

Sepsis/Septic Shock Unfolding Reasoning Case Study
Clinical Day One Dr. Smith

This is a case study that mimics a real patient in the hospital. As you read the scenario, information is given to you about the patient as it becomes available. You need to fill in what data is relevant and tell why it has clinical significance. You can work on this as an individual or with your peers. Turn this into my dropbox by 1400 today.

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Date: 1/4/22



Jack Holmes, 72 years old

Primary Concept(s)
Perfusion & Gas Exchange
Interrelated Concepts
<ul style="list-style-type: none">• Inflammation• Infection• Tissue Integrity• Clinical Judgment• Patient Education• Communication

HISTORY OF PRESENT PROBLEM:

Jack Holmes is a 72-year-old Caucasian male brought to the ED by ambulance from a skilled nursing facility (SNF). According to the report from the paramedic, the SNF nursing staff attempted to wake him up this morning and he would not respond. His BP was 74/40 with a MAP of 51. He has a history of Parkinson's disease, COPID, CHF, HTN, depression, and a stage IV decubitus ulcer on his coccyx that developed three months ago. He does not follow commands, is unresponsive to verbal stimuli, but responds to a sternal rub with grimacing and withdrawing from stimulus.

PERSONAL/SOCIAL HISTORY:

He has lived at the SNF for the past 3 years and has been bed bound the past year due to his advanced Parkinson's disease. He was a heavy smoker, 1 PPD for 40 years until he moved to the SNF. He has no next of kin listed.

What data from the histories are Relevant and must be interpreted as clinically significant by the nurse?

- Parkinson's Disease: A chronic disorder that results in abnormal functioning of the brain, characterized by tremors, rigidity, akinesia, and postural instability. Possible reason why the patient suffers from depression and has been bed bound for the past year causing a stage IV decubitus ulcer on his coccyx.
- COPD: Chronic inflammatory response in the airways and lungs resulting in persistent airflow limitation caused by smoking 1 PPD for 40 years.
- CHF: Clinical syndrome that results in the inability of the heart to provide sufficient blood to meet the O2 needs of tissues and organs. Possible cause for the patient's BP to be 74/40 and having a MAP of 51.
- HTN: Possible cause of CHF
- Depression: Possible symptom of PD
- Stage IV decubitus ulcer: Skin breakdown caused by impaired physical mobility and debilitation from PD.

RELEVANT data from the present problem	What is the clinical significance of this data? What should you be looking for as the nurse?
<ul style="list-style-type: none">• Unresponsive when the SNF tried waking him up this morning• Doesn't follow commands• Unresponsive to verbal stimuli• Responds to a sternal rub with grimacing and withdrawing from stimulus• BP 74/40• MAP of 51	<ul style="list-style-type: none">• Glasgow Coma Scale score of 7 (Nurse should be looking into the patient being intubated soon)• BP 74/40: Indicates severe hypotension and could indicate a serious heart problem or infection; can result in shock.• MAP of 51: Patient has poor tissue perfusion
RELEVANT data from the	What is the clinical significance of this data? What

social history	should you be looking for as the nurse?
<ul style="list-style-type: none">• He has lived at the SNF for the past 3 years• Bed bound for the past year due to his advanced Parkinson's disease• Heavy smoker, 1 PPD for 40 years until he moved to the SNF• No next of kin listed	<ul style="list-style-type: none">• Patient is incapable of caring for himself• The patient has been bed bound for the past year resulting in a stage IV decubitus ulcer on his coccyx• Smoking heavily for 40 years has caused the patient to have COPD• No next of kin listed means that he doesn't have any supportive family members to help him with his care

VITAL SIGNS:

Patient Care Info upon arrival to ED

Vital Signs	PQRST Pain Assessment	
T 103.4 F P 135 (irregular) R 32 (regular, shallow) BP 76/39 MAP 51 O2 91% 2L NC Weight 242 lbs	Provoking/Palliative Quality Region/Radiation Severity Timing	Not responsive verbally, withdraws to pain, no other indications of pain

What data from the vital signs and pain assessments are Relevant and must be interpreted as clinically significant by the nurse?

RELEVANT data from the vital signs & pain assessment	What is the clinical significance of this data? What should you be looking for as the nurse?
<ul style="list-style-type: none"> • T 103.4 F • P 135 (irregular) • R 32 (regular, shallow) • BP 76/39 • MAP 51 • O2 91% 2L NC • Weight 242 lbs 	<ul style="list-style-type: none"> • A temperature > 100.4 F should be a concern for the nurse and could indicate that the patient has an infection. (The nurse should look for any other signs or symptoms of an infection that the patient may have) • T 103.4 F, P 135 (irregular), R 32 (regular, shallow) indicates that the patient has SIRS • O2 91% 2L NC: Patient has poor tissue perfusion even with supplemental oxygen being provided (Nurse needs to increase the oxygen supply to help meet the patient's oxygen demands) • Weight 242 lbs: Could be an indication of fluid retention from CHF

ASSESSMENT DATA:

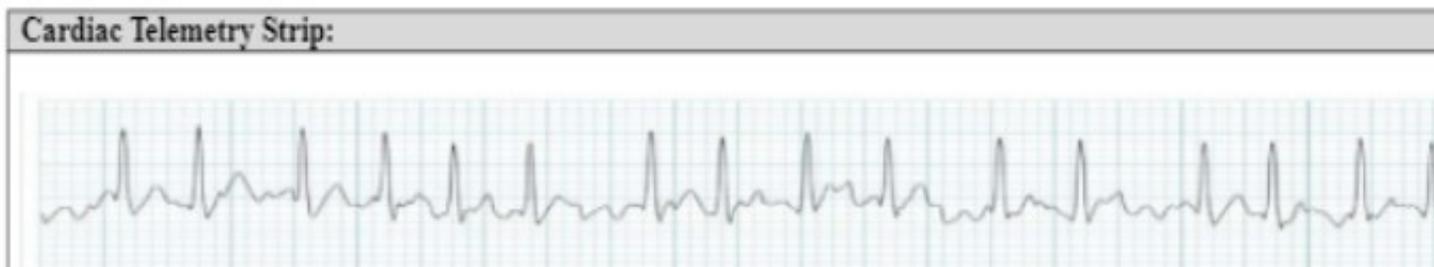
Current Assessment:	
General Appearance	Pale, warm to touch. Appears tense
Respirations	Tachypneic, working hard to breath, intercostal and suprasternal retractions present. Breath sounds diminished and light crackles in the lower lobes bilaterally. Nail beds have noticeable clubbing, barrel chest present
Cardiac	Pale, 1+ pitting edema lower extremities, systolic murmur with an irregular rhythm, radial weak pulses/thready, cap refill >3 seconds
Neuro	Does not open eyes to sound or pain, withdraws to pain, incomprehensible sounds to painful stimuli, does not follow commands but does not resist when moved on to a stretcher. PERRL
GI	Distended abdomen, firm/nontender, bowel sounds hypoactive in all quadrants
GU	Foley catheter placed to monitor UO, 50 mL tea colored urine with no sediment, no odor present
Skin	Stage IV decubitus to coccyx 1 cm X 0.5 cm X 0.5 cm depth, wound bed with visual bone noted at the base with large areas of necrosis on both sides of the sacrum bone. When dressing was removed, a large amount of yellow/green purulent drainage was noted with a foul odor. Surrounding mucus membranes were dry and pale.

Determine the current Glasgow Coma Scale Score based on the neurological assessment data:

Eye opening	
Spontaneous	4
To Sound	3
To Pain	2
No response	1
Motor Response	
Obeys Commands	6
Localizes Pain	5
Normal flexion (withdrawal)	4
Abnormal flexion	3
Extension	2
None	1
Verbal Response	
Oriented	5
Confused conversation	4
Inappropriate words	3
Incomprehensible sounds	2
None	1
Total	7

What data from the vital signs and pain assessments are Relevant and must be interpreted as clinically significant by the nurse?

RELEVANT assessment data	What is the clinical significance of this data? What should you be looking for as the nurse?
<ul style="list-style-type: none"> • Pale • Appears tense • Tachypneic, working hard to breath, intercostal and suprasternal retractions present. Breath sounds diminished and light crackles in the lower lobes bilaterally. Nail beds have noticeable clubbing, barrel chest present • Pale, 1+ pitting edema lower extremities, systolic murmur with an irregular rhythm, radial weak pulses/thready, cap refill >3 seconds 	<ul style="list-style-type: none"> • Paleness could be a sign of poor tissue perfusion • Patient appears tense possibly because of pain or anxiety • Patient is tachypneic



What data from the cardiac telemetry strip are Relevant and must be interpreted as clinically significant by the nurse?

Regular or Irregular?	P wave present?	QRS normal or abnormal?
<p>Interpretation of strip</p>		

Clinical Significance

DIAGNOSTIC RESULTS:

What data from the diagnostic testing are Relevant and must be interpreted as clinically significant by the nurse?

Radiology: Chest X Ray	
Results:	Clinical Significance:
Cardiac silhouettes slightly enlarged. No infiltrates present.	

LAB RESULTS:

Complete Blood Count (CBC)					
	WBC	HGB	PLTs	% Neuts	Bands
Current:	18.5 ↑	13.1 trending ↓	250 ↑	85.2 ↑	3
Most Recent:	12.4	13.2	175	64	0

Basic Metabolic Panel (BMP)					
	Na	K	Gluc.	reate.	
Current:	147 ↑	5.2 ↑	172 ↑	1.6 ↑	

Misc.					
	Lactate	PT/INR	GFR		
Current:	7.4	1.6	45		
Most Recent:	n/a	0.9	>60		

Liver Panel					
	Albumin	Total Bili	Alk. Phos.	ALT	AST
Current:	2.9 ↓	5.1 ↑	285	134	175
Most Recent:	3.1	0.9	48	17	12

What data from the serum lab results are Relevant and must be interpreted as clinically significant by the nurse?

RELEVANT lab data	What is the clinical significance of this data? What should you be looking for as the nurse?
<ul style="list-style-type: none"> WBC 18.5 Hgb 13.1 PLTs 250 % Neutrophils 85.2 Bands 3 Na 147 K 5.2 Gluc. 172 	<ul style="list-style-type: none"> WBC 18.5: An elevated WBC indicates that the patient has an infection Hgb 13.1: The patient's RBCs aren't carrying enough oxygen PLTs 250: An elevated platelet count could be an indication of an infection, inflammation, or bleeding; (microthrombi) Patient has a shift to the left Na 147: The patient is dehydrated and needs a fluid

<ul style="list-style-type: none"> • Lactate 7.4 • Albumin 2.9 • Total Bili 5.1, ALT 134, AST 175 	<p>bolus</p> <ul style="list-style-type: none"> • K 5.2: Indication of why the patient is experiencing dysrhythmias • Gluc. 172: Patient has an elevated blood sugar and needs insulin • Lactate 7.4: Excess production from tissue hypoperfusion, indication of organ failure, hemorrhage, severe infection/sepsis • Albumin 2.9: The patient has a high risk of mortality • Total Bili 5.1, ALT 134, AST 175: Indicates an infection in the patient's liver
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Urinalysis + UA Micro										
	Color:	Clarity:	Sp. Gr.	Protein	Nitrite	LET	RBCs	WBCs	Bacteria	Epithelial
Current:	Tea	Clear	1.050	NEG	NEG	NEG	<5	<5	NEG	None
Most Recent:	Yellow	Clear	1.025	NEG	NEG	NEG	<5	<5	NEG	None

What data from the Urinalysis results are Relevant and must be interpreted as clinically significant by the nurse?

RELEVANT lab data	What is the clinical significance of this data? What should you be looking for as the nurse?
<ul style="list-style-type: none"> • Tea colored urine 	

Lab Planning: Creating a Plan of Care with a PRIORITY Lab:

Which lab value would you be most concerned about at this point?

LAB Current Value	NORMAL VALUE	Clinical Significance	Nursing assessments and interventions required

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Clinical Reasoning Begins...

1. Interpreting relevant clinical data, what is the primary problem? What primary signs and symptoms does this primary problem represent? (Management of Care/Physiologic Adaptation)

Problem	Pathophysiology of Problem in your own words	What would you anticipate could happen and what s/s would you watch for?
<ul style="list-style-type: none"> • Sepsis • Oxygenation alteration • Poor perfusion 	<ul style="list-style-type: none"> • The patient has an elevated HR and RR, temperature of 103.4, and other indications of an infection based on his labs. He has shown signs of mental decline as he was difficult to rouse this morning. He is also extremely ill, showing signs and symptoms of pain, discomfort, and shortness of breath. The patient has an infection that has spread into his blood stream • The gas exchange throughout the patient's body to his vital organs has become disrupted • The patient's body has been unable to pump blood due to vasodilation 	<ul style="list-style-type: none"> • The patient could possibly go into septic shock • The patient may experience tissue damage, organ failure and death

Collaborative Care: Medical Management

(Pharm and Parenteral Therapies)

Physician Orders	Rationale	Expected outcome
Fluid Bolus 0.9% Sodium Chloride 30 mL/kg	The patient is dehydrated-used for volume replacement	Improved BP, CO, and tissue perfusion

Blood cultures X 2	The patient has multiple elevated labs	Labs brought down to normal ranges
Urine Culture		
Wound culture		
Vancomycin 2 g IV after cultures collected		
Clindamycin 600 mg IV every 6 hours		
Cardiac Telemetry		
VS every 15 minutes		
Acetaminophen 1000mg PR every 6 hours PRN for temp >101	Patient has a temperature of 103.4 F	
If MAP remains <65 after 2250 mL fluid bolus, start norepinephrine 1-12 mcg/min to maintain MAP >65		
If MAP remains <65 after norepinephrine at 12 mcg/min start vasopressin 0.01-0.03 units/min to maintain map >65		

PRIORITY Setting: Which orders do you implement first and why?

Physician Orders	Order of priority	Rationale:
1. Fluid Bolus 0.9% Sodium Chloride 30 mL/kg		
2. Blood cultures X 2		
3. Urine Culture		
4. Wound culture		
5. Vancomycin 2 g IV after cultures collected		
6. Clindamycin 600 mg IV every 6 hours		
7. Cardiac Telemetry		
8. VS every 15 minutes		

9. Acetaminophen 1000mg PR every 6 hours PRN for temp >101		
10. If MAP remains <65 after fluid bolus, start norepinephrine 1-12 mcg/ min to maintain MAP >65		
11. If MAP remains <65 after norepinephrine at 12 mcg/ min start vasopressin 0.01-0.03 units/min to maintain map >65		

Collaborative Care: Nursing

2. What nursing priority (ies) will guide your plan of care? (Management of Care)

Nursing Priority -what is the priority problem(s) the patient has that needs to be addressed?		
Nursing Interventions (priority – top 10)	Rationale:	Expected outcome:

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3. What body system(s) will you assess most thoroughly based on the primary/priority concern? (Reduction of Risk Potential/Physiologic Adaptation)

Priority Body System(s)	Priority nursing assessments

4. What is the worst possible/most likely complication to anticipated based on the primary problem of this patient? (Reduction of Risk Potential/Physiologic Adaptation)

Complication(s) to anticipate		
Nursing Interventions to prevent this complication	Assessments to identify problem early	Nursing interventions to rescue if complications occur

5. What psychosocial/holistic care priorities need to be addressed for this patient? (Psychosocial Integrity/Basic Care and Comfort)

Psychosocial priorities		
Priority nursing interventions:	Rationale:	Expected Outcome:
CARE/COMFORT		
EMOTIONAL		
CULTURAL CONSIDERATIONS		

Evaluation:

Evaluate the response of your patient to nursing and medical interventions during your shift. All physician orders that have been implemented are listed under medical management.

Two hours later ...

The patient received the fluid bolus of 0.9%NS, and a right internal jugular central line was placed in the ED. He has required norepinephrine 6 mcg/min to maintain a MAP >65. He was transferred to the ICU an hour ago and appears to be resting comfortably. He is now responding to commands. He has received both antibiotics and acetaminophen. His lactate level was repeated and is now 4.8 mmol/L.

Vital Signs	Previous VS	PQRST Pain Assessment	
T 101.4F P 124 (irregular) R 24 (regular, shallow) BP 86/56 MAP 66 O2 93% 2 LNC	T 103.4 F P 135 (irregular) R 32 (regular, shallow) BP 76/39 MAP 51 O2 91% 2L NC Weight 242 lbs	Provoking/Palliative Quality Region/Radiation Severity Timing	Denies pain

Current Assessment:	
General Appearance	Calm, body relaxed, no grimacing, appears to be resting comfortably
Respirations	Breath sounds diminished with crackles in lower lobes bilat, remains tachypneic but breathing is not as labored
Cardiac	Pale, warm and dry, edema to BLE 2%, heart sounds irregular with murmur, pulses weak and equal, cap refill 2 sec
Neuro	Opens eyes to voice, obeys simple commands, oriented to person only, thought he was at the nursing home and has no idea what year it is
GI	Distended abdomen, firm/nontender, bowel sounds hypoactive in all quadrants
GU	Foley catheter with 30 mL tea colored urine last two hours
Skin	Dressing on coccyx replaced in ED, no drainage present on dressing

Determine current Glasgow Coma Scale score based on the current neurological assessment data:

Eye opening	
Spontaneous	4
To Sound	3
To Pain	2
No response	1
Motor Response	
Obeys Commands	6
Localizes Pain	5

Normal flexion (withdrawal)	4
Abnormal flexion	3
Extension	2
None	1
Verbal Response	
Oriented	5
Confused conversation	4
Inappropriate words	3
Incomprehensible sounds	2
None	1
Total	

1. What data is relevant for the assessment and vital signs and must be interpreted as clinically significant by the nurse? (Reduction of Risk Potential/Health Promotion and Maintenance)

Relevant Vital sign data	Clinical Significance
Relevant assessment data	Clinical significance

2. Has the status of the patient improved or not as expected at this point? Does your nursing priority or plan of care need to be modified in any way after this evaluation assessment? (Management of Care, Physiological Adaptation?)

Patient Status	
Nursing Plan of Care	

3. Based on your current evaluation, what are your CURRENT nursing priorities and plan of care?

Nursing Priority -what is the priority problem(s) the patient has that needs to be addressed?		
Nursing Interventions (priority – top 10)	Rationale:	Expected outcome:

It is now the end of your shift. You have done an excellent job with this patient.