



Eliana Ruiz

Age: 86

Weight: 55 kg

Height: 174 cm

Overview

Synopsis

The physiological values documented in this SCE indicate appropriate learner actions and timely interventions. If learners do not act as anticipated, differences will be encountered.

Best practices have been included in this SCE, but since interventions may vary by region, you may wish to include medications, treatments, and standards of care that reflect current practice in your region. No intentional errors, such as incorrect treatments or medication doses, were included in this SCE.

Since preparation is key to a successful simulation experience, you should read through the SCE in its entirety before beginning the simulation. You will find suggestions in the **Facilitator Notes** to assist you in setting up the environment and manikin moulage.

Synopsis:

The learner will be providing care to an 86-year-old Hispanic female being admitted to the Medical-Surgical Unit with a non-healing wound on her right upper leg.

- One week ago, a femoral-popliteal bypass graft was performed
- She is diabetic
- She injured her left ankle today by tripping on a curb on the way to the hospital
- She has a frequent, non-productive cough
- She is anxious about not being able to care for herself at home
- She lives alone but has a daughter close by
- She has no insurance

This Simulated Clinical Experience (SCE) has four states that are *transitioned manually*. With manual transitions, the facilitator should advance to the applicable state when appropriate interventions are performed.

Synopsis Continued

In **State 1 Initial Assessment**, the learner is presented with a patient who is febrile and exhibiting other signs of infection. She has a non-productive cough. The patient complains of "throbbing" pain at the graft site. She rates the pain 6 out of 10. Upon removing the old dressing at the graft site, the learner discovers the presence of greenish drainage oozing from the site. She is incontinent of urine and she appears anxious. She complains of tenderness to her left ankle and asks if she can soak her foot in hot water to make it feel better.

- HR in the 80s
- BP in the 140s/90s
- RR in the 20s
- SpO2 in the mid 90s on room air
- Temperature of 38.6C
- Breath sounds demonstrate crackles bilaterally

The learner is expected to:

- Complete an admission assessment
- Ensure the sputum culture is obtained
- Administer medications
- Insert a urinary catheter
- Check the blood glucose
- Perform a sterile wet-to-moist dressing change to the graft site
- Explain the rationale for not soaking her foot in hot water

When the learner requests the blood glucose and chest x-ray results, the facilitator should provide the following report:

- Blood glucose 105
- Chest x-ray: Significant for right lower lobe pneumonia

The learner is expected to:

- Notify the healthcare provider of the abnormal assessment and diagnostic findings

If pain is reassessed, the patient states her pain is decreased and rates it as 2 out of 10.

Synopsis Continued

State 2 Hypoglycemia, occurring 11 hours post-admission, the patient becomes hypoglycemic. She complains of feeling hungry, nervous and having a headache. She states, "*I just don't feel right.*" She reports she did not eat much for dinner because she was not hungry and she was in pain.

- HR is in the 90s
- BP is in the 130s/90s
- RR is in the 20s
- SpO2 is in the mid 90s on room air
- Skin is cool and clammy
- Breath sounds demonstrate crackles bilaterally

When assessed, the facilitator should report the patient's blood glucose is 58

The learner is expected to:

- Recognize the signs and symptoms of hypoglycemia
- Implement appropriate treatment
- Notify healthcare provider
- Reassess the blood glucose in 15 minutes.

With appropriate treatment, the patient's hypoglycemia is resolved.

State 3 Patient Treated, The patient reports feeling better.

- HR decreases to the 70s
- BP decreases to the 120s/80s
- RR is in the teens
- SpO2 is in the mid 90s on room air
- Skin is warm and dry
- Breath sounds demonstrate crackles bilaterally

When asked, the facilitator should give the following report:

- Blood glucose is 105.

Synopsis Continued

State 4 Report to Next Shift begins the morning after admission with a change of shift report.

- HR is in the 70s and regular
- BP is in the 110s/70 to 80s
- RR is in the teens
- SpO2 in the mid 90s on room air
- Temperature is 37.9C
- Breath sounds are clear

The learner is expected to:

- Complete an assessment

When asked, the facilitator should give the following report:

- Blood glucose level is 254

Based on this result, the prescribed amount of insulin should be prepared and administered to the patient.

Urinary catheter care should be performed.

This SCE prepares the learner for the following items of the NCLEX-RN test format:

NCLEX-RN Test Plan:

X Safe and Effective Care Environment

- X Management of Care
- X Safety and Infection Control

X Health Promotion and Maintenance

X Psychosocial Integrity

X Physiological Integrity

- X Basic Care and Comfort
- X Pharmacological and Parenteral Therapies
- X Reduction of Risk Potential
- X Physiological Adaptations

Author

Nancy McMenamy and Judy Johnson-Russell, Texas Woman's University - Dallas, TX.
Reviewed by Cathy Deckers, Wendy Jo Wilkinson and Diane Mathe, CAE Healthcare - Sarasota, FL, 2017.

Background

Patient History

Past Medical History:

- Although the patient is Hispanic, she can speak English and provides her history to the nurse.
- She reports that one week ago she was in the hospital for a femoral-popliteal bypass graft that was performed on her right leg.
- She noted some drainage coming from her incision and thought she should have it checked out.
- She has a history of diabetes for which she takes insulin.

Allergies:

- No known drug allergies

Medications:

- NPH insulin 30 units SUBCUT every AM

Code Status:

- Full code

Social/Family History:

- Daughter lives near patient and can assist with care

Handoff Report

The learner is expected to notify the healthcare provider of abnormal assessment findings where appropriate and necessary.

The report should follow the SBAR format and include:

Situation:

- The patient is an 86-year-old Hispanic female who was admitted to the Medical-Surgical Unit with a non-healing wound on her upper right leg where a femoral-popliteal bypass graft was performed one week ago.

Background:

- Patient has a history of diabetes for which she takes insulin.
- The patient also suffered an injury to her left ankle when she tripped on a curb on the way to the hospital today.

Assessment:

Vital Signs:

- HR 88
- BP 145/80
- RR 28
- SpO2 95% on room air
- Temperature 38.6C

General appearance:

- Anxious
- Concerned about not being able to care for herself when she returns home

Cardiovascular:

- Sinus rhythm
- Pedal pulses 2+ bilaterally

Respiratory:

- Breath sounds with crackles bilaterally
- Non-productive cough

GI:

- Normoactive bowel sounds
- Had a bowel movement last evening

GU:

- Incontinent of urine

Handoff Report Continued

Extremities:

- Swelling and bruising noted on left ankle
- Draining wound on right upper leg at femoral-popliteal bypass graft site

Skin:

- Pink
- Slightly moist

Neurological:

- Alert and oriented to person, place and time
- Pupils equal, round and reactive to light and accommodation
- No neurological deficits

IVs:

- None

Labs:

- Blood glucose to be checked before meals and at bedtime

Fall Risk:

- High risk for falls

Pain:

- Complaining of pain to right leg graft site and of tenderness over left ankle

Recommendations:

- Implement admission orders
- Monitor for instability
- Notify healthcare provider of abnormal assessment findings

Orders

Initial Healthcare Provider's Orders

- Admit to Medical-Surgical Unit
- Diagnosis: Non-healing right femoral-popliteal bypass graft
- Full code
- Diet 1200 calorie ADA
- Up with assist three times a day
- Vital signs every 4 hours
- Notify healthcare provider if BP greater than 180/100, HR greater than 100, RR greater than 30 or temp greater than 38.3C
- Pulse oximetry every shift
- Respiratory therapy to induce sputum collection for culture and sensitivity
- Check blood glucose AC and at bedtime
- NPH insulin 30 units SUBCUT every AM
- Sliding scale insulin AC and at bedtime:
 - Less than 50 - Administer 1 amp of Dextrose 50% and notify healthcare provider
 - 50 - 70 - Administer 15 g of simple carbohydrates (6 ounces of orange juice or skim milk) and repeat the blood glucose in 15 minutes. Notify the healthcare provider.
 - 151-200 - 2 units Regular SUBCUT
 - 201-250 - 4 units Regular SUBCUT
 - 251-300 - 6 units Regular SUBCUT
 - 301-350 - 8 units Regular SUBCUT
 - 351-399 - 10 units Regular SUBCUT
 - 400 or Greater - Notify healthcare provider
- CefTRIAxone 750 mg IM every 24 hours, first dose after sputum culture has been completed
- Acetaminophen 650 mg PR every 4 hours prn mild pain or fever above 38C
- Morphine 4 mg PO or IM every three hours prn prior to dressing change and prn every four hours for severe pain
- STAT Chest x-ray
- Change dressing every 24 hours to right leg bypass graft site using sterile wet-to-moist technique with normal saline
- Insert urinary catheter for incontinence
- Incentive spirometry every hour while awake

Preparation

Learning Objectives

- Relates the significance of the patient's symptoms and assessment findings (APPLYING)
- Utilizes appropriate techniques to reconstitute an antibiotic, mix insulin and administer intramuscular and subcutaneous medications (APPLYING)
- Demonstrates insertion and care of a urinary catheter (APPLYING)
- Demonstrates a sterile wet-to-moist dressing change (APPLYING)
- Assesses and interprets pain appropriately and administers medication correctly (UNDERSTANDING)
- Records assessment findings, procedures and patient outcomes accurately (REMEMBERING)
- Utilizes appropriate teaching strategies regarding diabetic foot care to an elderly, Hispanic, lower socioeconomic patient (APPLYING)
- Communicates appropriate patient information to the healthcare provider (APPLYING)
- Utilizes therapeutic communication techniques when communicating with the patient (APPLYING)
- Analyzes treatment modalities and evaluates patient outcomes to those treatments (ANALYZING)

This SCE addresses the following QSEN Competencies:

- X Patient-Centered Care
- X Teamwork and Collaboration
- X Evidence-Based Practice
- X Quality Improvement
- X Safety
- X Informatics

Learning Performance Measures

Essential Performance Measures for the SCE:

- Reviews patient's medical record
- Performs hand hygiene before and after patient contact
- Demonstrates appropriate use of personal protective equipment
- Introduces self to patient
- Verifies patient identity with two identifiers
- Conducts basic environmental safety assessment and maintains safety measures
- Uses therapeutic communication to establish rapport and reduce patient anxiety
- Calculates and administers medications safely according to the Six Rights
- Provides developmentally appropriate education
- Evaluates effectiveness of communication
- Evaluates effectiveness of education
- Documents all findings, interventions and patient responses

State 1 Initial Assessment

- Performs complete physical assessment
- Assesses oxygen saturation
- Identifies significant and abnormal findings: anxiety, crackles, incontinence, leg wound, ankle tenderness, bruising and pain
- Elevates head of bed
- Assesses blood glucose
- Cleans patient and changes waterproof pad
- Inserts urinary catheter using aseptic technique
- Notifies Respiratory Therapy of order for sputum culture
- Ensures sputum culture is obtained before administering cefTRIAXone IM using the Six Rights
- Administers acetaminophen suppository PR and morphine orally or IM using the Six Rights
- Performs wet-to-moist dressing change to graft site using sterile technique
- Instructs patient on use of incentive spirometer
- Explains the rationale for not soaking her foot in hot water.
- Requests results of chest x-ray
- Notifies healthcare provider of abnormal assessment and diagnostic findings
- Reassesses pain level

Learning Performance Measures Continued

State 2 Hypoglycemia:

- Performs a focused assessment
- Recognizes signs and symptoms of hypoglycemia
- Assesses blood glucose
- Administers 15 g of simple carbohydrates (6 oz of orange juice or skim milk)
- Determines the reason for the hypoglycemia episode

State 3 Patient Treated:

- Reassesses for signs and symptoms of continued hypoglycemia
- Reassesses blood glucose in 15 minutes and evaluates results

State 4 Report to Next Shift:

- Assesses vital signs and performs a complete assessment
- Assesses blood glucose prior to administering insulin
- Prepares and administers correct dose of insulin
- Performs appropriate urinary catheter care

Preparation Questions

- What is a femoral-popliteal bypass? Describe possible postoperative complications.
- What is the correct technique for the insertion, care and removal of a urinary catheter?
- What is the correct technique for administering a reconstituted intramuscular medication?
- What is the correct technique for mixing and administering insulin?
- What are the signs and symptoms of hyperglycemia and hypoglycemia? How would each be treated?
- What are the principles of sterile technique?
- What is the procedure for performing a wet-to-moist sterile dressing change?
- What would be appropriate teaching strategies for an elderly, Hispanic patient regarding diabetic foot care?
- What therapeutic communication techniques would be appropriate for a patient who is anxious?
- What is an incentive spirometer and how is it used?

Equipment and Supply List

Medication Supplies

Distilled water vial 5 mL (labeled Morphine 5 mg/mL)

Reconstitution powder (labeled CefTRIAXone add 2.1 mL of sterile water to a 1 gm vial to make a concentration of 350 mg/m) (2)

Distilled water vial 5 mL (labeled Sterile Water)

Simulated oral medication (labeled Morphine 2 mg)

Suppository (labeled Acetaminophen 650 mg)

Distilled water vial 10 mL (2) labeled:

- Regular insulin
- NPH insulin

Filter needle

10 mL syringe

20 gauge needle

3 mL syringe with 22 gauge, 1 1/2 inch needle

50 unit Insulin syringe with needle

Oxygen, Airway and Ventilation Supplies

Incentive spirometer

Genitourinary Supplies

Urinary catheter insertion kit

16 Fr urinary catheter

Catheter drainage bag

Measuring cylinder

Distilled water 1000 mL with 2 mL yellow food coloring for urine source

Dressing Supplies

Dressing change tray

4x4 gauze pads, sterile package (5)

Tape

Wound measuring disk

Long sterile cotton swab package (2)

Bottle sterile saline

Equipment and Supply List Continued

Miscellaneous

Patient chart with appropriate forms and order sheets
Patient identification band
Stethoscope
BP cuff adapted for use with manikin
Non-sterile gloves (1 box)
Sharps container
Audio and video recording devices
Alcohol preps (5)
Sterile gloves (2 pairs)
Washcloths, towels (2 each)
Waterproof pads (3)
Juice or skim milk (180 mL)
Ammonia (30 mL)
Blue eyeshadow
Thermometer
Petroleum jelly
Blue and green food coloring or green chalk dust
Red grease paint or red lip liner pencil
Spray bottle

Monitors Required

NIBP
SpO₂

Notes

Facilitator Notes

You can adjust the complexity of the SCE depending on the level of learners by modifying the **Learning Objectives** and **Learner Performance Measures**.

This SCE is supplied with custom **Patient Record** files (Lab Reports, Ultrasounds, Xrays etc) and can be displayed on the TouchPro monitor or printed and used for this SCE. (See *User Guide for instructions on importing patient records*).

You should include other simulators as available (**VIMEDIX, Blue Phantom, LapVR, etc.**) in the simulation to engage your learners in a complete spectrum of clinical care to augment learner experience.

It is important to use moulage to increase the fidelity of your simulation. For trauma simulations, consider using the **FX Simulated Wound Kit**.

Here are some suggestions for preparing your manikin for this SCE:

- Dress the manikin in a hospital gown
- Place an age-appropriate wig on the manikin
- Place the head of bed in a flat position
- Use red grease paint to simulate the incision
- To simulate wound drainage, mix petroleum jelly with small amounts of food coloring to achieve desired grayish green color or mix green chalk dust in petroleum jelly. Placed desired amount on wound
- Create slight bruising on the left ankle using blue eyeshadow applied to the manikin
- It is also suggested to challenge learners by providing illegible healthcare provider orders. Allow learners to problem solve through this common problem in healthcare settings
- Prime the Genitourinary system per manikin feature. In State 1, place an absorbent pad with yellow urine underneath the manikin with a drop of ammonia to simulate incontinence

Debriefing and instruction after the SCE are critical. Learners and facilitators may wish to view a recording of the simulation made with **CAE LearningSpace** or **Replay** for debriefing and feedback purposes

Debriefing Points

The Facilitator Should Begin by Introducing the Process of Debriefing:

Introduction:

- Discuss faculty role as a facilitator
- Expectations
- Confidentiality
- Safe environment for discussion

Personal Reactions:

- Allow learners to recognize and release emotions, explore learner reactions

Discussion of Events:

- Analyze what happened during the SCE
- Utilize LearningSpace or Replay recording to playback if available

Summary:

- Review what went well and what did not
- Identify areas for improvement and evaluate the experience

Questions to be Asked During Debriefing:

- What was the experience like for you?
- What happened and why?
- What did you do and was it effective?

Discuss Your Interventions: (technical and non-technical)

- Were they performed appropriately and in a timely manner?
- How did you decide on your priorities for care and what would you change?
- How did patient safety concerns influence your care? What did you overlook?
- In what ways did you personalize your care (recognition of culture, concerns, anxiety) for this patient and family members?

Discuss Your Teamwork:

- How did you communicate and collaborate?
- What worked, what didn't work and what you will do differently next time?
- What are you going to take away from this experience?

Teaching Q&A

State 1 Initial Assessment:

What would the nurse assess in a four days postoperative patient who is febrile?

- *Any signs of infection, especially respiratory or wound*

Why would the patient's temperature, blood pressure and pulse be elevated?

- *In response to infection*

Why would it be important to evaluate the patient's pedal pulses?

- *To assess for post femoral-popliteal blockage of the bypass graft*

Why would a patient with diabetes have complications with wound healing?

- *Increased blood sugar impairs blood flow*
- *Protein malnutrition with decreased collagen synthesis*
- *Impaired immune defenses*
- *Decreased anabolic activity*

What are the consequences of incontinence?

- *Impaired skin integrity*
- *Possible infection of the leg wound*

What would the learner do if the patient only spoke and understood Spanish?

- *Get an interpreter*
- *Guard against HIPAA violations*

What does the pulse oximeter measure? What are normal values?

- *The pulse oximeter indirectly measures the oxygen saturation of a patient's blood*
- *Normal values are 95% to 100%*

Why is incontinence alone not an adequate reason for inserting an indwelling catheter?

- *An indwelling catheter increases the risk of healthcare associated infections*

What therapeutic communication techniques might be utilized to calm this patient?

- *Touch*
- *Empathy*
- *Calming voice*

Teaching Q&A Continued

What is the correct method to palpate pedal pulses?

- *Pulses need to be assessed bilaterally and simultaneously to note any deficits*

When does discharge planning begin? What patient-centered discharge planning issues have you identified?

- *Discharge planning begins upon admission and continues throughout the patient's hospitalization*
- *Proper diabetic foot care (patient wanted to soak her foot in hot water upon admission)*
- *Wound care*
- *Patient lives alone and has a wound, may need assistance with wound care*

What assessments are important when the patient has pain?

- *Location*
- *Intensity*
- *Precipitating factors*
- *Relieving factors*
- *Description*

How should the nurse respond if the patient identifies an allergy to the medication order?

- *Notify healthcare provider*

Describe any hazards that exist for administering an intramuscular injection into the approved sites.

- *Vastus lateralis can be a painful injection site*
- *Injection into blood vessel or nerve*
- *Sterile or septic abscess*

What sites are available for the nurse to administer an IM injection?

- *Deltoid: 0.5 mL limit for injection*
- *Ventrogluteal: site of most consistent amount of adipose tissue, decreases the rate of subcutaneous administration, maximum 3 mL injection recommended*
- *Vastus lateralis*

What are the landmarks for identifying the ventrogluteal site?

- *Greater trochanter, anterior superior iliac spine*

Teaching Q&A Continued

Why has the dorsogluteal been negated as an appropriate IM site?

- *Sciatic nerve damage, damage to the gluteal artery, site has lowest absorption rate, and possible granuloma formation*

When should the Z-track method be utilized?

- *Evidence-based practice recommends using the Z-track method routinely when administering IM injections except for when administering immunizations*

Why would the healthcare provider order the catheterization of this patient?

- *Proximity of wound to incontinence*

What would the nurse do if, while inserting the urinary catheter, resistance was met?

- *Never force a catheter*
- *Try rotating the catheter as advancing*
- *Notify healthcare provider*

What are evidence-based practice recommendations for testing the balloon prior to insertion of the urinary catheter?

- *Follow the manufacturer's recommendation. It is inferred that testing the balloon reduces elasticity and is not needed*

What complication could result from urinary catheterization?

- *Nosocomial infection*

Why is it important to reassess the patient's pain level?

- *To evaluate effectiveness of medication*

What would the nurse do if the patient's pain were still at a 6 out of 10?

- *Assess for changes in condition*
- *Administer additional morphine per healthcare provider's orders*
- *Request alternative medication from healthcare provider*
- *Be a patient advocate*
- *Try nonpharmacologic methods of pain management*

Why does cefTRIAXone need to be reconstituted?

- *Unstable in liquid form*

Teaching Q&A Continued

State 2 Hypoglycemia:

Why might this patient have become hypoglycemic?

- *Insufficient nutritional intake*

What are the signs and symptoms of hypoglycemia and hyperglycemia?

- *Hypoglycemia: nervousness, fatigue, sweating, hunger, confusion, irritability and impatience*
- *Hyperglycemia: polyphagia, polyuria, polydipsia, blurred vision, fatigue, weight loss, poor wound healing and dry mouth*

What treatments should the nurse administer to the patient with hypoglycemia?

- *Test blood sugar*
- *Administer 15 gram carbohydrates*
- *Retest in 15 minutes and repeat if necessary*
- *May need glucagon or IV dextrose*

Why would it be important to monitor this patient's dietary intake?

- *Blood sugars may fluctuate related to nutritional intake*

Why would this patient require additional insulin at this time?

- *Stress and infection increase production of insulin-counterregulatory hormones*

State 3 Patient Treated:

What assessments are important to conduct during the night?

- *Blood sugar*
- *Mental status*
- *Skin moistness*

Does the patient need to be awakened during the night? Why or why not?

- *No*
- *Blood glucose is normal*
- *May be able to assess without fully awakening*

State 4 Report to Next Shift:

What situations would prevent the administration of the morning insulin?

- *Extremely low blood sugar*
- *Nothing by mouth for procedure*

Teaching Q&A Continued

Why is it important to combine insulin using a specific order?

- *It is possible to reduce the effectiveness of faster-acting insulin by contaminating it with longer-acting insulin*

What are the possible subcutaneous injection sites?

- *Outer posterior of arms*
- *Abdomen*
- *Anterior thighs*
- *Scapular region*
- *Upper ventral gluteal area*

Why does the nurse rotate sites?

- *To prevent collection of medication within the tissues*
- *To prevent sterile abscesses*

What is the correct administration technique for administering subcutaneous injections?

- *The injection can be given at a 45 degree angle which does not require pinching the skin, or the 90 degree angle which does require pinching the tissue*

Why is it important to have the patient eat soon after insulin administration?

- *Various insulins have different onset and peak times*
- *To avoid hypoglycemia*

Why might this patient require an increase in her insulin dosage at this time?

- *Increased demand due to infection and wound healing*

What is the purpose of performing urinary catheter care each shift after insertion?

- *To reduce the threat of urinary tract infection*

What are complications associated with urinary catheters?

- *Nosocomial infection*
- *Bladder contracture*

References

American Diabetes Association (ADA). (2016). Standards of Medical Care in Diabetes. *The Journal of Clinical and Applied Research and Education Diabetes Care* 39(1), S52-S59.

Bratzler, D. W., Dellinger, E. P., Olsen, K. M., Perl, T. M., Auwaerter, P. G., Bolon, M. K., ... Weinstein, R. A. (2013). Clinical practice guidelines for antimicrobial prophylaxis in surgery. *American Journal of Health-System Pharmacy*, 70(3), 244 - 283.

Collins, N. & Sloan, C. (2013). Diabetic wound healing through nutrition and glycemic control. *Today's Wound Clinic*, 7(2),

Greer, N., Forman, N. A, MacDonald, R., Dorrian, J., Fitzgerald, P., Rutks, & Wilt, T. J. (2013). Advanced wound care therapies for nonhealing diabetic, venous and arterial ulcers: A systematic review. *Annals of Internal Medicine*, 159(3), 532-542. 2013

Khanolkar, U. B. & Ephrem, B. (2015). Endovascular reconstruction of popliteal and infrapopliteal arteries for limb salvage and wound healing in patients with critical limb ischemia - A retrospective analysis. *Indian Heart Journal*, 68, 77 - 82.

National Institute for Health and Care Excellence (NICE). (2016). Type 1 diabetes in adults: Diagnosis and Management. Retrieved from:
<https://www.nice.org.uk/guidance/ng17/resources/type-1-diabetes-in-adults-diagnosis-and-management-pdf-1837276469701>