Student Name: Elyssia Gonzalez
Medical Diagnosis/Disease: Urinary Tract Infection (UTI)

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

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

Anatomy and Physiology

Normal Structures

-Organs of urinary system: 2 kidneys, 2 ureters, urinary bladder, and urethra.
-Functions include regulation of water volume, waste elimination, acid/base balance, electrolyte balance, excretion of drugs and toxins, production of erythropoietin and renin, conversion of vitamin D to its active form.
-Urine flow through kidneys to excretion: glomerulus, Bowman's capsule, proximal convoluted tubule, descending loop of Henle, ascending loop of Henle, distal convoluted tubule, collecting duct, minor to major calyx, renal pelvis, ureter, bladder, urethra.
-Urine characteristics→ Color – clear to deep yellow. Normal yellow color due to urochrome – a pigment that results from the body's destruction of hemoglobin. Odor is slightly aromatic. May take on an ammonia odor due to the action of bacteria.)
-Kidneys: T12 to L3 vertebrae, protected by ribs, size of bar of soap, shaped like beans, indentation called the hilum where structures enter and exit the kidneys. Enclosed by 3 layers= renal fascia, perirenal fat capsule, and fibrous capsule. Nephrons are the structural functional units of the kidneys. They are responsible for forming urine.
-Ureters: run from renal hilum to the posterior bladder, passageway for urine, smooth muscle layers contract to propel urine into bladder via peristalsis.
-Bladder: muscular sac that temporarily stores urine.
-Micturition→ voiding, detrusor muscle contracts (PNS & SNS), internal urethral sphincter opens, external urethral sphincter opens (somatic nervous system).
Upper urinary tract: kidneys and ureters
Lower urinary tract: bladder and urethra

Pathophysiology of Disease

Infection of the upper or lower urinary tract caused by bacteria (mainly E coli.), fungus, or parasites. Classifications include pyelonephritis, cystitis, urethritis, and urosepsis. UTIs can be complicated (coexisting with other disease) or uncomplicated (only involving the bladder)
Patho= urinary tract above the urethra is normally sterile and has defense mechanisms (complete emptying of the bladder, ureterovesical junction competence, ureteral peristaltic activity, antibacterial characteristics like a low pH <6.0, high urea concentration, and abundant glycoproteins. Alteration of defense mechanisms increases t/f UTI. With UTIs, organisms will enter via ascending route from urethra and originate in the perineum (they can enter via bloodstream and lymphatics but that is less common). Gram-negative bacilli that is normally found in the GI tract is the most common cause.

Anticipated Diagnostics

Labs

Dipstick UA (nitrites, WBC, leukocyte esterase), C&S (determine what organism is cause, how to tx)
CBC & BMP

Additional Diagnostics

-H&P
-US and CT scan to r/o obstruction.
-IVP

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

Contributing Risk Factors	Signs and Symptoms
BPH, tumor, neurogenic bladder, catheters, calculi, instrumentation, obesity, congenital defects, fistula, age, HIV, diabetes, constipation, pregnancy, multiple sex partners, inadequate hydration, females, using feminine products incorrectly, failure to void after intercourse.	Upper urinary tract: fever, chills, flank pain. Lower urinary tract (LUTS): bladder storage → frequency, urgency, incontinence, nocturia, nocturnal enuresis. Bladder emptying → weak stream, hesitancy, intermittency, post-void dribbling, retention, and dysuria. Severe systemic illness: abdominal/back pain, fever, sepsis, decreased kidney function.

NCLEX IV *(7)*: Reduction of Risk

Possible Therapeutic Procedures	Prevention of Complications
Non-surgical Administer abx Surgical n/a	(What are some potential complications associated with this disease process) Urosepsis: UTI spreads to kidney and can spread to the rest of the body causing septic shock.

NCLEX IV *(6)*: Pharmacological and Parenteral Therapies

Anticipated Medication Management
-Abx: Bactrim, Nitrofurantoin, Ampicillin, Amoxicillin, Cephalosporins, Ciprofloxacin & Levofloxacin for complicated UTIs -Antifungals: Amphotericin -Urinary analgesic: AZO/Phenazopyridine

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

Non-Pharmacologic Care Measures
Offering bedpan or assisting to BR q2hrs, provide thorough peri care, apply heat, aseptic technique when handling catheters, encouraging fluid intake, teaching!

NCLEX III *(4)*: Psychosocial/Holistic Care Needs

What stressors might a patient with this diagnosis be experiencing?
Pain, lack of knowledge, incontinence & other LUTS (can be embarrassing!)

Client/Family Education

List 3 potential teaching topics/areas
• wipe from front to back, thorough perineal care • evacuate the bladder frequently and completely •drink adequate fluids (cranberry juice is good for keeping urine acidic!)

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

Multidisciplinary Team Involvement (Which other disciplines do you expect to share in the care of this patient)
Possibly urologist & nephrologist, imaging team, lab, pharmacy, PCP

Potential Patient Problems (Nursing Diagnoses) based on Research

List two potential patient problems you will be addressing as part of your nurse's notes, along with clinical reasoning, goals/expected outcomes, assessments, and priority nursing interventions. The patient problems must be in priority order.

Problem # 1: Impaired Urinary Elimination
Clinical Reasoning: UTI → organisms enter the urinary tract and cause infection, infection causes: incontinence, hesitancy, intermittency, post-void dribbling, retention, dysuria, weak stream, urgency, frequency, and nocturia.

Goal/EO: Client will achieve a normal urinary elimination pattern evidenced by absence of urinary disorders (dysuria, incontinence, retention, etc.) by the end of my care. Client will demonstrate via teach-back method ways to prevent future UTIs during my care. Client will have urinary output of at least 30mls/hr.

Ongoing Assessments: I&O q8hrs, urine color and characteristics when client voids, pattern of elimination (frequency and amount) qshift, palpate for bladder distension qshift, signs of urinary incontinence qshift, current medications qshift, ability to ambulate to BR qshift, UA and C&S results if/when collected, lab values when drawn (WBC).

NI:
1. Perform perineal care thoroughly and daily
2. Offer bedpan or assistance to BR q2hrs
3. Encourage to evacuate bladder completely when urinating qshift
4. Encourage to drink fluids (client weight/2 in oz) qshift
5. Teach to wipe from front to back qshift
6. Administer antibiotics as prescribed q24hrs

Problem # 2 Acute Pain: Urinary Tract

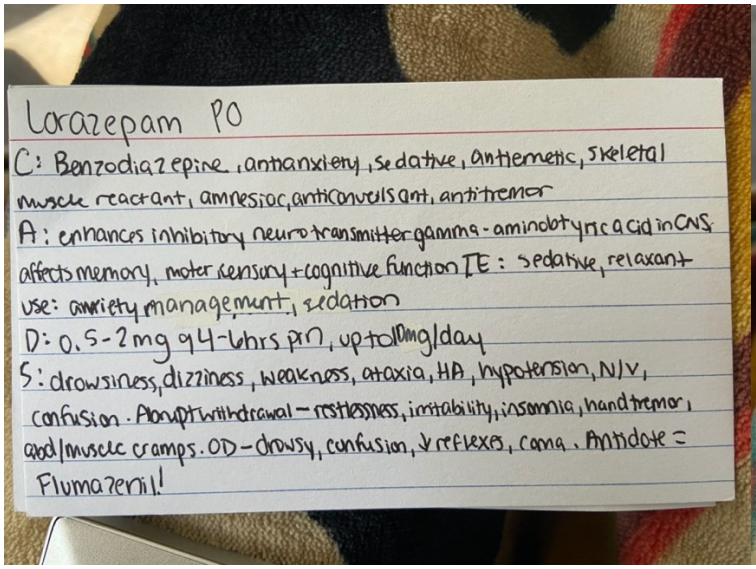
Clinical Reasoning: UTI→ infection causes immune response to the urinary tract which can become red and irritated especially when urine moves through the lower urinary tract. (Flank pain can also occur with UTIs of the upper urinary tract.)

Goal/EO: Client will verbalize a pain level of <4 out of 10 on a numerical pain scale by the end of my care. Client will have a RR of 12-20 and HR 60-90 during my care.

Ongoing Assessments: VS q4hrs (BP, HR< RR), N/V or diaphoresis qshift, pain level, quality, severity, onset & duration, alleviating factors shift or prn pain, prn meds available for client's pain qshift.

NI:
1. Administer Phenazopyridine/AZO as prescribed qshift
2. Apply heating pad to the suprapubic area or back prn pain
3. Provide sitz bath prn pain
4. Teach to finish antibiotic regimen for complete healing qshift
5. Encourage to drink fluids qshift
6. Teach ways to prevent future/recurrent UTIs qshift

Use this page to complete your *two* assigned CADSCANS:



Lorazepam PO

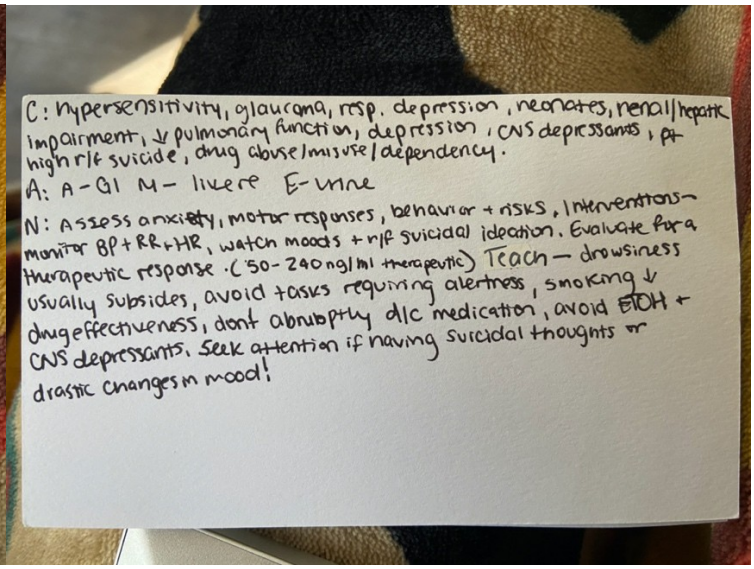
C: Benzodiazepine, anti-anxiety, sedative, antiemetic, skeletal muscle reactant, amnesiac, anticonvulsant, antitremor

A: enhances inhibitory neurotransmitter gamma-aminobutyric acid in CNS affects memory, motor sensory + cognitive function TE: sedative, relaxant

use: anxiety management, sedation

D: 0.5-2mg q4-6hrs prn, up to 10mg/day

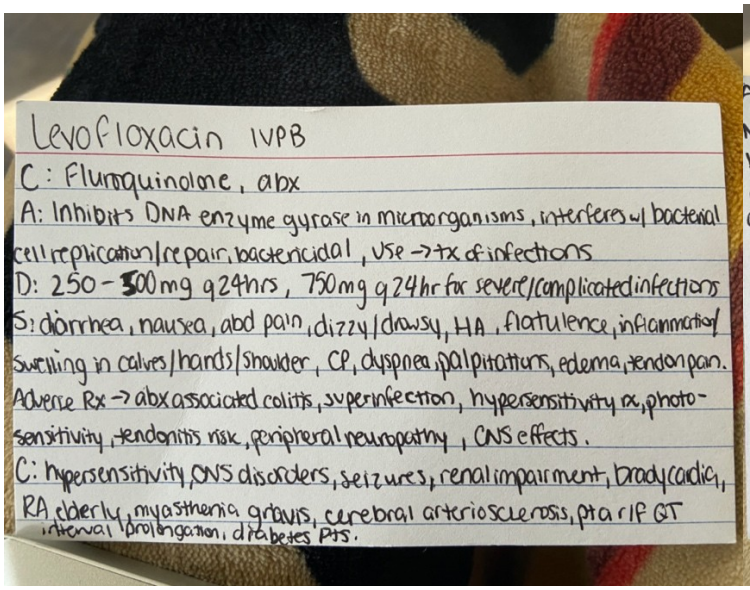
S: drowsiness, dizziness, weakness, ataxia, HA, hypotension, N/V, confusion. Abrupt withdrawal – restlessness, irritability, insomnia, hand tremor, acid/muscle cramps. OD – drowsy, confusion, ↓ reflexes, coma. Antidote = Flumazenil!



C: hypersensitivity, glaucoma, resp. depression, neonates, renal/hepatic impairment, ↓ pulmonary function, depression, CNS depressants, pt high r/f suicide, drug abuse/misuse/dependency.

A: A - GI M - liver E - urine

N: Assess anxiety, motor responses, behavior + risks, Interventions - monitor BP + RR + HR, watch moods + r/f suicidal ideation. Evaluate for a therapeutic response. (50-240 ng/ml therapeutic) Teach – drowsiness usually subsides, avoid tasks requiring alertness, smoking ↓ drug effectiveness, dont abruptly d/c medication, avoid ETOH + CNS depressants. Seek attention if having suicidal thoughts or drastic changes in mood!



Levofloxacin IVPB

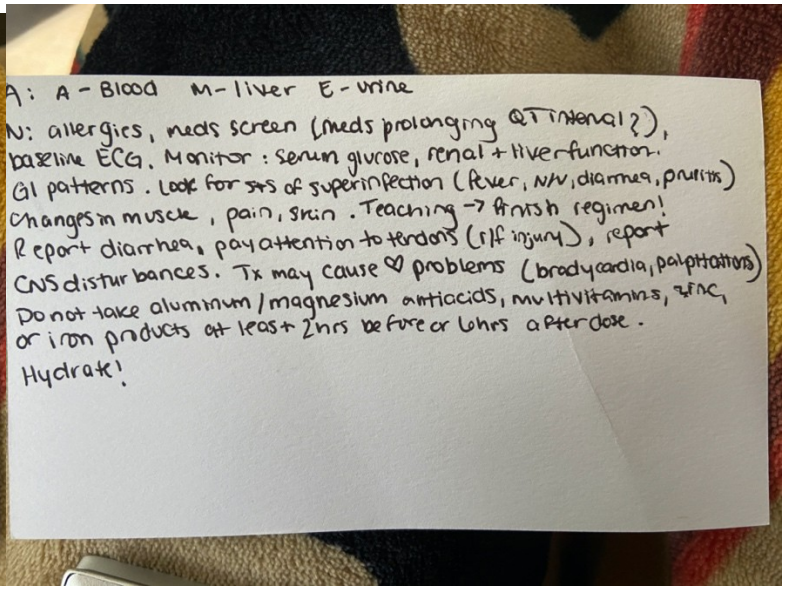
C: Fluroquinolone, abx

A: Inhibits DNA enzyme gyrase in microorganisms, interferes w/ bacterial cell replication/repair, bactericidal, use → tx of infections

D: 250-500mg q24hrs, 750mg q24hr for severe/complicated infections

S: diarrhea, nausea, abd pain, dizzy/drowsy, HA, flatulence, inflammation/ swelling in calves/hands/shoulder, CP, dyspnea, palpitations, edema, tendon pain. Adverse Rx → abx associated colitis, superinfection, hypersensitivity rx, photo-sensitivity, tendonitis risk, peripheral neuropathy, CNS effects.

C: hypersensitivity, CNS disorders, seizures, renal impairment, bradycardic, RA, elderly, myasthenia gravis, cerebral arteriosclerosis, pt r/f QT interval prolongation, diabetes pts.



A: A - Blood M - liver E - urine

N: allergies, meds screen (meds prolonging QT interval?), baseline ECG. Monitor: serum glucose, renal + liver function. GI patterns. Look for s/s of superinfection (fever, N/V, diarrhea, pruritis) changes in muscle, pain, skin. Teaching → finish regimen! Report diarrhea, pay attention to tendons (r/f injury), report CNS disturbances. Tx may cause ♡ problems (bradycardia, palpitations) Do not take aluminum/magnesium antiacids, multivitamins, zinc, or iron products at least 2hrs before or 6hrs after dose.

Hydrate!

ATI Virtual Clinical Questions and Reflection:

1) Identify two members of the healthcare team collaborating in the care of this patient:
    a. **RN, Charge nurse**
    b. **Provider**
2) Did your patient have any abnormal blood work (lab)? If so, *select a priority finding* and discuss why that value is concerning.
    a. WBC count was elevated at 13,000 which is indicative of infection, also H&H were low which could be due to the fluid overload diluting the blood. ABGs pH 7.28, PaCO2 25, and HCO3 20 indicate metabolic acidosis.
3) Did your patient have any abnormal clinical diagnostic tests? If so, what were they and what was the abnormal finding? What can that indicate?
    a. UA: cloudy (due to all the things listed here inside the urine), slight amber (urine is more concentrated), specific gravity 1.039 (kidneys are not diluting the urine as well), protein x2 (UTI), , +leukocyte esterase (infection), WBC x10 (infection), RBC 4-6 (UTI), +RBC casts (HF, inflammation, bacterial infection). CXR: faint, rounded density seen on the left lower lobe. Lungs were dilated and consistent with COPD, cardiomegaly with hypertrophy of the L ventricle, findings consistent with HF. XR L hip and femur: basicervical-type femoral neck fracture, high intertrochanteric fracture/basicervical. XR left elbow: no fracture but. Noted soft tissue shadow and muscle contusion.
4) What were some of the teaching topics covered in the scenario? Why were they important to the care of this patient?
    a. **.** The provider explained that due to her HF she was not a candidate for surgery. This could possibly motivate Ms.Baxter manage her HF better once she is discharged.
    b. **.** The provider explained what Buck's traction was and that though it may affect her breathing, the nursed would still be in to check on her. She needed to lay immobilized in order for the fracture to heal properly.
    c. **.** RN instructed her to cough and deep breathe to help break up the mucus in her lungs and cough it up. This could help her breathing.
5) What were some steps the nursing team demonstrated that promoted patient safety?
    a. Hand hygiene before all care, wearing gloves
    b. The RN requested med reconciliation with the pharmacy due to her confusing medications. He later read back all medication orders with pharmacy before hanging up the phone.
    c. The night shift nurse stayed with Ms.Baxter when she suspected sepsis and waited for the charge nurse to arrive
6) 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 provider reassured Ms.Baxter that nurses would be in to check her breathing and turn her as needed while she had to lay flat for Buck's traction. The nurse asked Ms.Baxter to tell him more about her concerns when she was upset and started to tear up about her current health condition which opened a door for her to explain her fears and questions and for him to provide some teaching for her. The night shift nurse held Ms.Baxter's hand and rubbed her shoulder when she became confused and showed s&s of shock.

b. If **no**, describe:

_____

_____

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 virtual patient.

2) Review your Nursing Process Form: Did you select a correct priority nursing problem?

   a. If **yes,** write it here: _____

   b. If **no,** write what you now understand the priority nursing problem to be: **Risk for shock: distributive (sepsis)**

3) Review your Nursing Process Form: Did you see many of your anticipated nursing assessments and interventions used?

   a. Indicate (circle, star, highlight) the ones you saw utilized during the scenario.

   b. Were there interventions you included that *were not* used in the scenario that could help this patient?

      i. If **yes,** describe:

      The only interventions that could apply to this patient are administration of abx and teaching to prevent further UTIs.

      ii. If **no,** describe:

      _____

      _____

4) Often patient care will take a different direction than we anticipated at the beginning of our shift. Did that happen here? _____YES_____

   a. How did that impact the nursing care delivered?

   The nurses had different priority assessments and interventions than they would for a basic UTI. The pt already came in with urosepsis and so rather than focusing on infection of the urinary tracts you had to think about the whole body since it went into septic shock. The pts CHF also proved to be a priority due to how the fluid overload Ms.Baxter was experiencing was affecting her breathing and airway (ABCs). The focus of care became ridding her of the fluid overload and treating her sepsis. On top of all of that she sustained a fall that led to a hip fracture requiring Buck's traction which then caused a pressure ulcer due to immobility.

   b. Did it create a new priority nursing problem (diagnosis)? (Refer to your NANDA list)

      i. Write it here: Multiple: **Risk for shock, decreased cardiac output**, excess fluid volume, impaired physical mobility, impaired skin integrity

5) What was your biggest “take-away” from participating in the care of this patient? How did this impact your nursing practice?

I realize that I need to be prepared for absolutely anything when caring for patients. When I started this scenario I assumed I would be seeing classic signs of a UTI, but Ms.Baxter showed anything but that. Her underlying condition of HF played a huge role in my care, then she sustained a fall which led to a fracture which led to a pressure ulcer from immobility which needed to be addressed. Then she showed signs of septic shock which is an incredibly serious complication. It just shows that I need to keep my mind open and be monitoring for *anything* abnormal with my patients because many diseases and conditions lead to other diseases and complications.