Urinary Tract Infection/Urosepsis

Introduction

In this unfolding case study that simulates the complexities of clinical practice, you will assume the role of a nurse in an emergency department setting. You will use a holistic approach to provide safe care by making correct clinical judgments for a patient with weakness who has a problem the nurse needs to recognize.

You will need to apply essential knowledge to notice and interpret the most critical assessment findings and lab values to properly establish care priorities and identify a developing complication before it needlessly progresses.

Preparation for Care Activity

Recognizing Clinical Relationships

Review the medical history and home medications of this patient. Which medication treats what condition? Then identify the pharm. classification and expected outcome for *this* patient with each home medication and its most common side effect (SE).

Medical History	Home Medications	Pharm. Classification	Expected Outcome	Common SE
Benign prostatic hyperplasia (BPH) Diabetes type 2 Hyperlipidemia Gastroesophageal reflux disease (GERD) Hypertension (HTN)	1. Finasteride 5mg po daily 2. Doxazosin XL 4mg po daily 3. ASA 81 mg PO daily 4. Metformin 1000 mg PO daily 5. Sitagliptin 100mg PO daily 6. Atorvastatin 20 mg PO daily in the evening 7. Omeprazole 20mg PO daily supplement 8. losartan 50 mg PO daily 9. (HCTZ) Hydrochlorothiazide 25mg po daily am			

Part I: Developing Noticing and Interpreting Skills

Present Problem

Calvin Thomas is an 84-year-old male who arrives at a rural Emergency Department via a local police officer. Calvin was walking, and the Deputy stopped to check on him. Once Calvin could not answer basic questions, the Deputy brought him to the facility for an evaluation. Calvin's chief complaint is "feeling tired."

Personal/Social History

Calvin is a retired farmer. Calvin completed the 10th grade in school. He lives alone and is a widow, as his wife passed away ten years ago. He walks to the local store and does not drive. The pharmacy delivers his medications to his home as he lives within the city limits. Calvin is well known in the community and has five children and 12 grandchildren that stop by to check on him periodically.

Contextual Factors

You have recently passed your licensure exam and are excited to begin working in your hometown as a nurse. The Emergency Department is staffed with a physician assistant, registered nurse, and licensed practical nurse. You usually work on the small eight-bed inpatient unit but have been pulled to the Emergency Department because of staffing challenges. You have no prior medical experience. Calvin's grandson is standing outside the door.

1. Which findings from the *present problem* are **most important** and noticed by the nurse as clinically significant?

Most Important Findings	Clinical Significance

2. Which data from the *social history* is **most important** and noticed by the nurse as clinically significant?

Most Important Findings	Clinical Significance

3. Which findings from the *contextual factors* are **most important** and noticed by the nurse as clinically significant?

Most Important Findings	Clinical Significance

Patient Care Begins

Respirations
22 per minute on room air

The nurse recognizes the need to validate their concern of fluid volume deficit and performs a set of orthostatic VS, and obtains the following:

Position:	HR:	BP:
Supine	105	110/60
Standing	128	94/42

4. Which current vital sign findings are **most important** and noticed by the nurse as clinically significant?

Most Important Data	Clinical Significance

Current Assessment:	
GENERAL SURVEY	Calm, body relaxed, eyes closed, easily arouses to verbal stimuli
PAIN	Left low back, ache, continuous, rates 5/10
NEUROLOGICAL	Alert and oriented to person only-is not consistently oriented to date and place, c/o dizziness when he sits up
HEAD	Head normocephalic with symmetry of all facial features. Pupils brisk, reactive to light, sclera white bilaterally, conjunctival sac pink bilaterally. The lips, tongue, and oral mucosa are pink and moist
RESPIRATORY	Nonlabored respiratory effort on room air. Denies SOB, no clubbing of nailbeds
CARDIAC	Pink, warm & dry skin, no edema, heart sounds regular, pulses strong, equal with palpation at radial/pedal/post-tibial landmarks, brisk cap refill < 2 seconds.
ABDOMEN	Abdomen round, soft, and non-tender, bowel sounds active
GENITOURINARY	Painful and frequency of urination persists, left flank tenderness to gentle palpation
INTEGUMENTARY	Skin warm, dry, intact, skin integrity intact, skin turgor elastic, lips dry, oral mucosa tacky dry

5. What assessment data needs to be noticed as most important? Interpret its clinical significance.

Most Important Data	Clinical Significance

Auscultate Posterior Breath Sounds

Place a circle on the chest where the nurse would place the stethoscope to auscultate the right lower lobe.

Click this link to listen. Identify what type of breath sounds are heard, and interpret their clinical significance.

Breath Sounds	Clinical Significance

Auscultate Heart Sounds

Place a circle on the chest where the nurse would place the stethoscope to auscultate the apical pulse.

Click this link to hear heart sounds. Identify what type of heart sounds are heard, and interpret their clinical significance.
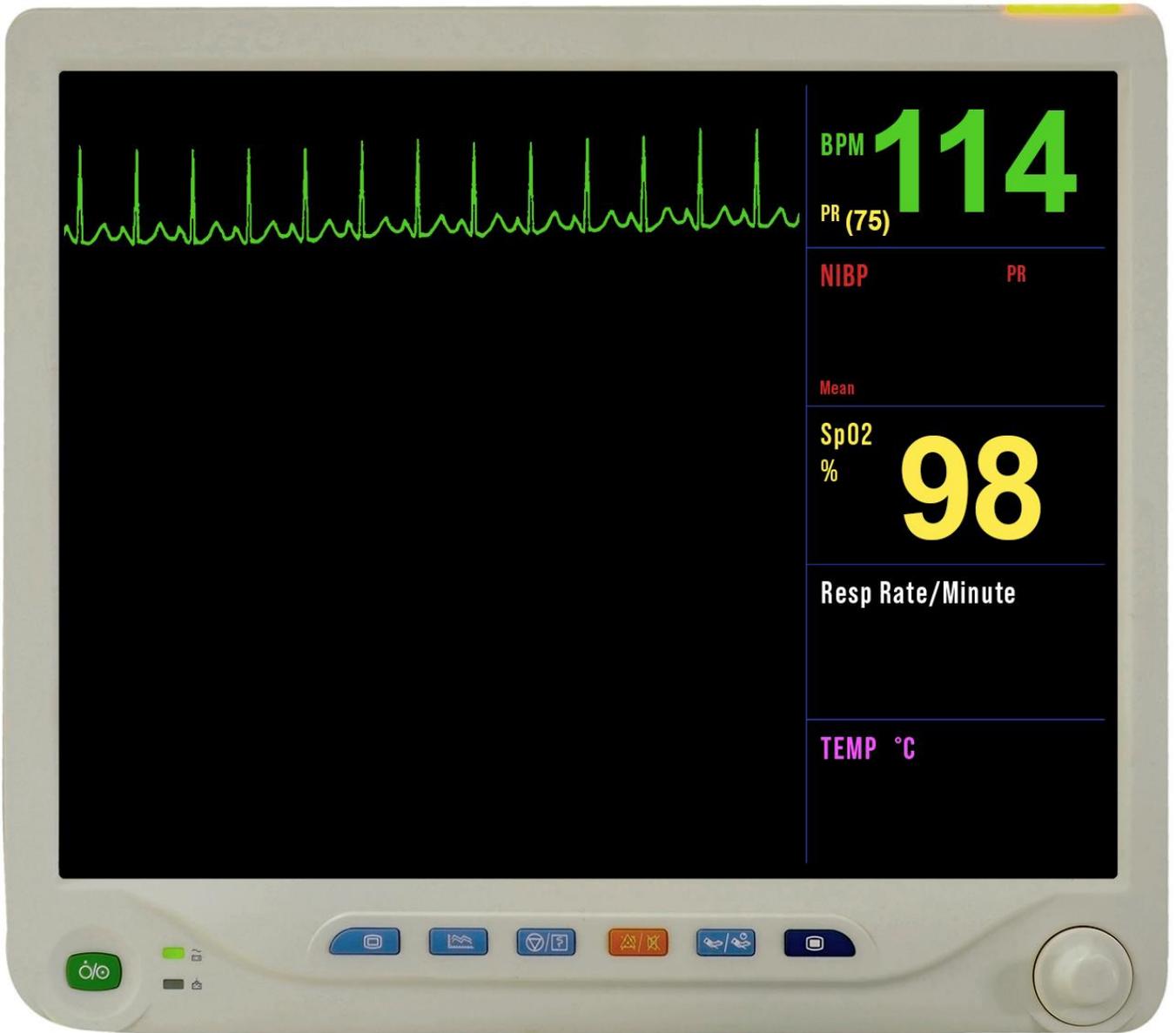
Heart Sounds	Clinical Significance

As you complete the head-to-toe assessment, you notice these findings on your patient's foot.

6. Which findings from this new information are **most important** and noticed by the nurse as clinically significant?

Most Important Findings	Clinical Significance	Nurse Response

BPM **114**
PR **(75)**

NIBP   PR

Mean

SpO2
%   **98**

Resp Rate/Minute

TEMP °C

Rhythm Interpretation		
Regular or Irregular:	P wave present? Yes/no	Rate :
Interpretation:		
Clinical Significance:	**Intervention** (if needed)	

Radiology Reports

What radiology findings are **most important** and noticed by the nurse as clinically significant?

Radiology: Chest X-Ray	
Results	**Clinical Significance**
No infiltrates or other abnormalities. No changes from last previous	

Lab Results

Hematology: Complete Blood Count (CBC)								
	WBC	**HGB**	**PLTS**	**% Neuts**	**% Lymphs**	**% Monos**	**% Eosin**	**Bands**
Reference Range:	(4.5-11.0 mm 3)	(12-16 g/dL)	(150-450x 103/µl)	(55-70)	(20-40)	(2-8)	(1-4)	(0-2%)
Current	**16.0 !**	13.0	300	**99 !**	**5 !**	2	1	1
Prior adm.	8.8	14.8	188	68	**15 !**	4	3	0

Which diagnostic findings are **most important** and noticed by the nurse as clinically significant?

Most Important Data	Clinical Significance	TREND Improved/Declined/No Change

Metabolic Panel										
	Na	**K**	**Cl**	**CO2**	**AG**	**Gluc**	**Ca**	**BUN**	**Creat**	**GFR**
Reference Range:	135-145 mEq/L	3.5-5.0 mEq/L	95-105 mmol/L	20-29 mmol/L	(7-16 mEq/L)	64-110 mg/dL	8.5-10.5 mg/dL	8-25 mg/dL	0.6-1.3 mg/dL	>60 mL/min
Current	140	4.2	101	22	14	**215 !**	8.9	35	**1.8 !**	**50 !**
Prior adm.	138	3.6	98	20	12	**128 !**	8.5	14	1.1	60

Which diagnostic findings are **most important** and noticed by the nurse as clinically significant?

Most Important Data	Clinical Significance	TREND Improved/Declined/No Change

Misc.						
	Mg	**COVID-19**	**`Ion Ca**	**Lipase**	**Lactate (Ven)**	**Hgb A1C**
Reference Range:	(1.6-2.0 mEq/L)	Neg	(1.03-1.23 mmol/L)	(3-73 units/L)	(0.5-2.2 mmol/L)	< 5.7%
Current	1.8	Neg	--	--	**3.2 !**	--
Prior adm.	1.9	Neg	--	--	--	--

Which diagnostic findings are **most important** and noticed by the nurse as clinically significant?

Most Important Data	Clinical Significance	TREND Improved/Declined/No Change

Urinalysis											
	Color	**Clarity**	**Sp Grav**	**pH**	**Protein**	**Glucose**	**Ketones**	**Bili**	**Blood**	**Nitrate**	**LET**
Reference Range:	Pale yellow	Clear	1.016-1.022	4.5-7.8	Neg	>0.5 g/day	Neg	Neg	< 3 cells	Neg	Neg
Current	**Dark ! yellow**	**Cloudy !**	**1.040 !**	5.5	**2+ !**	**2+!**	Neg	Neg	Neg	Pos !	Pos !
Prior adm.	Yellow	Clear	1.010	5.9	1+	Neg	Neg	Neg	Neg	Pos !	Pos !

UA Micro				
	RBCs	**WBCs**	**Bacteria**	**Epithelial**
Reference Range:	(0-2 cells)	(0-5 cells)	(0-few)	(0-few)
Current	1	**>100 !**	Large	Few
Prior adm.	0	3	Few	Few

Which diagnostic findings are **most important** and noticed by the nurse as clinically significant?

Most Important Data	Clinical Significance	TREND Improved/Declined/No Change

Lab Planning Activity

Lab Name	Clinical Significance	Priority Nursing Assessments/Interventions
Creatinine Current Value: 1.8 Critical Value		

Part II: Developing Responding Skills

1. Interpreting clinical data collected, list at least **two** problems that are possible for this patient? Which problem is the priority?

Possible Problems	Priority Problem	Pathophysiology of Priority Problem

Medical Management of Care

2. Identify the rationale for each provider order and its expected outcome.

Care Provider Orders:	Rationale:	Expected Outcome:
Establish peripheral IV		
Obtain Blood Cultures		
0.9% NS 1000 mL IV bolus over one hour		
Acetaminophen 325 mg 2 po now		
Ceftriaxone 1g IVPB…after blood/urine cultures obtained		
Morphine 2 mg IV push every 2 hours prn-pain		
Bed Rest		

Nursing Management of Care

3. After interpreting clinical data collected, identify the nursing priority and three priority interventions. For each intervention write the rationale and expected outcome.

Nursing Priority	

Priority Intervention(s)	Rationale	Expected Outcome

4. Based on the *social history, which* findings are noted as **most important,** then identify the psychosocial/holistic care priority? List appropriate interventions, rationale, and expected outcomes.

Psychosocial/Holistic Care Priority	

Priority Interventions	Rationale	Expected Outcome

Education/Discharge Planning

5. Identify three priority educational topics that need to be included in a teaching plan to prevent complications and prepare this patient for discharge?

Teaching About Illness	Treatment Priorities	Lifestyle Priorities

Part III: Developing Evaluation Skills

> As the nurse, you have implemented the medical and nursing plan of care. Two hours later, you collect the following assessment data:

1. For each finding, make a clinical judgment by placing an "x" in the appropriate column if the patient's condition has improved, has not changed, or has declined.

Assessment Finding	Improved	No Change	Declined
T: 101.4 F/38.6 C (oral)			
P: 112 (regular)			
R: 22 (regular)			
BP: 98/50 MAP: 66			
O2 sat: 98% room air			
No urine output the past 2 hours			
Extremities are mottled in appearance and cool to touch.			

Write a concise narrative nurse's note to document what was most important in the medical record at the end of your shift.

Nurse Reflection

To strengthen your clinical judgment skills, reflect on your knowledge and the decisions made caring for this patient by answering the reflection questions below.

Reflection Question	Nurse Reflection
As you worked through this simulation, how did it make you feel?	
What did you already know and do well on this simulation?	
What areas do you need to develop/improve?	
What did you learn? How will you apply what was learned to improve patient care?	