

## SECTION I: SCENARIO OVERVIEW

<b>Scenario Title:</b>	Care of Neutropenic Patient	
Original Scenario Developer(s):	Janet Long, RN MSN CNE	
Date - original scenario	04/11	
Validation:	07/12 C. O’Leary-Kelley RN, PhD, CNE	
Revision Dates:	07/18 Marjorie Miller, MA, RN, CHSE	
Pilot testing:	10/12 Lincoln University School of Nursing	
QSEN revision:	07/12 C. O’Leary-Kelley, RN, PhD	
<b>Estimated Scenario Time:</b> 15 – 30 minutes <b>Debriefing time:</b> 30-45 minutes		
<b>Target group:</b> Advanced Nursing Students and Novice Registered Nurses		
<b>Core case:</b> Symptomatic neutropenic patient. Patient presents for round #2 of chemotherapy for breast cancer – has flu-like symptoms and is febrile.		
<b>QSEN Competencies:</b> Patient Centered Care Safety		
<b>Brief Summary of Case:</b> The patient, a 72-year-old female, is admitted to the short stay center for round #2 of chemotherapy for treatment of breast cancer. She reports feeling a “little off the since last night” as if she were coming down with the flu. Her initial assessment is within normal limits except for a low grade fever. Learners are expected to complete a brief physical assessment and assess for the existence of common potential problems such as fatigue, bleeding, and/or infection. Learners will intervene by assessing current lab results, communicating assessment findings to the health care provider and initiating antibiotic therapy.		

### EVIDENCE BASE / REFERENCES (APA Format)

- Warnock, C. (2016) Neutropenic Sepsis: prevention, identification & treatment. *Nursing Standard*. 2016 April 27:30(35) 51-60. Retrieved on 7/23/18 from <https://www.ncbi.nlm.nih.gov/pubmed/doi:10.7748/ns.30.35.51.s48>.
- The Joint Commission. (2018). Targeted Solutions for Hand Hygiene Retrieved on 7/18/18 from [https://www.centerfortransforminghealthcare.org/tst\\_hhy.aspx](https://www.centerfortransforminghealthcare.org/tst_hhy.aspx)
- Quality and Safety Education for Nurses (QSEN) Institute. (2018). QSEN Competencies. Retrieved May 13, 2018, from <http://qsen.org/competencies/pre-licensure-ksas/#safety>
- Lustberg, M. (2014) Mgt. of Neutropenia in Cancer Patients. *Clinical Advances in Hematology Oncology* 2012. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4059501>

## SECTION II: CURRICULUM INTEGRATION

<b>A. SCENARIO LEARNING OBJECTIVES</b>
<b>Learning Outcomes</b>
1. Provide nursing care that promotes safety and minimizes risk of error.
2. Apply clinical decision making skills in interpreting and analyzing data in evolving situations.
3. Prioritize interventions considering multiple dimensions of patient/family centered care.
4. Communicate effectively with members of the inter-professional team.
<b>Specific Learning Objectives</b>
1. Applies principles of hand hygiene, infection control and personal protection.
2. Correctly identifies patient and introduces team.
3. Gathers relevant patient and contextual data to identify patient’s current problem.
4. Correctly prioritizes immediate significant interventions required for a neutropenic patient.
5. Demonstrates situational awareness and responds to patient / family concerns.
6. Recognize need for additional orders and report change of status to provider, using strategies to minimize risk when reporting change of status.
7. Perform timely interventions to address urgent primary problems as they unfold.
8. Evaluate effectiveness of interventions.
<b>Critical Learner Actions</b>
1. Perform hand hygiene; correctly identify patient.
2. Perform brief assessment to include vital signs, pain, O <sup>2</sup> sats, cardio-resp status, IV patency, allergies
3. Call for lab results
4. Call health care provider; report patient status using SBAR; read back and document orders received.
5. Engage patient / family and provide teaching re: neutropenia, medications, protective precautions
6. Administer antibiotic utilizing the six rights of medication administration.

<b>B. PRE-SCENARIO LEARNER ACTIVITIES</b>	
<b>Prerequisite Competencies</b>	
Required prior to participating in the scenario	
Knowledge	Skills/ Attitudes
<input type="checkbox"/> Normal CBC and implications of a low absolute neutrophil count (ANC).	<input type="checkbox"/> Adult assessment and early recognition of significant abnormal findings
<input type="checkbox"/> Risk factors associated with chemotherapy	<input type="checkbox"/> Therapeutic communication in acute situations
<input type="checkbox"/> Interventions to prevent infection in immunosuppressed patients	<input type="checkbox"/> Engage patient to promote health, safety, well-being and self-care management
<input type="checkbox"/> Structured Communication Tools (SBAR)	<input type="checkbox"/> Safe Medication administration
<input type="checkbox"/> Legal aspects of taking telephone orders	<input type="checkbox"/> Documenting and initiating telephone orders
<input type="checkbox"/> Central line (PICC) care	<input type="checkbox"/> Value active patient participation in plan of care

### SECTION III: SCENARIO SCRIPT

#### A. Case summary

This case involves a 72-year-old female admitted to the outpatient chemotherapy unit for her second round of chemotherapy. Following diagnosis, she received a mastectomy and is receiving adjuvant chemotherapy. She has a spirited, independent affect but reports that she just doesn't feel quite right. Her skin is pale, with vital signs of BP: 120/72, P: 88, R: 22, T: 100.1. She is accompanied by a family member who has symptoms of an upper respiratory infection. The nursing staff is waiting for the results of a complete metabolic profile and blood cell count which was previously drawn. Following analysis of the data, the client will be diagnosed with neutropenia and appropriate nursing action implemented.

#### B. Key contextual details

Private room in outpatient chemotherapy center. Fully staffed. Accompanied by family member who has runny nose and sniffles.

#### C. Scenario Cast

Patient/ Client	<input checked="" type="checkbox"/> High fidelity simulator	
	<input type="checkbox"/> Mid-level simulator	
	<input type="checkbox"/> Task trainer	
	<input type="checkbox"/> Hybrid (Blended simulator)	
	<input type="checkbox"/> Standardized patient	
Role	Brief Descriptor (Optional)	Standardized Participant (SP) or Learner (L)
RN 1		L
RN 2		L
Relative		L or S P
Prescriber/ Lab tech		S P

D. Patient/Client Profile				
Last name:	Jones		First name:	Bell
Gender: F	Age: 72	Ht: 5'4"	Wt: 110 lbs	Code Status: Full Code
Spiritual Practice: Agnostic		Ethnicity: "I'm a rural American!"		Primary Language spoken: English
1. History of present illness				
<p>Nine weeks ago B.J. received a modified L. mastectomy after being diagnosed with stage II breast cancer. Her post-operative recovery was uncomplicated. She is currently receiving chemotherapy. Her first round of chemo was tolerated without difficulty. She is starting her second round of chemo today. Pre-treatment labwork has been ordered.</p>				
<b>Primary Medical Diagnosis</b>		Stage II Breast Cancer		

2. Review of Systems	
CNS	Alert, oriented X3, PERRLA
Cardiovascular	Apical regular: S1, S2, distant heart sounds Radial and pedal pulses: +3
Pulmonary	Lungs clear, respirations unlabored
Renal/Hepatic	Denies complaints
Gastrointestinal	Abdomen soft, bowel sounds active x 4
Endocrine	Post menopausal
Heme/Coag	No bruising or c/o bleeding
Musculoskeletal	Full ROM reports "a little weak and achy"
Integument	Has PICC line in right arm. Left mastectomy scar. No tenderness, warmth or drainage noted at either site.
Developmental Hx	Older adult – "having trouble coping with this new diagnosis"
Psychiatric Hx	None
Social Hx	Lives with daughter, non smoker, non drinker
Alternative/ Comp. Med	None

Medication allergies:	None	Reaction:	
Food/other allergies:	None	Reaction:	

3. Current meds	Drug	Dose	Route	Frequency
	Multivitamin	1 tab	po	q day

4. Laboratory, Diagnostic Study Results					
Na: 140 mEq/L	K: 4.5 mEq/L	Cl: 101 mEq/L	CO <sup>2</sup> : 22 mEq/L	BUN: 17mg/dL	Cr: 0.9 mg/dL
Ca: 10.2mg/dL	Mg: 2.0mg/dL	Phs:4.2 g/dL	Gluc: 88mg/dL	HgA1C: 5.4%	
Hgb: 11.6	Hct: 34%	Plt:200/mm <sup>3</sup>	WBC:1800/mm <sup>3</sup>	ABO Blood Type:	
PT:	PTT:	INR:	Troponin:	BNP:	
Ammonia:	Amylase:	Lipase:	Albumin: 2g/dL	Lactate:	
ABG-pH: 7.35	paO <sup>2</sup> : 80	paCO <sup>2</sup> : 40	HCO <sup>3</sup> /BE: 26	SaO <sub>2</sub> : 94	
VDRL:	GBS:	Herpes:	HIV:		
CXR: diffuse infiltrates LLL		ECG: NSR rate 90 bpm			
CT:		MRI:			
Other: ANC= 756/cu mm					

**E. Baseline Simulator/Standardized Patient State**

1. Initial physical appearance					
Gender: F		Attire:			
Alterations in appearance (moulage): White/Gray Wig, facial make up to provide pale appearance					
X	ID band present, accurate information		ID band present, inaccurate information		ID band absent or not applicable
	Allergy band present, accurate information		Allergy band present, inaccurate information		Allergy band absent or not applicable

**2. Initial Vital Signs Monitor display in simulation action room:**

No monitor display	X	Monitor on, but no data displayed		Monitor on, standard display	
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BP: 120/72	HR: 88	RR: 22	T: 100.1	SpO <sub>2</sub> : 98%
CVP:	PAS:	PAD:	PCWP:	CO:
AIRWAY:	ETCO <sub>2</sub> :	FHR:		
Lungs: Sounds/mechanics	Left: clear		Right: clear	
Heart:	Sounds: S1 S2		Distant heart sounds	
	ECG rhythm:		NSR	
	Other:			
Bowel sounds:	Active x 4 quadrants		Other:	

3. Initial Intravenous line set up						
X	Saline lock #1	Site:	RA PICC Line		X	IV patent (Y/N)
	IV #1	Site:		Fluid type:	Initial rate:	IV patent (Y/N)
	Main					
	Piggyback					
4. Initial Non-invasive monitors set up						
X	NIBP		ECG First lead:		ECG Second lead:	
X	Pulse oximeter	X	Temp monitor/type		Other:	
5. Initial Hemodynamic monitors set up						
	A-line Site:		Catheter/tubing Patency (Y/N)		CVP Site:	PAC Site:
6. Other monitors/devices						
	Foley catheter	Amount:		Appearance of urine:		
	Epidural catheter		Infusion pump:	Pump settings:		
	Fetal Heart rate monitor/tocometer			Internal	External	
Environment, Equipment, Essential props						
1. Scenario setting: (example: patient room, home, ED, lobby)						
Private room in outpatient chemotherapy center. Client is wearing street clothes. Can be reclining on hospital bed or geri chair. Essential props include equipment for IV therapy and monitoring vital signs.						

2. Equipment, supplies, monitors						
	Bedpan/ Urinal		Foley catheter kit		Straight cath. kit	Incentive spirometer
X	IV Infusion pump		Feeding pump		Pressure bag	Wall suction
	Nasogastric tube		ETT suction catheters		Oral suction catheters	Chest tube insertion kit
	Defibrillator		Code Cart		12-lead ECG	Chest tube equip
	PCA infusion pump		Epidural infusion pump		Central line Insertion Kit	Dressing Δ equipment
X	IV fluid Type: appropriate antibiotic and IV tubing				Tubes/drains Type:	Blood product ABO Type: # of units:
X	Protective isolation equipment					

3. Respiratory therapy equipment/devices					
Nasal cannula		Face tent		Simple Face Mask	Non rebreather mask
BVM/Ambu bag		Nebulizer tx kit		Flowmeters (extra supply)	

4. Documentation and Order Forms					
X	Health Care Provider orders	X	Med Admin Record	H & P	X Lab Results
	Progress Notes		Graphic record	Anesthesia/PACU record	ED Record
	Medication reconciliation		Transfer orders	Standing (protocol) orders	ICU flow sheet
X	Nurses' Notes		Dx test reports	Code Record	Prenatal record
X	Actual medical record binder, constructed per institutional guidelines		X	Other: Prescriber Order Sheet post- notification of neutropenic state to include: orders for protective precautions, urine culture, blood cultures x2 – peripheral and central line, CXR, and appropriate antibiotic therapy (see #5)	

5. Medications (to be available in sim action room)							
#	Medication	Dosage	Route	#	Medication	Dosage	Route
4	NS Flushes	10 mL	IVP				
1	Zosyn (piperacillin/tazobactam),	3.375g, in 150 mL NS	IVPB to infuse over 30 minutes				

CASE FLOW / TRIGGERS/ SCENARIO DEVELOPMENT STATES			
<p><b>Initiation of Scenario:</b> The elderly female client is resting quietly in a private room of an outpatient chemotherapy waiting for her second round of chemotherapy. Following diagnosis of her breast cancer, she received a mastectomy 9 weeks ago and is receiving adjuvant chemotherapy. She has a spirited, independent affect but reports that she “just doesn’t feel quite right”. She is pale in appearance, with vital signs of BP: 120/72, P: 88, R: 22, T: 100.1. She is accompanied by a family member who appears to have symptoms of an upper respiratory infection. The nursing staff is waiting for the results of a complete metabolic profile and blood cell count which was previously drawn.</p>			
STATE / PATIENT STATUS	DESIRED LEARNER ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p><b>1. Baseline</b></p> <p>Patient status: Vital signs as above-</p> <p>“I’m just kind of off- like I’m coming down with something”</p>	<p><b>Operator</b></p> <p>Display vitals as learner assesses. BP 120/72, HR 88, RR 22, T 100.1</p> <p>Display CBC and Chem Profile 5 minutes after labs ordered.</p> <p><b>Triggers:</b> Opportunity to analyze labs triggers move to next state or allow 10 minutes for completion of learner activities.</p>	<p><b>Learner Actions</b></p> <ol style="list-style-type: none"> <li>1. Hand hygiene/ Introduces self/ Identifies patient (2) identifiers</li> <li>2. Complete brief head to toe assessment and client history.</li> <li>3. Request labs results.</li> <li>4. Analyzes lab and assessment results.</li> <li>5. Identifies potential infection in patient.</li> </ol>	<p><b>Debriefing Points:</b></p> <p>Atypical appearance of infection in neutropenic clients: decreased inflammatory response may only be fever or malaise.</p> <p>Populations at risk for neutropenia.</p>



STATE / PATIENT STATUS	DESIRED ACTIONS & TRIGGERS TO MOVE TO NEXT STATE		
<p><b>2.</b></p> <p><b>Patient status:</b> Increase temp. to 101. BP 118/70, Pulse 94.</p> <p>Client- "I'm feeling really warm in here!"</p> <p>Simulated Participant (sister) cue "would you mind checking her vitals again?"</p>	<p><b>Operator:</b> Display Temp after it is assessed. prescriber provides order for blood and urine cultures and broad spectrum antibiotic</p> <p><b>Triggers:</b> Documentation of orders received. Lab enters room to draw labs or allow 15 minutes to complete.</p>	<p><b>Learner Actions:</b></p> <ol style="list-style-type: none"> <li>1. Reassesses temperature</li> <li>2. Provides emotional support</li> <li>3. Collaborates with team.</li> <li>4. Communicates abnormal indicators to prescriber using SBAR.</li> <li>5. Reads back and documents orders received.</li> <li>6. Orders cultures and CXR.</li> </ol>	<p><b>Debriefing Points:</b></p> <p>Reinforcement of components of SBAR communication.</p> <p>Fever in neutropenic patient is an emergency: review consequences if not treated promptly.</p>
<p><b>3.</b></p> <p>Unchanged</p>	<p><b>Operator:</b> None</p> <p><b>Triggers:</b> Beginning Administration of antibiotic signals completion of scenario.</p>	<p><b>Learner Actions:</b></p> <ol style="list-style-type: none"> <li>1. Initiates protective precautions.</li> <li>2. Checks for allergies</li> <li>3. Administers antibiotic</li> <li>4. Demonstrates 6 rights of medication administration</li> <li>5. Provides patient teaching: antibiotic rx/ protective precautions.</li> <li>6. Provides emotional support</li> </ol>	<p><b>Debriefing Points:</b></p> <p>Reinforcement of 6 rights: steps and rationale. Potential for medication errors in this scenario and how to avoid.</p> <p>Interventions and rationale related to protective precautions.</p>
<p>Scenario End Point: Scenario is completed after antibiotic therapy is initiated. Client can be admitted to inpatient unit for further care.</p>			
<p>Suggestions to <u>decrease</u> complexity: Suggestions to <u>increase</u> complexity: Create indicators of hemodynamic instability. Create opportunities for medication error- wrong pt wrist band, allergy, or wrong antibiotic provided by pharmacy. Create opportunity for learners to independently calculate the absolute neutrophil count (ANC)- provide with a mock lab report listing CBC with differential.</p>			





<b>APPENDIX B: Digital images of manikin and/or scenario milieu</b>	
<p><b>Insert digital photo here</b></p>	<p><b>Insert digital photo here</b></p>
<p><b>Insert digital photo here</b></p>	<p><b>Insert digital photo here</b></p>

**APPENDIX C: DEBRIEFING GUIDE**

<b>General Debriefing Plan</b>			
<input type="checkbox"/> Individual	<input type="checkbox"/> Group	<input type="checkbox"/> With Video	<input type="checkbox"/> Without Video
<b>Debriefing Materials</b>			
<input type="checkbox"/> Debriefing Guide	<input type="checkbox"/> Objectives	<input type="checkbox"/> Debriefing Points	<input type="checkbox"/> QSEN
<b>QSEN Competencies to consider for debriefing scenarios</b>			
<input type="checkbox"/> Patient Centered Care	<input type="checkbox"/> Teamwork/Collaboration	<input type="checkbox"/> Evidence-based Practice	
<input type="checkbox"/> Safety	<input type="checkbox"/> Quality Improvement	<input type="checkbox"/> Informatics	
<b>Sample Questions for Debriefing</b>			
<ol style="list-style-type: none"> <li>1. How did the experience of caring for this patient feel for you and the team?</li> <li>2. Did you have the knowledge and skills to meet the learning objectives of the scenario?</li> <li>3. What GAPS did you identify in your own knowledge base and/or preparation for the simulation experience?</li> <li>4. What RELEVANT information was missing from the scenario that impacted your performance? How did you attempt to fill in the GAP?</li> <li>5. How would you handle the scenario differently if you could?</li> <li>6. In what ways did you check feel the need to check ACCURACY of the data you were given?</li> <li>7. In what ways did you perform well?</li> <li>8. What communication strategies did you use to validate ACCURACY of your information or decisions with your team members?</li> <li>9. What three factors were most SIGNIFICANT that you will transfer to the clinical setting?</li> <li>10. At what points in the scenario were your nursing actions specifically directed toward PREVENTION of a negative outcome?</li> <li>11. Discuss actual experiences with diverse patient populations.</li> <li>12. Discuss roles and responsibilities during a crisis.</li> <li>13. Discuss how current nursing practice continues to evolve in light of new evidence.</li> <li>14. Consider potential safety risks and how to avoid them.</li> <li>15. Discuss the nurses' role in design, implementation, and evaluation of information technologies to support patient care.</li> </ol>			
<b>Notes for future sessions:</b>			