Student Name: ISABELLE AZAR
Medical Diagnosis/Disease: URINARY TRACT INFECTION

NCLEX IV *(8)*: **Physiological Integrity/Physiological Adaptation**

Anatomy and Physiology
Normal Structures

The urinary tract is a sterile system that is used to eliminate liquid waste from the body. It consists of the kidneys, ureters, bladder, and urethra. Kidneys are bean shaped organs located on both sides of the spine below the rib cage. The have multiple functions such as filtration, regulating fluid balance, regulating electrolyte balance, regulating acid base balance, aiding RBC production, and activating vitamin D into its active form. The structure of the kidneys include the renal cortex, renal medulla consisting of renal pyramids and the loop of Henle with collecting ducts. The renal pelvis is a funnel that collects urine from the collecting ducts. In the kidneys there are structures called nephrons. They filter blood of waste. Blood passes through the glomeruli where blood pressure makes filtrate pass through capillary walls into the bowman capsule where essential nutrients are reabsorbed. The filtrate then passes through the proximal tubule where it passes through the loop of henle. The loop of henle dips down into the kidneys medulla which is very salty and reabsorbs more water as the water follows the salt. Then the filtrate is passed through the distal tubule where ADH hormone and the RAAS system influences how much fluid is retained based on the bodies needs. The remaining water is deemed urine and it is passed through collecting ducts and down into the ureters and is stored in the bladder until it is excreted. The bladder is a hollow organ that stores until its ready to be released. It expands when holding urine and contracts when expelling urine through the urethra and out the body.

Pathophysiology of Disease

A UTI is an invasion of all or part of the urinary tract which includes the kidneys, bladder, and urethra, by pathogens. Usually caused by bacteria E. Coli. Viral and fungal organisms may also cause UTIs. Pathogens from the perineum ascend through the urethra to the urinary bladder. Organisms originating from the perineum are introduced via the ascending route from the urethra. Gram negative bacilli normally found in the GI tract and some gram-positive organisms such as streptococci, enterococci, and staphylococcus saprophyticus can cause these UTIS as they enter the urethra and make their way up the urinary tract.

Can be classified as upper or lower urinary tract infection.
Uncomplicated UTI (normal urinary tract) or Complicated UTI (underlying disease or structural or functional problem in urinary tract. Uncomplicated occur in an otherwise normal urinary tract.

Specific terms identify the urinary tract location of infection. Pyelonephritis implies inflammation or infection of the renal parenchyma. Cystitis indicates inflammation of the bladder wall.

NCLEX IV *(7)*: **Reduction of Risk**

Anticipated Diagnostics

Labs

- Dipstick urine analysis (detects RBCs, WBCs, nitrates, bacteria)
- Urine culture (clean catch)
- WBC count

Additional Diagnostics

Ultrasound, CT scan, MRI, cystoscopy showing urinary tract abnormalities

NCLEX II *(3)*: **Health Promotion and Maintenance**

NCLEX IV *(7)*: **Reduction of Risk**

Contributing Risk Factors

- Urine retention
- Previous UTI
- Sexual activity
- Pregnancy
- Age (young/older)
- Poor hygiene
- Indwelling catheter
- Chronically alkaline urine
- Obesity
- HIV infection
- Being a female
- Prior injury to urinary tract (hematogenous transmitted UTI)

Signs and Symptoms

- Burning urination
- Frequent urination
- Foul-smelling urine
- Urgent need to void
- Voiding less than 200 mL
- Urine retention
- Fever/ Chills
- Suprapubic tenderness
- Elevated WBC count
- Hematuria
- AMS, incontinence, abdominal discomfort, in older adults
- Urethra Discharge/Painful urination
- Bladder, Pelvic pressure, abdominal pain, frequent painful urination, hematuria,
- Kidney, Back/side pain, fever, shaking chills, n/v

Possible Therapeutic Procedures

Non-surgical

- Encourage fluids
- Instruct patient to void every 2-3 hours
- Encourage cranberry juice or vitamin C500-1000 mg/day
- Antibiotics (typically 3 days)
- Urinary analgesic (oral phenazopyridine)
- Limit use of indwelling catheters

Surgical

N/A

Prevention of Complications

(What are some potential complications associated with this disease process)

- Repeat infection
- Kidney damage
- Narrowed urethra in men
- Sepsis
- Low birth weight or premature infant when pregnant

NCLEX IV *(6)*: **Pharmacological and Psychosocial/Holistic Parenteral Therapies**

NCLEX IV *(5)*: **Basic Care and Comfort**

NCLEX III *(4)*: **Care Needs**

Anticipated Medication Management

Uncomplicated UTI are treated with a short term course of ABX for 3 days with trimethoprim/sulfamethoxazole, nitrofurantoin, cephalexin and

Non-Pharmacologic Care Measures

- Adequate fluid intake
- Patient teaching
- Apply heating pad to suprapubic area
- Sitz bath
- Encourage progressive

What stressors might a patient with this diagnosis be experiencing?

- **Pain associated with an UTI**
- **AMS or confusion in older adults**
- **Stress of being**

Fosfomycin. Complicated UTIs need a long period of ABX 7-14 days. Fluoroquinolones are used to treat complicated UTIs such as levofloxacin or ciprofloxacin. Oral phenazopyridine is used to relieve discomfort.	relaxation or distraction measures	**hospitalized**

Client/Family Education

NCLEX I *(1)*: **Safe and Effective Care Environment**

List 3 potential teaching topics/areas •Stay well hydrated •Take showers instead of baths and maintain proper hygiene •Do not hold in urination when you have the urge to go	Multidisciplinary Team Involvement (Which other disciplines do you expect to share in the care of this patient) • **Laboratory Technician** • **Provide** • **Nurse** • **Radiographer**

Potential Patient Problems (Nursing Diagnoses)

To Be Completed Before the Simulation

Anticipated Patient Problem: Impaired Urinary Elimination

Clinical Reasoning: Dysuria, oliguria, incontinence, urinating < 30ml/hr, foul smelling urine, dark colored urine

Goal 1: Will void >30ml/hr throughout my TOC

Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include timeframes.	**Multidisciplinary Team Intervention** (Prework) What will you do if your assessment is abnormal?
Assess urine output Q2	Promote adequate oral intake throughout my TOC
Assess for signs of AMS such as irritability and confusion throughout my TOC	Reorient patient and report changes in mental status to nursing instructor and provider
Assess for sudden change in temperature or fever Q4	Notify provider of acute changes and recheck WBC along with assess for signs of urosepsis
Assess urine for abnormal color, smell, or transparency PRN	Provide frequent toileting opportunities throughout my TOC
Assess lower back pain that could indicate kidney damage Q4	Notify provider of acute change, administer ABX as ordered
Palpate the bladder for distention, bladder scan if present Q4	PRN insert straight catheter and drain bladder as ordered

Goal 2: Will not show s/s of urosepsis or kidney damage by the end of my TOC

To Be Completed Before the Simulation

Anticipated Patient Problem: Acute Pain

Clinical Reasoning: Reports a pain level of ≥ 6 on a standardized pain scale HR≥100 BPM, BP ≥ 120/80

Goal 1: Reports a pain level of < 4/10 on a standardized pain scale by the end of my TOC

Relevant Assessments (Prework) What assessments pertain to your patient's problem? Include timeframes.	**Multidisciplinary Team Intervention** (Prework) What will you do if your assessment is abnormal?
Assess pain characteristics and score on a standardized scale Q4 hours	Administer prescribed oral analgesics PRN
Monitor for non-verbal signs of pain such as grimacing, guarding, moaning, Q4 hours	Educate on mindfulness activities such as meditating and deep breathing PRN
Evaluate preferred pain management techniques and distraction measures at the beginning of the shift	Provide preferred pain management techniques and distraction measures such as offering TV, a book, or calming music throughout my TOC
Monitor VS such as HR, BP, RR, Q4 hours	Provide a comfortable environment with minimum stimuli to promote relaxation, closed door, dim lights, quiet PRN
Assess for any factors that may alleviate pain throughout my TOC	Provide emotionally support and therapeutic communication addressing all fears and concerns PRN
Assess response to oral analgesic pain management Q administration	Notify provider of inadequate pain relief, assist with positioning and comfort measures to alleviate pain Q2 hours

Goal 2: Patient utilizes effective distraction measures throughout my time of care such as the TV, a book, or calming music throughout my TOC

To Be Completed During the Simulation:

Actual Patient Problem: Impaired Gas Exchange

Clinical Reasoning: Wheezing, tachypneic, O2 sat 88 on RA, crackles in lower lobes

Goal: Will maintain O2 >94 throughout my TOC Met: ☐ Unmet:X

Goal: Will not have s/s of hypoxia such as AMS, cyanosis, restlessness throughout my TOC Met: ☐ Unmet:X

Actual Patient Problem: **Risk for shock**

Clinical Reasoning: Temperature 101, RR 32, PH 7.28, PaCO2 35, HCO3, 20

Goal: Will maintain a blood pressure no lower than 90/60 during my TOC Met: X Unmet:☐

Goal: Will not develop a fever (temperature greater than 38 degrees Celsius) during my TOC Met: ☐ Unmet:X

Additional Patient Problems: Deficient fluid problem, risk for falls, decreased cardiac output, impaired skin integrity.

Below will be your notes, add more lines as needed. **Relevant Assessments:** Indicate pertinent assessment findings. **Multidisciplinary Team Intervention:** What interventions were done in response to your abnormal assessments? **Reassessment/Evaluation:** What was your patient's response to the intervention?

Patient Problem	Time	Relevant Assessments	Time	Multidisciplinary Team Intervention	Time	Reassessment/ Evaluation
Impaired gas exchange	0700	Wheezing, tachypneic, cannot talk	0700	Raised HOB up	0705	Oxygen saturation 88
Impaired gas exchange, decreased cardiac output	0705	Oxygen saturation 88, wheezing	0705	Applied 2L of O2 through nasal cannula, encouraged to take deep breathes	0833	Still wheezing, irregular labored breathing temperature 100.6, crackles in lungs, O2 90
Decreased cardiac output	0833	Still wheezing, irregular labored breathing patter, O2 90	0833	Increased oxygen to 4L, encouraged to cough	0834	O2 94% on 4L
Decreased cardiac output	1015	Home meds taken include furosemide, metoprolol, digoxin, atenolol	1030	Reconciled medications with pharmacy	1030	Ordered 0.25mg of digoxin, 20mg IV push furosemide STAT,
Risk for falls	1255	Found on the floor	1300	Ordered an XRAY	1330	Sustained a fracture to the hip, placed in buck's traction

Deficient knowledge	1600	States “I’m really frightened; I don’t know what that contraption is going to do to me”	1600	Dr. Baxter educated on the use of buck’s traction to treat fracture	1610	Patient not displaying signs of anxiety or restlessness, tolerating traction well
Impaired skin integrity	1900	Breakdown noted on coccyx, stage 2 pressure injury, partial thickness skin loss, complains of soreness on bottom	1910	Applied barrier cream and notified provider	0345	Barrier cream still present, stage 2 wound still present
Risk for shock	0300	O2 85% on 4L, displaying signs of hypoxia like confusion, wheezing, RR 32, temperature 101	0300	Increased O2 to 6L NC, notified charge nurse and Dr. Baxtor	0300	Ordered STAT ABGs, CBC, blood cultures x2, urinalysis, NS 150ml/hr
Risk for shock	0345	PH 7.28, PaCO2 35, HCO3, 20	0345	Notified provider of changes	0345	Simulation ended

ATI Virtual Clinical Questions and Reflection:

1) Identify two members of the healthcare team collaborating in the care of this patient:
    a. **Debbie RN**
    b. **Dr. Baxtor**
2) What were some steps the nursing team demonstrated that promoted patient safety?
    a. **Listened to the patient's concern and promptly addressed them.**
    b. **Frequently reassessed the patient while they were having respiratory distress.**
    c. **Notified the provider of acute changes as soon as was possible.**
3) Do you feel the nurse and medical team utilized therapeutic communication techniques when interacting with individuals, families, and health team members of all cultural backgrounds?
    a. If **yes**, describe: **The nurse was very quick in getting the provider to come down and talk to Mrs. Jordan about her fears regarding buck's traction. It was good that her fears were not dismissed but addressed promptly.**

Reflection

1) Go back to your Preconference Template:
    a. Indicate (circle, star, highlight, etc.) the components of your preconference template that you saw applied to the care of this patient.
2) Review your Nursing Process Form: Did you select a correct priority nursing problem?
    a. If **no,** write what you now understand the priority nursing problem to be: **The priority nursing problem would be impaired gas exchange and risk for shock due to the development of the s/s of urosepsis.**
3) Review your Patient Problem Form: Did you see many of your anticipated nursing assessments and interventions used?
    a. Were there interventions you included that *were not* used in the scenario that could help this patient?
        i. If **yes**, describe: **Provide a comfortable environment with minimum stimuli to promote relaxation, closed door, dim lights, quiet PRN, Promote adequate oral intake throughout my TOC, Provide frequent toileting opportunities throughout my TOC, Palpate the bladder for distention, bladder scan if present Q4**
4) After completing the scenario, what is your patient at risk for developing?
    a. Urosepsis
    b. Why? **The patient has an active infection that is not seeming to get better, they have a temperature of 101, RR 32, PH 7.28, PaCO2 35, HCO3, 20 showing metabolic acidosis a sign of sepsis**
5) What was your biggest "take-away" from participating in the care of this patient? How did this impact your nursing practice?

My biggest take away from participating in the care of this patient is that I will now remember the signs and symptoms of sepsis to pay attention to when caring for a client with an UTI or even any active infection that could possibly cause sepsis. Sepsis is very sudden with very unclear warning signs that are easy to ignore or contribute to the preexisting infection. It is very important to stay vigilant to the signs of sepsis before it is too late for the patient. Early signs of sepsis include restlessness with later signs including poor pupil reflex, clammy skin, and decreased bowel sounds. The later that sepsis is caught the poorer the prognosis is for the patient.