Simulations for Clinical Excellence in Nursing Services

Infusion: IV Start and Antibiotics
Instructor Information

**Patient Name:** Right, Donna

**Simulation Developer(s):** Melissa Brickner, Bridgett Everett, Debra A. Mosley, Beverly Snyder-Desalles, and Judy Young

**Scenario Purpose:**
- To assist nursing staff to effectively initiate intravenous access and administer antibiotic infusion therapy

**Learner(s):**
- Registered Nurses (RN), Licensed Practical Nurses (LPN), Unlicensed Assistive Personnel (UAP)
- Others as desired, depending on facility protocols
- Recommend no more than 6 learners (3 of which can be observers)

**Time Requirements:**
- **Setup:** 5 minutes
- **Scenario:** 25 minutes
- **Debrief:** 25 minutes
- **Reset/Breakdown:** 5 minutes

**Confederate(s):**
- Family member (optional)

**Scenario Prologue:**
- 34 y/o female presents for her intravenous antibiotic infusion for the treatment of osteomyelitis of the right tibia positive for staphylococcus aureus
- The simulation begins when the learners are receiving report from the nurse

**Patient information:**
- **General:** Alert, oriented and calm
- **Weight/Height:** 113.6kg (250lbs) 172.7cm (68in)
- **Vital Signs:** BP 96/60; Temp 97.3; HR 98; RR 20; O2 Sat 96%
- **Pain:** 2/10 in right lower extremity
- **Neurological:** Unremarkable
- **Respiratory:** Eupneic
- **Cardiac:** Unremarkable
- **Gastrointestinal:** Unremarkable
- **Genitourinary:** Unremarkable
- **Musculoskeletal:** Osteomyelitis in the right lower extremity
- **Skin:** Pin point wound on right lower extremity
- **Past Medical History:** Asthma, osteomyelitis of the right tibia Positive for staphylococcus aureus
- **Past Surgical History:** Tonsillectomy with adenoidectomy, s/p open reduction of a fracture of the right tibia related to motor vehicle accident

**Medications:**
- Ipratropium bromide inhaler
- 2 puffs 3 times a day
- Multivitamin daily

**Allergies:**
- Sulfa

**Green Text Confederate**
- Family member (optional)

**Red Text Physiology Change**
Learning Objectives

**Patient Name:** Donna Right

**Simulation Developer(s):** Melissa Brickner, Bridgett Everett, Debra A. Mosley, Beverly Snyder-Desalles, and Judy Young

**Scenario Purpose:**

- Assist nursing staff to effectively initiate intravenous (IV) access and administer antibiotic infusion therapy

**Pre-Session Activities:**

- Complete pertinent training on initiating IV infusions and antibiotic therapy
- Review any policies and protocols on initiating IV infusions and antibiotic therapy

**Potential Systems Explored:**

- What standardized protocols currently exist to establish safety with initiating and monitoring IV and antibiotic infusion therapy?
- When should the healthcare provider consider stopping an IV and/or antibiotic infusion?
- What factors are important to consider prior to initiating IV and/or antibiotic therapy?
- Which staff members are qualified to initiate IV and/or antibiotic infusion therapy?
- What facility specific documentation is required when initiating and/or monitoring IV infusions and antibiotic therapy?
- How would this process differ for an inpatient versus an outpatient?
- What contraindications should be considered for the patient receiving IV and/or antibiotic infusion therapy?
- What complications is the patient receiving IV and/or antibiotic infusion therapy at risk for developing?

**Scenario Specific Learning Objectives (Knowledge, Skills, and Attitudes = K/S/A):**

**Learning Objective 1:** Initiate Intravenous Infusion therapy according to protocol

- **S**- Initiate intravenous access using aseptic technique per facility protocol
- **S**- Utilize facility specific equipment/supplies appropriately

**Learning Objective 2:** Demonstrate the steps required to initiate and monitor intravenous antibiotic therapy

- **S**- Perform the rights of medication administration taking care to check for allergies per facility protocol
- **S**- Assemble the required equipment to administer intravenous antibiotic therapy
- **S**- Initiate intravenous antibiotic therapy per protocol

**Learning Objective 3:** Demonstrate effective communication when caring for the patient receiving intravenous antibiotic infusion therapy

- **S**- Explain the procedure to the patient/family at a level they can understand
- **S**- Advise the patient/family to call for assistance should an adverse reaction occur at a level they can understand
- **S**- Complete facility specific documentation of actions taken

**Debriefing Overview:**

- Ask the learner(s) how they feel after the scenario
- Have the learner(s) provide a summary of the scenario from a healthcare provider/clinical reasoning point of view
- Discuss the scenario and ask the learners what the main issues were from their perspective
- Ask what was managed well and why.
- Ask what they would want to change and why.
• For areas requiring direct feedback, provide relevant knowledge by stating “I noticed you [behavior]…” Suggest the behavior they might want to portray next time and provide a rationale. “Can you share with us?”
• Indicate closing of the debriefing but provide learners with an opportunity to voice one or two take-aways that will help them in future practice
• Lastly, ask for any outstanding issues before closing the debrief

**Critical Actions/Debriefing Points:**
1. Verify orders with another nurse
2. Perform patient education
3. Perform hand hygiene
4. Utilize aseptic technique
5. Use personal protective equipment
6. Verify allergies including to tape, adhesives, and skin antiseptic
7. Initiate IV per facility policy
8. Allow 20 seconds for antiseptic to dry
9. Perform rights of medication administration
10. Prepare antibiotic taking care not to allow fluid to drip from the end of the tubing
11. Initiate infusion utilizing facility specific infusion equipment per protocol
12. Inform patient to notify the nurse of any adverse reactions
13. Complete documentation to include what was done and how the patient tolerated it
**Simulation Set-Up**

**Patient Name:** Donna Right  
(ALS Mannequin and IV task trainer)

**Simulation Developer(s):** Melissa Brickner, Bridgett Everett, Debra A. Mosley, Beverly Snyder-Desalles, and Judy Young

**Room Set-up:**
- Set up like an outpatient or inpatient room

**Patient Preparation:**
- The patient is wearing street clothes (outpatient)
- The patient is wearing a hospital gown (inpatient)
- Place a Band-Aid or 2 x 2 dressing with tape to cover a pin point wound on the right shin

**Have the following equipment/supplies available:**
- Gloves
- Stretcher/recliner
- IV catheters (22g or 20g)
- IV start supplies (tourniquet, tape, clear occlusive dressing, label, antiseptic skin prep, 2x2 gauze pads, etc.)
- Saline lock with luer-lock female adapter
- IV primary tubing
- Luer-lock male adapter (2)
- Piggyback bag for mixing antibiotic (if applicable)
- Medication label for intravenous (IV) Ceftriaxone 2 G
- Syringe with needle for mixing antibiotic (if applicable)
- Diluent for mixing antibiotic (if applicable)
- IV saline flush
- Band-Aid or 2 x 2 dressing and tape
- IV pump (if applicable)
- Bedside table

**Medications:**
- Ceftriaxone 2 G IV
  **Calibration will be required if using radiofrequency identification (RFID)**

**Note:** 5.8 Simpad software update is required to load scenarios  

Scenarios may be used with Laerdal or LLEAP software

**Scenario Supplements:**
- Confederate scripts
- Confederate and learner name tags
- Patient identification bands for the ALS Mannequin and task trainer
- Nurses notes
- Orders
- Medication labels for intravenous (IV) Ceftriaxone 2 G
- ZZ test patient/Demo patient in CPRS (if desired)
Simulations for Clinical Excellence in Nursing Services

**Initial State:**
Mental Status: Alert and oriented
Sp02: 95%
BP: 96/60
HR: 98
RR: 20
Pain level: 2/10 right lower extremity
Skin: Band-Aid or 2x2 to right tibia covering pinpoint wound. No drainage.

**Did not...**
...perform patient education
...verify orders per protocol
...gather appropriate supplies
Patient states “Wait! Slow down!”

**Did not...**
...perform hand hygiene
...verify allergies with the patient
...utilize aseptic technique
...follow facility specific protocol
...label IV site
Patient states “You are making me nervous the way you rush things.”

**Did not...**
...verify orders with another nurse or per protocol
...utilize aseptic technique
...wear PPE
...initiate infusion at ordered rate
...inform patient to notify nurse/ring call bell in case of adverse reaction
Patient states “Wow! You move quickly. The other nurses took so many other steps. I wonder why.”

**Critical Actions/Debriefing Points:**
- Verify orders with another nurse
- Perform patient education
- Perform hand hygiene
- Utilize aseptic technique
- Use personal protective equipment
- Verify allergies including to tape, adhesives, and skin antiseptic
- Initiate IV per facility policy
- Allow 20 seconds for antiseptic to dry
- Perform rights of medication administration
- Prepare antibiotic taking care not to allow fluid to drip from the end of the tubing
- Initiate infusion utilizing facility specific infusion equipment per protocol
- Inform patient to notify the nurse of any adverse reactions
- Complete documentation to include what was done and how the patient tolerated it

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**Flowchart**

Thirty-four (34) year-old female requiring her last intravenous antibiotic infusion for the treatment of osteomyelitis of the right tibia positive for staphylococcus aureus after an open fracture due to a motor vehicle accident three months ago.

- Introduces self
  - Verifies orders per protocol
  - Performs patient education
  - Gathers supplies to initiate IV and antibiotic infusion per protocol

- Performs hand hygiene
  - Explain the procedure to the patient
  - Puts on personal protective equipment (PPE)
  - Verifies allergies with the patient (i.e. tape, adhesives, antiseptic solutions, etc.
  - Applies tourniquet
  - Cleanses site, taking care not to recontaminate; allowing it to dry for 20 seconds
  - Initiates IV utilizing aseptic technique per protocol
  - Disposes of needle in appropriate receptacle
  - Ensures IV is patent with saline flush
  - Labels IV site per protocol

- Verifies antibiotic order with another nurse per protocol
  - Verifies antibiotic type, dose, and form matching documented order
  - Prepares antibiotic for infusion
  - Performs rights of medication administration
  - Checks for allergies per facility protocol
  - Spikes and primes antibiotic using aseptic technique taking care not to allow fluid to drip from the end of the tubing
  - Scrubs port with antiseptic allowing 20 seconds to dry
  - Initiates infusion utilizing facility specific infusion equipment per protocol
  - Informs the patient to notify the nurse/ring call bell in case of any adverse reactions in a way the patient can understand

- Discontinues IV when infusion is complete wearing gloves per facility protocol
  - Performs hand hygiene
  - Completes documentation including what was done and how the patient tolerated it
Supplements

Confederate Scripts
Confederate Name Tags
Patient Identification Band
Nurses Notes
Orders
Medication Labels
Confederate Scripts

Donna Right: Patient

**Medical/Surgical History:** Asthma, osteomyelitis of the right tibia positive for staphylococcus aureus. Tonsillectomy with adenoidectomy, s/p open reduction of a fracture of the right tibia related to motor vehicle accident

**Medications:** Multivitamin daily and Ipratropium bromide inhaler 2 puffs 3 times a day

**Allergies:** Sulfa

- If the learner(s) do not perform patient education; verify orders per protocol; gather appropriate supplies, the patient will state “Wait! Slow down!”
- If the learner(s) do not perform hand hygiene; verify allergies with the patient; utilize aseptic technique; follow facility specific protocol; label IV site, the patient will state “You are making me nervous the way you rush things.”
- If the learner(s) do not verify orders with another nurse; utilize aseptic technique; wear PPE; initiate infusion at ordered rate; inform patient to notify nurse/ring call bell in case of any adverse reaction, the patient will state “Wow! You move quickly. The other nurses took so many other steps. I wonder why.”
Confederate Name Tags

Donna Right: Patient
Patient Identification Band

Right, Donna
Dr. M. Santana
Age: 34
000-00-0000
Allergic: Sulfa
Nurses Notes

Date: Today
Patient Name: Donna Right
Mode of Arrival: Personally owned vehicle
Accompanied by: Self

Chief Complaint: 34 y/o female presents for her intravenous antibiotic infusion for the treatment of osteomyelitis of the right tibia positive for staphylococcus aureus

Active Problems: Asthma. Osteomyelitis of the right tibia positive for staphylococcus aureus.

Patient information:
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- Weight/Height: 113.6kg (250lbs) 172.7cm (68in)
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- Pain: 2/10 in right lower extremity
- Neurological: Unremarkable
- Cardiac: Unremarkable
- Respiratory: Unremarkable
- Genitourinary: Unremarkable
- Gastrointestinal: Unremarkable
- Musculoskeletal: Osteomyelitis of the right tibia
- Skin: Pinpoint wound on right tibia
- Past Medical History: Asthma, osteomyelitis of the right tibia positive for staphylococcus aureus
- Past Surgical History: Tonsillectomy with adenoidectomy, s/p open reduction of a fracture of the right tibia related to motor vehicle accident

SCREEN FOR ABUSE/NEGLECT: N/A
Does the patient show any evidence of abuse? No
Does the patient feel safe in his/her current living arrangements? Yes
Suicidal or Homicidal Ideation in the past two weeks? No
Is the patient currently enrolled in primary care? Yes

Diagnostic Procedures Ordered:
( ) X-Ray
( ) Labs
( ) None
( ) EKG
( ) Head CT without contrast
( ) Other

Triage Classification: Emergency Severity Index

Patient Disposition: Medical-Surgical Unit

Signed by: /DM/

Medications:
- Ipratropium bromide inhaler 2 puffs 3 times a day
- Multivitamin daily

Allergies:
- Sulfa
### Patient Information

- **Right, Donna**
- **Dr. M. Santana**
- **Age:** 34
- **Social Security #:** 000-00-0000
- **Allergies:** Sulfa
- **Weight:** 75kg (165lbs.)
- **Height:** 172.7cm (68in)

### Orders

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Osteomyelitis of the right tibia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
<td>Stable</td>
</tr>
<tr>
<td>IV Therapy</td>
<td>Saline Lock</td>
</tr>
<tr>
<td></td>
<td>Discontinue Saline Lock after antibiotic infusion is complete</td>
</tr>
<tr>
<td>Medications</td>
<td>Ceftriaxone 2G IVPB over 30 minutes</td>
</tr>
</tbody>
</table>

**DO NOT WRITE IN THIS SPACE**
**Medication Labels**

- **For I.M. Administration**: Reconstitute with 4.2 mL of 1% Lidocaine Hydrochloride Injection (USP) or Sterile Water for Injection (USP). Each 1 mL of solution contains approximately 350 mg equivalent of ceftriaxone.

- **For I.V. Administration**: Reconstitute with 19.2 mL of an I.V. diluent specified in the accompanying package insert. Each 1 mL solution contains approximately 100 mg equivalent of ceftriaxone. Withdraw entire contents and dilute to the desired concentration with the appropriate I.V. diluent.

- **USUAL DOSAGE**: See package insert.
- **Storage Prior to Reconstitution**: Store powder at 20°C to 25°C (68°F to 77°F) [see USP Controlled Room Temperature].
- **Protect From Light.**
- **Storage After Reconstitution**: See package insert.

**Single-Use Vial**

- ceftriaxone for injection, USP
- 2 g/vial
- Rx only

**Name** ___________  **ID** ___________  
**Drug** ___________  **Conc** ___________  
**Dose/vol** ___________  **Route** ___________  
**Date/Time** ___________  **Exp.** ___________  

**Manufactured by Pfizer Labs**

**Made in India**

**Distributed by Pfizer Inc., NY, NY 10017**

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References


