

# **Infusion Therapy Educational Program**

## **IV Medication Administration**

### **ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY**

#### **General Knowledge**

Antibiotic Therapy is the administration of medications, specifically designed to destroy infectious microbes.

#### **Examples:**

- **Ampicillin** – To be administered every 4-6 hours, good against gram-positive and gram-negative bacteria. Ampicillin has a short half-life.
- **Ceftriaxone** – To be administered once a day, good against gram-positive and gram-negative aerobic and anaerobic bacteria. Ceftriaxone has a long half-life.
- **Vancomycin** – typically administered one to two times a day, good against gram-positive bacteria, periodic labs draw for kidney function. Peak and trough level are necessary.

## **ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY**

### **General Knowledge**

Administration of intravenous antibiotics maintains consistent medication levels in the blood system, thus destroying organisms quickly.

#### **Half-Life of a medication**

- The half-life of a medication is the amount of time necessary for the concentration of the drug in the bloodstream of the body to be reduced by one-half. The time it will take for the drug to reach a therapeutic level, or full effectiveness, in the system is based on that half-life.
- The half-life varies depending on the antibiotic being used. Some antibiotics have a short half-life, like 4-6 hours for ampicillin, and some have longer half-life, ranging from 8-12 hours and more.

## **ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY**

### **General Knowledge**

#### **Half-Life of an antibiotic**

- The half-life will determine the schedule of the antibiotic. For a half-life of 4-6 hours the schedule will be every 4-6 hours in order to maintain a therapeutic level of medication in the bloodstream.
- If an antibiotic has a half-life of 8 hours the schedule will be to administered every 8 hours.
- It is very important to respect the patient schedule in order to maintain therapeutic level of the antibiotic in the bloodstream and effectively fight the infection.

## **ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY**

### **General Guidelines**

Intravenous medications that are to be administered must be listed on the facility formulary.

**Before starting your patient on IV antibiotics the nurse needs to know:**

- The patient's allergies
- The allergy and anaphylaxis protocol.
- The specific antibiotic side effects.
- Example: Vancomycin may cause Red Man's Syndrome (not an allergic reaction)

## **ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY**

### **General Guidelines**

- IV tubing needs to be changed every 24 hours for intermittent antibiotic administration.
- Label the tubing initially and every time it is changed with the date, time, and initials.
- An IV medication label should supply pertinent information including:
  - Patient's Name, Room Number
  - Solution Information
  - When Infusion Started
  - Preparation Time & Date
  - Added Drugs & Strengths
  - Expiration Date

## ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY

### General Guidelines

- Also Label the IV antibiotic bag with the date, time, and initials of the nurse.
- Each antibiotic requires a separate I.V. tubing.
- Follow flushing protocol per infusion device.
- Monitor patient closely during infusion according to facility policy.

## ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY

### General Guidelines

#### Recommendations for IV access

- **Peripheral Catheter** for non-vesicant and non-irritant antibiotic and a duration for therapy of 5 days or less.
- **Midline Catheter** for non-vesicant and non-irritant antibiotic and a duration for therapy of 6 days to 4 weeks.
- **Central Line** for vesicant or irritant medication and there is no limiting duration. Some central lines can last for years (e.g. implanted port).

## **ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY**

### **IV Antibiotics Secondary Piggyback Infusion**

#### **Instructions:**

1. First in order to infuse an antibiotic as a secondary piggyback infusion, the patient must already have a primary continuous infusion running. Verify with the pharmacist for compatibility.
2. Verify the physician's order and compare the order with the label on the antibiotic bag.
3. Inspect bag for expiration date, cloudiness, particulate matter and leaks. IV fluid should be clear.
4. Gather the supplies:
  - IV piggyback bag (labeled with initials, date and time)
  - Secondary IV Administration Set (labeled with initials, date and time)
  - Clean gloves
  - Alcohol wipes

## **ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY**

### **IV Antibiotics Secondary Piggyback Infusion**

#### **Instructions:**

5. Perform hand hygiene.
6. Open the secondary infusion package and remove the tubing and the bag hanger.
7. Remove the paper and close the rolling clamp.
8. Open the port of entry on the piggyback bag. Be careful not to contaminate the port of entry.
9. Remove the spike tip protector of the IV tubing then spike your bag.
10. Fill the drip chamber half full.
11. Open the roller clamp slowly to prime the tubing.
12. Hang the piggyback on the IV pole then lower the primary infusion bag using the bag hanger.

## ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY

### IV Antibiotics Secondary Piggyback Infusion

#### Instructions:

13. Clean the proximal connector of the primary infusion tubing using alcohol swab (clean for 15-30 seconds) then connect the piggyback to the primary infusion set using the proximal connector.
14. Program your pump for secondary infusion following the manufacturer's instructions.
15. Open the rolling clamp of the piggyback tubing and start the secondary program on the pump.
16. Observe the drip chamber of the piggyback to confirm that it is running.
17. Monitor your patient following your facility policy and procedures.

## ADMINISTERING INTRAVENOUS ANTIBIOTIC THERAPY

**This is what your piggyback setup should look like. The pump might be different depending on what your facility is using.**

- Primary continuous infusion bag
- Piggyback infusion bag
- Primary IV infusion set
- Secondary IV infusion set
- Bag hanger
- IV pump
- Proximal Connector

