



- Port Access
  - Surgical or Interventional Radiology Insertion
  - Long Term Use
  - Draw Blood from site
  - Use Huber Needle to access
  - Once accessed, continuous fluid infusion is often ordered



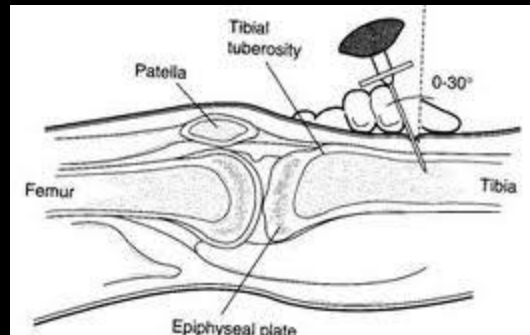
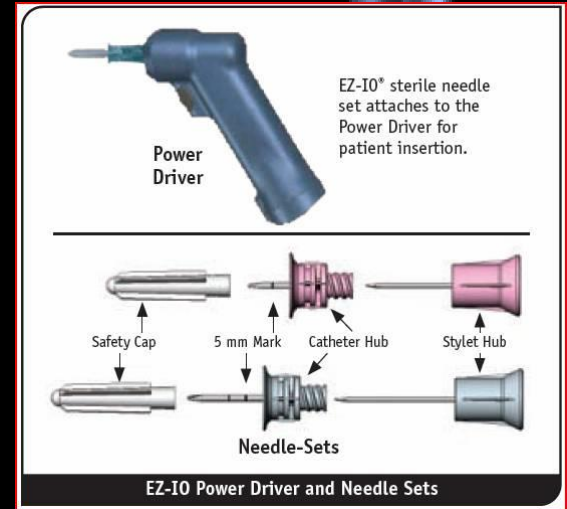
# Types of IV Access

- Central Line Access
  - Broad name used for Hickmans and Groshongs
  - Also used by physicians in the ER / ICU
    - Subclavian
    - Femoral

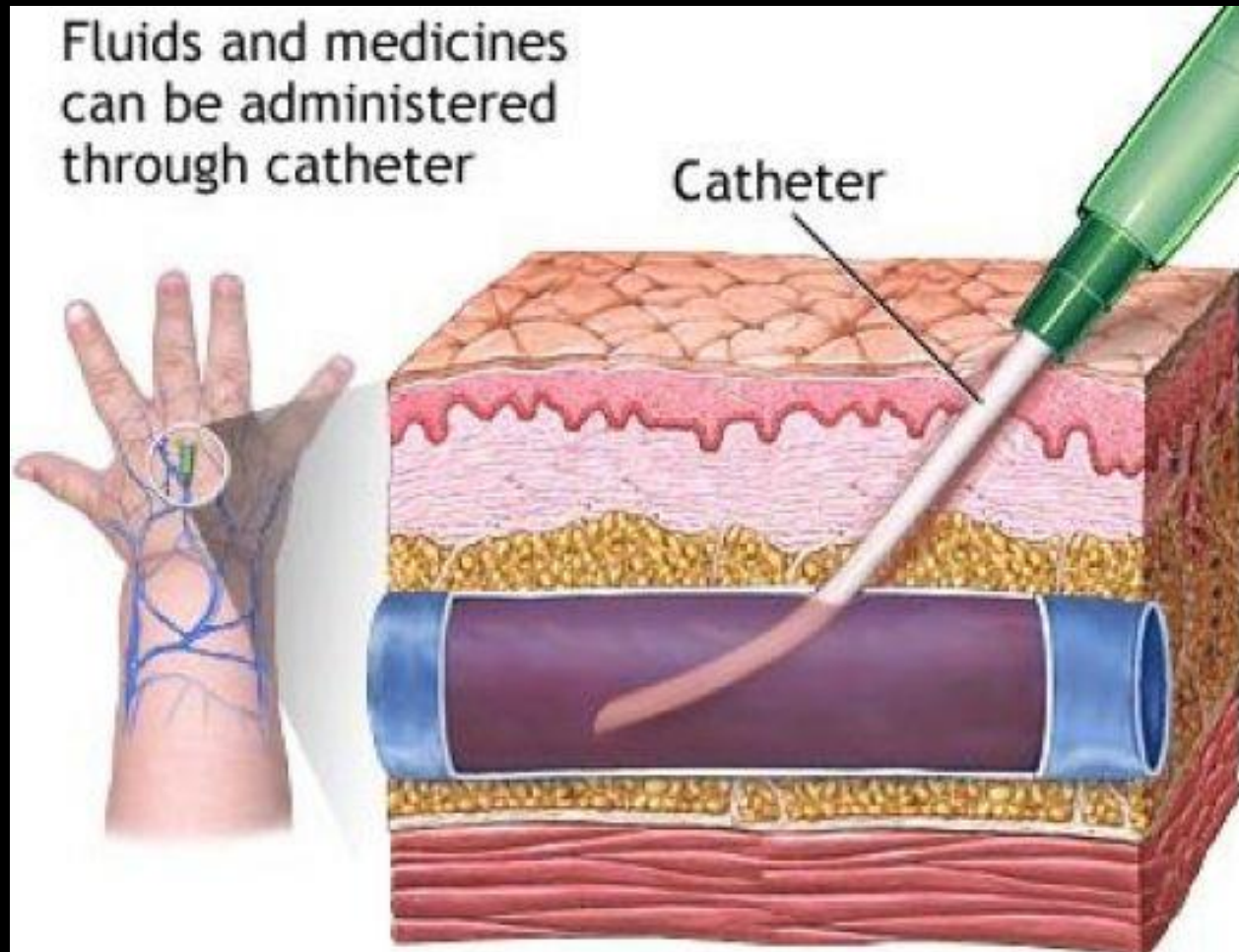


# Types of IV Access

- Intraosseous Access
  - Into the Bone
  - Most often used as a last resort in emergencies
  - Physician or flight RN initiated
  - 24 – Hour Use



# Anatomy and the IV Catheter

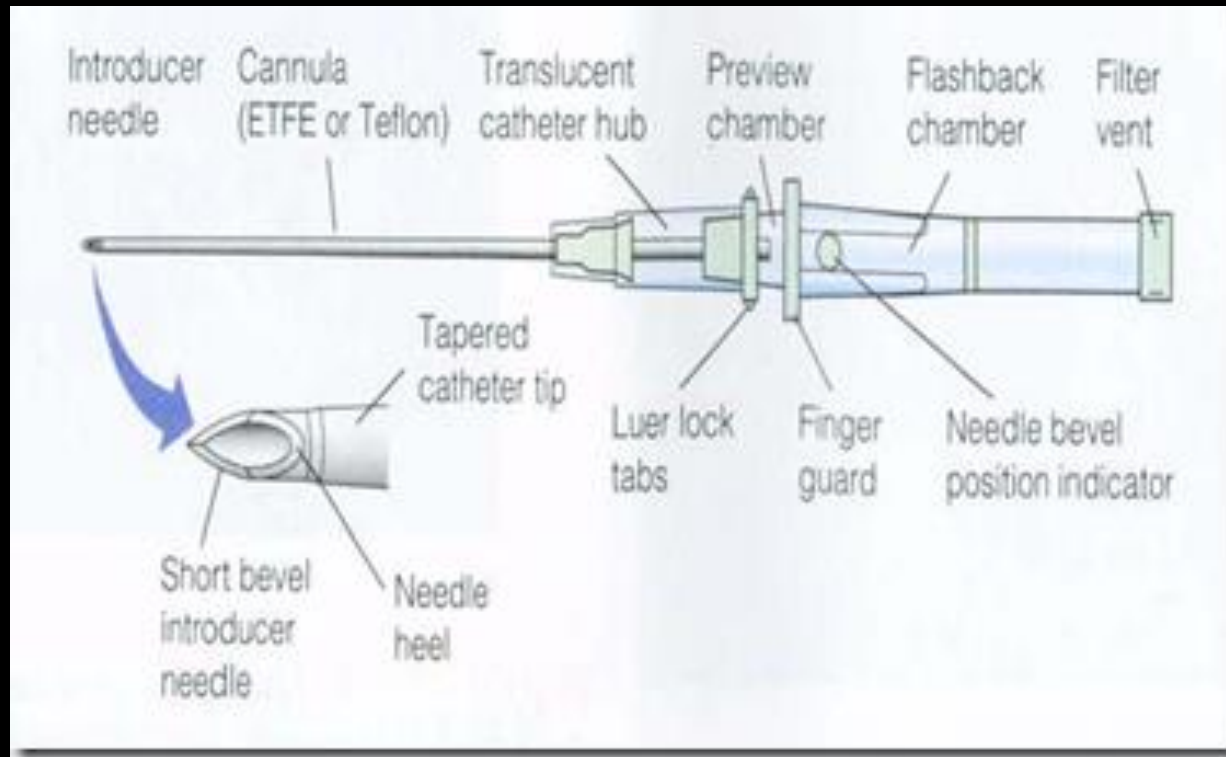
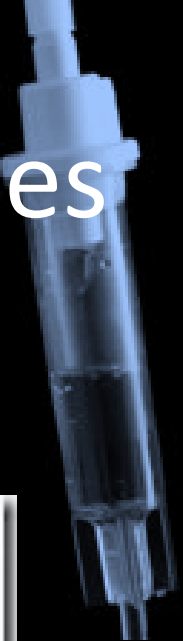


# Parts of the IV Access : Needles



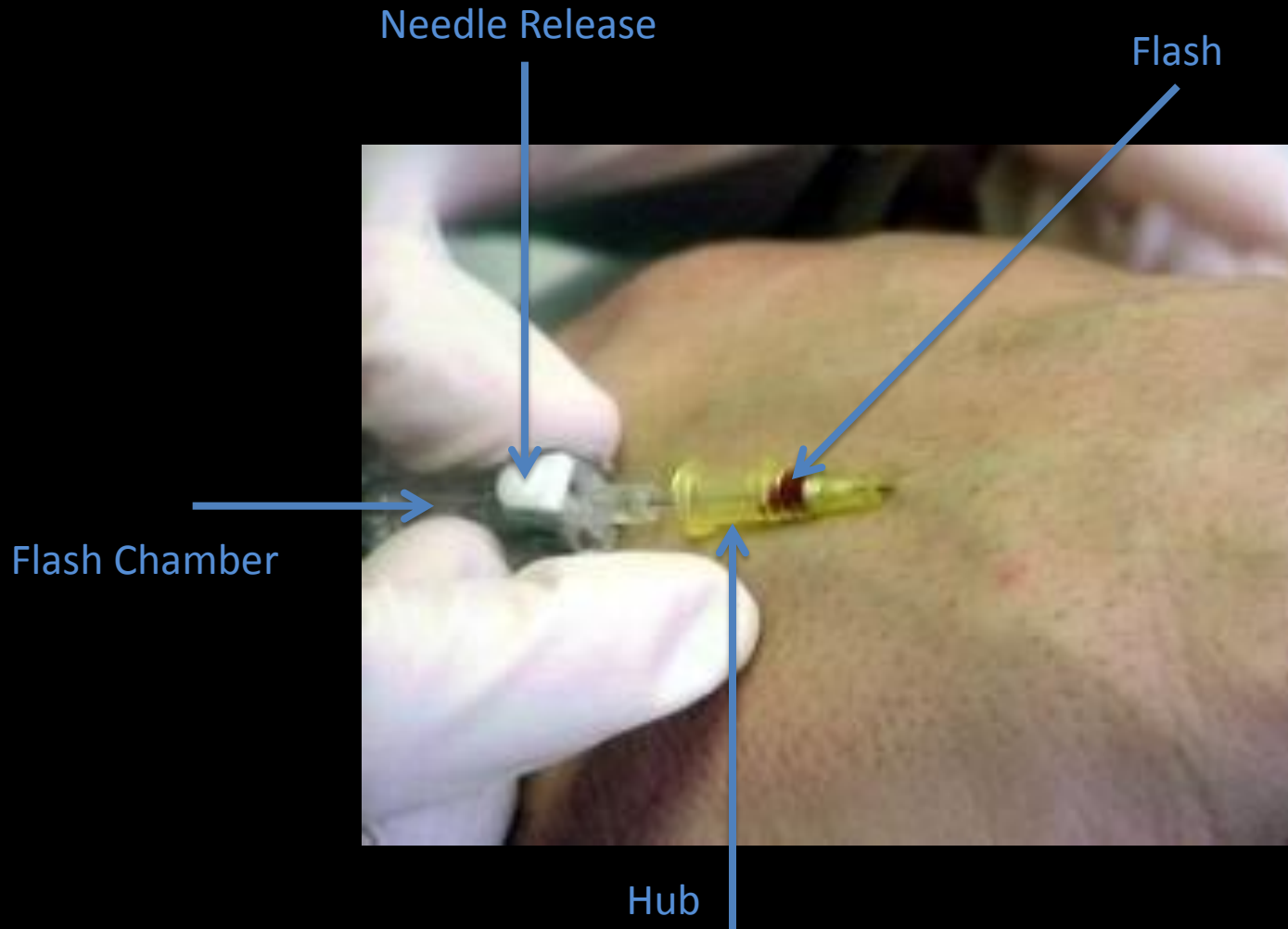


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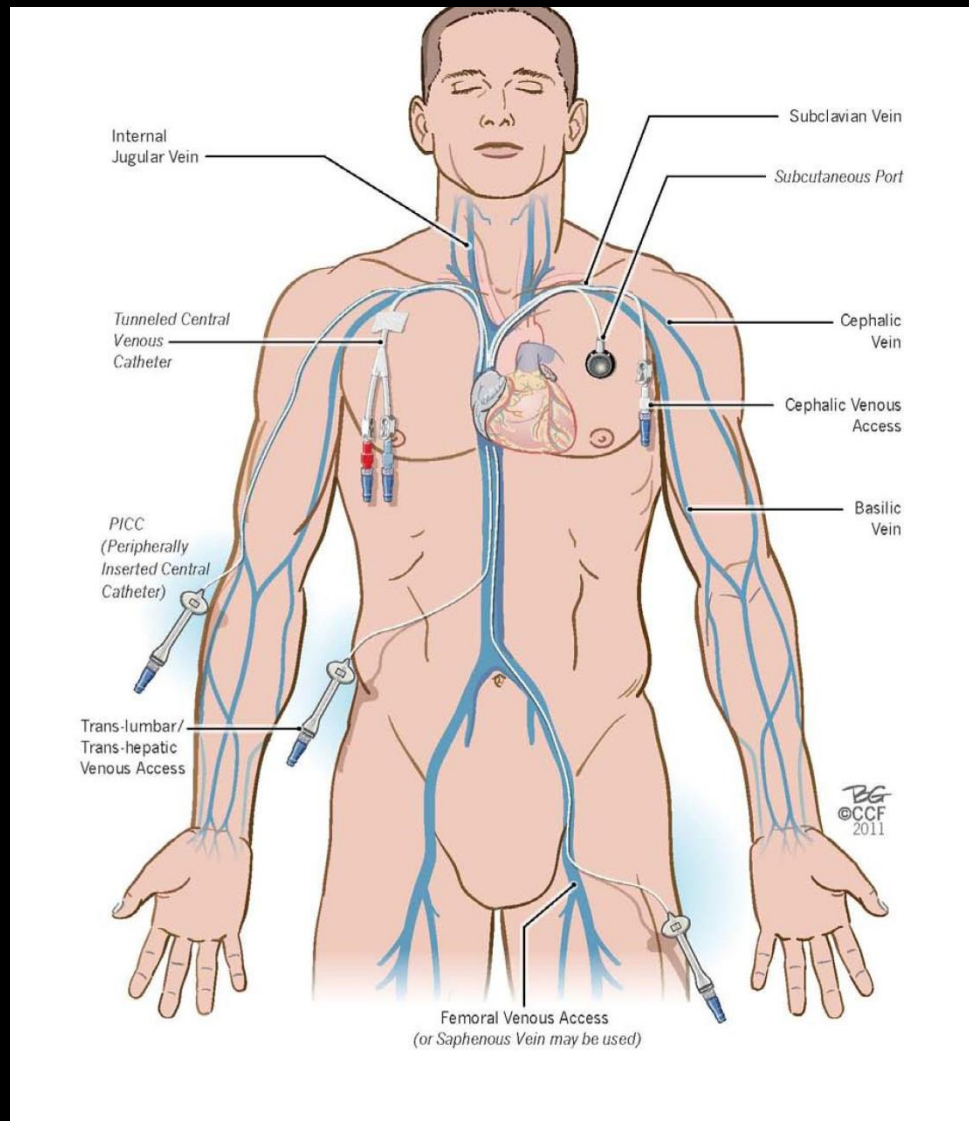
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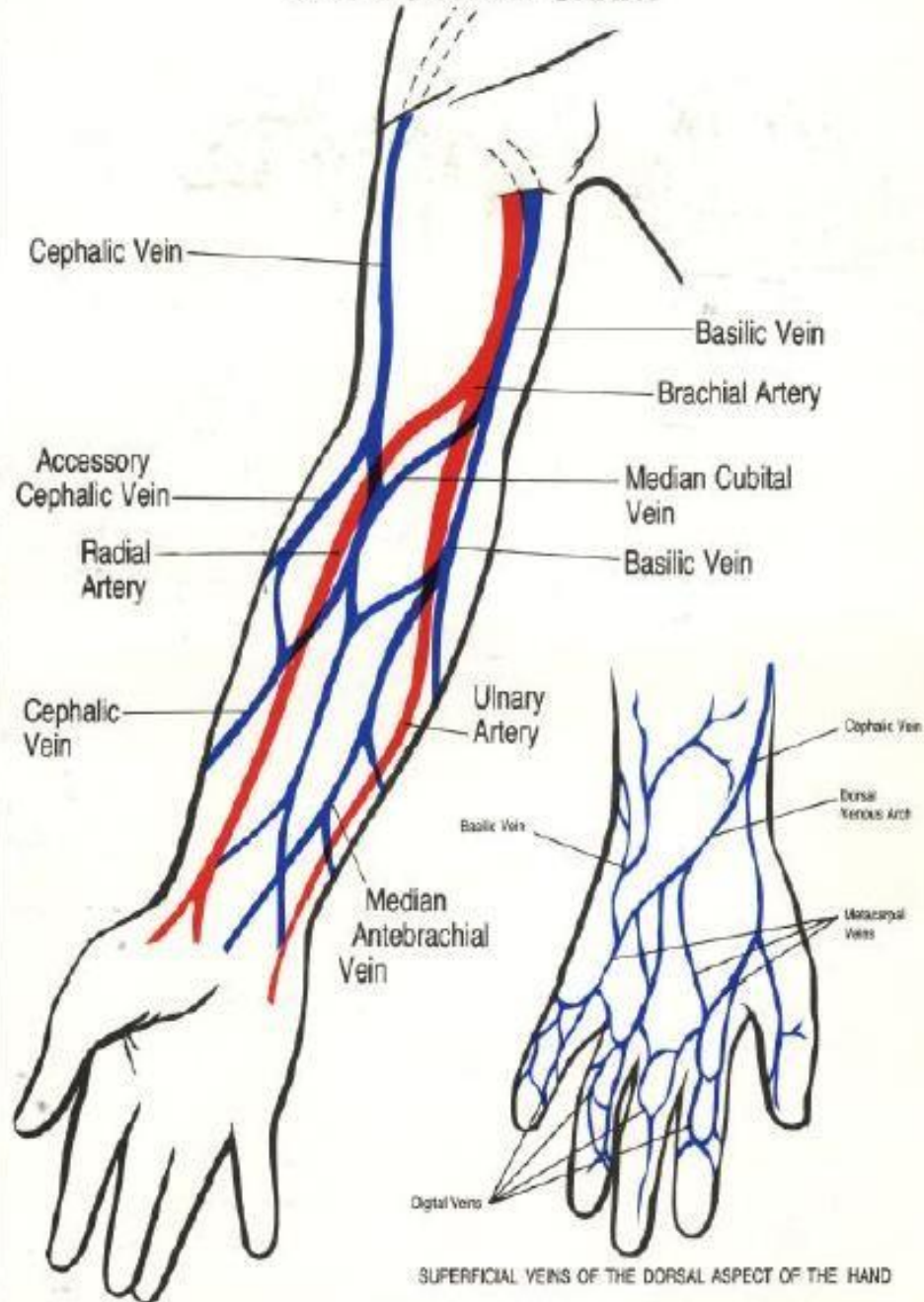
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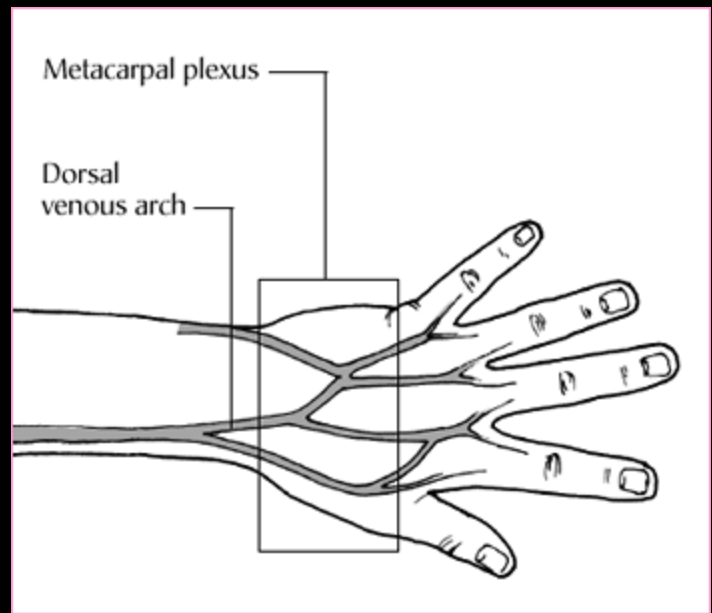
# Placement of Central Lines



# IV PLACEMENT CHART



SUPERFICIAL VEINS OF THE FOREARM



# What IV Size to Use?

- Anatomy
  - Small Veins = Small Line
- Emergencies
  - Get what you can where you can
- Testing
  - CT scans
    - Preferably #20
      - Necessary for CT Angiogram
    - Antecubital Space
- Medication Type





# Parts of the IV Access: Tubing



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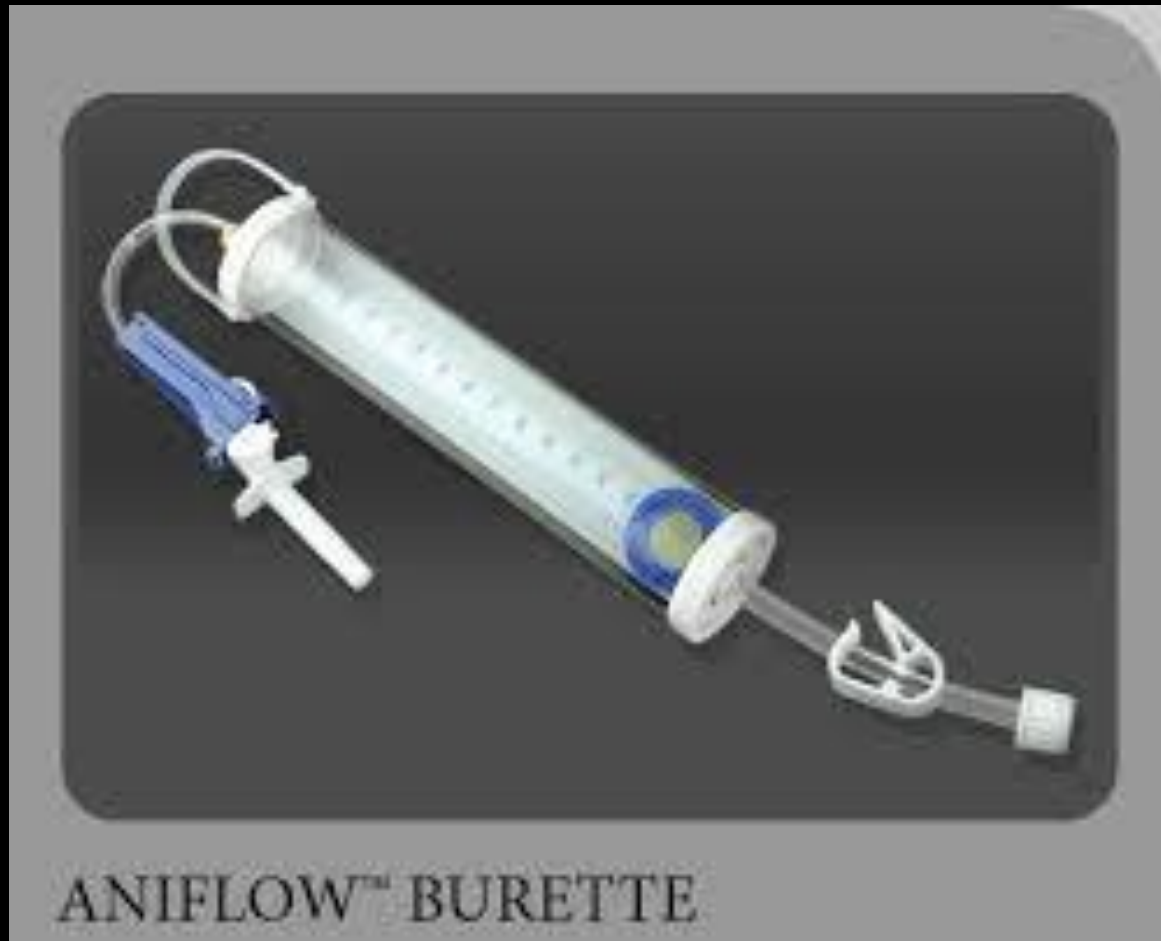


# Parts of the IV Access: End Caps





# Parts of the IV Access: Burette

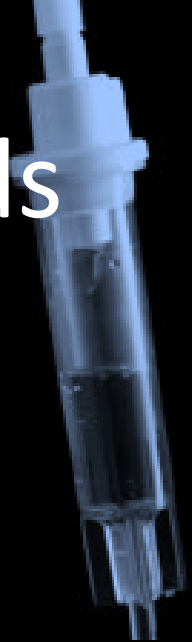


ANIFLOW™ BURETTE

# Parts of the IV Access: Dial – a - Flow



# Parts of the IV Access: Fluids



# Parts of the IV Access: IV Pumps



# Parts of the IV Access: IV Pumps





# Parts of the IV Access: Vein Finders



State-Of-The-Art Technology, Right Here, Right Now.

No More  
"Stab-in-the-Dark"  
IV Sticks !!



**The Vein  
Finder**

We now have the best vein finder for vein access in Children, Neonates, Emergency Medicine, Critical Care, Radiology and Oncology.

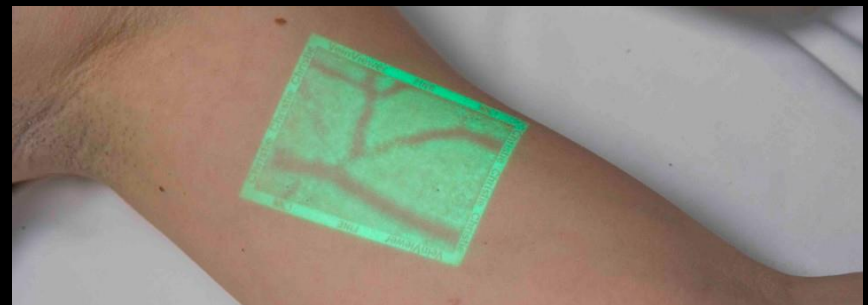
Unsurpassed imaging of varicose veins anywhere on the body for sclerotherapy and finding reticulars.

Now you can image those hard-to-find veins where veins are not visible in the standard access areas. Our latest technology can help find veins in several different areas of the body such as forearms, legs, thighs and scalp.

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# Parts of the IV Access: Cleaning Agents



- ChloraPrep

- National Standard to clean IV sites
  - Not alcohol wipes
- Mandatory for Central Line Dressing Changes
- Mandatory for Port Dressing Changes and Access



# Parts of the IV Access: Dressings





# Parts of the IV Access: Tourniquets

- Tourniquet Use
  - Reusable vs. Disposable
  - Double Tourniquets
  - Blood Pressure Cuffs
    - Different type of pressure
  - Towel Method
    - Better for your patients
  - Large, Superficial Veins
    - Tourniquets may actually cause the vein to blow



# Parts of the IV Access: Labels

**MEDICATION ADDED**

ONT. NO. BMA-12

Name		
Room		Date
Drug		Time
Amount		Use Before
Added By		
Storage		

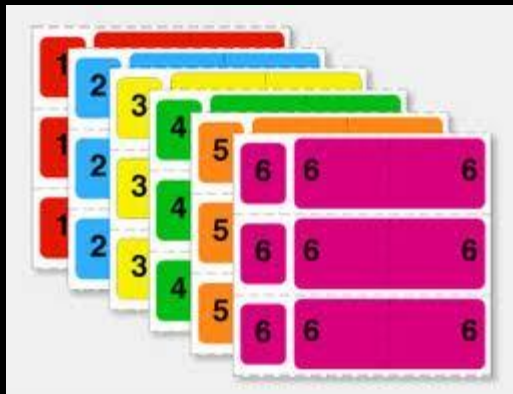
I.V. SET-72 HRS.-ONLY

START DATE \_\_\_\_\_ HR. \_\_\_\_\_

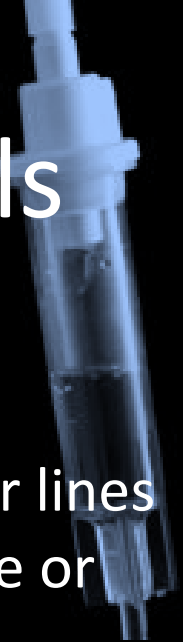
DISCARD DATE \_\_\_\_\_ HR. \_\_\_\_\_

R.N. INITIAL \_\_\_\_\_

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- IV Labels
  - Always label your lines when you change or start them
  - Always label your tubing, especially when multiple lines
    - i.e. NSS ; Insulin ; Cardizem



# Parts of the IV Access: Labels

- When you start and IV or Change the Dressing
- Always Include Initials, Date and Time

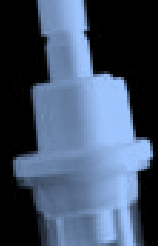


# Blood Draw

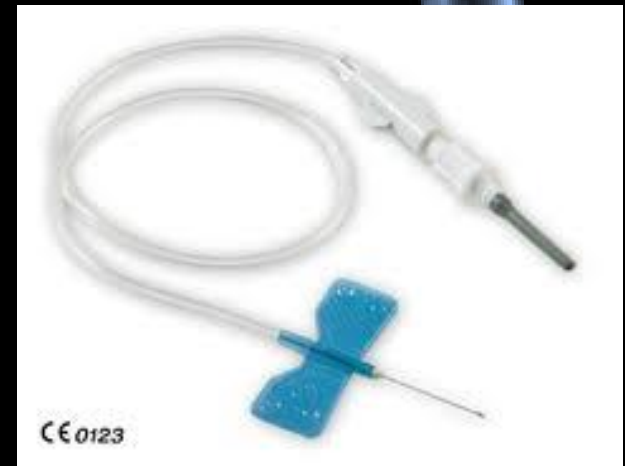
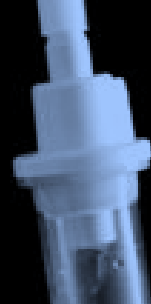
- Saline Locks / Peripheral IVs
  - May draw blood at the time of insertion
  - Do not draw blood after insertion
- Central Lines and Ports
  - May access blood draws at any time (RNs only)
    - Waste amount
    - Flushes



# Blood Draw: Components



# Blood Draw: Components





CE 0123



# Blood Draw: Labeling the Specimen

*5 - 30 - 13 1500*  
*Du*

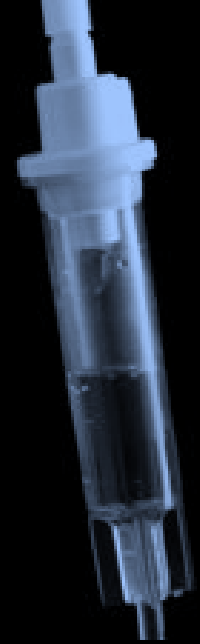
**Mendoza, Richard**  
Acct # G3058417750  
ADM: 10/27/07  
DOB: 01/19/66  
DOWNTOWN MED CTR



- Labels MUST Have:
  - Patient Name
  - Account Number
  - Birthdate
  - Today's Date
  - Time of Draw
  - Your Initials

# Dressing Changes

- Aseptic vs. Sterile
  - Aseptic
    - Peripheral Lines
  - Sterile
    - Central Lines and Ports





# Dressing Changes

- Peripheral
  - Simple Clear Window Dressing
  - Additional tape for secured placement
  - Be careful of tape allergies
  - Q 48 Hours



# Dressing Changes



- Central Lines and Ports
  - Sterile Technique
  - Mask Use
  - Cleanse site with ChloroPrep
  - Usually ordered Q7 days and PRN
  - Biopatch
  - Anchor

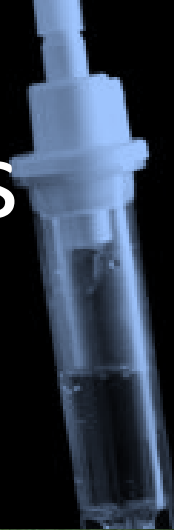


# Complications of IV Access

- Phlebitis



- Infection



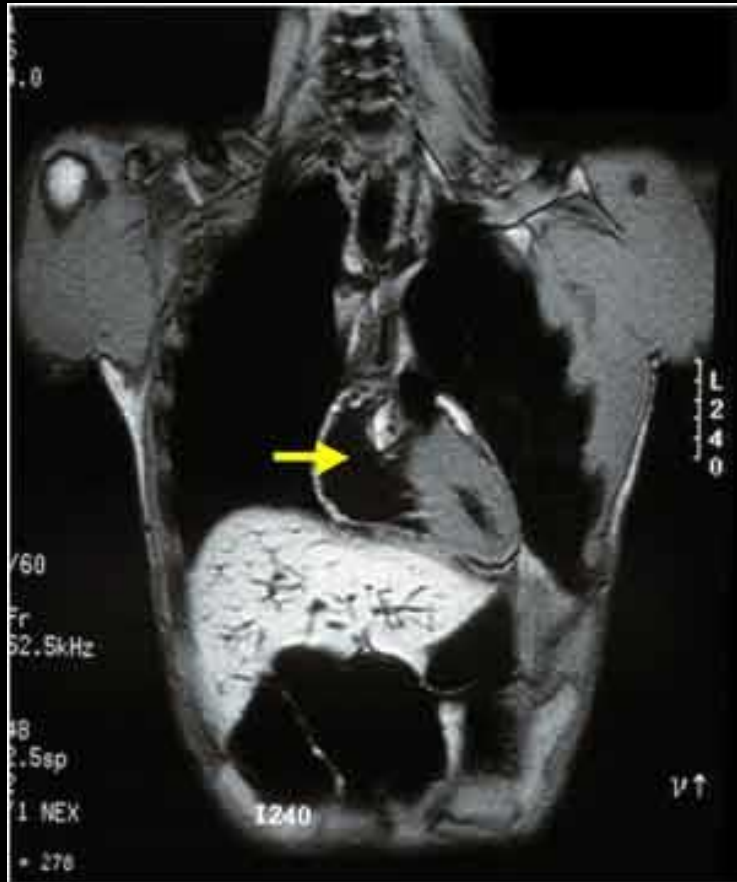
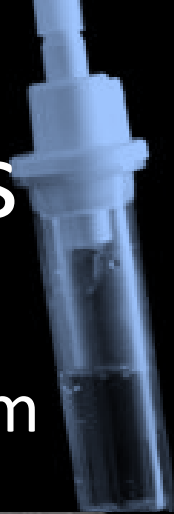
# Complications of IV Access

- Infiltration



# Complications of IV Access

- Air Embolism / PE
- Pulmonary Embolism



Break



# Practical Teaching and Demonstrations

Hands – On Training in Nursing Lab  
for IV Starts, IV Pump Priming and  
Programming and Blood Draws

