

ATI Real Life Student Packet  
N202 Advanced Concepts of Nursing  
2024

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ATI Scenario: Chronic Kidney Disease

**To Be Completed Before the Simulation**

\*Blue boxes should be completed using textbook information. What do you expect to find? This information should be collected before you start the ATI simulation\*

Medical Diagnosis: Chronic Kidney Disease

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

Anatomy and Physiology

Normal Structures

- The primary functions of the kidneys are to (1) regulate the volume and composition of extracellular fluid (ECF) and (2) excrete waste products from the body.
- The kidneys also function to control BP, make erythropoietin, activate vitamin D, and regulate acid-base balance.
- The paired kidneys are bean-shaped organs located retroperitoneally (behind the peritoneum) on either side of the vertebral column.
- The right kidney is positioned lower than the left.
- Each kidney is surrounded by a considerable amount of fat and connective tissue that cushions, supports, and helps the kidney maintain its position.
- A thin, smooth layer of fibrous membrane called the capsule covers the surface of each kidney. The capsule protects the kidney and serves as a shock absorber if the area is traumatized from a sudden force or strike.
- The hilus on the medial side of the kidney serves as the entry site for the renal artery and nerves and as the exit site for the renal vein and ureter.
- The parenchyma is the actual tissue of the kidney. The outer layer of the parenchyma is the cortex, and the inner layer is the medulla.
- The kidneys are connected to the renal pelvis and then to the bladder through ureters which transport urine to the bladder before it is excreted through the urethra.
- An adrenal gland lies on top of each kidney.
- The nephron is the functional unit of the kidney (each has ~1 million).

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

Pathophysiology of Disease

- Chronic Kidney Disease (CKD) involves progressive, irreversible loss of kidney function.
- Because the kidneys are highly adaptive, kidney disease is often not recognized until there has been considerable loss of nephrons.
- CKD affects all body systems.
- CKD has many different causes – diabetes (~50%) and hypertension (~25%).
- CKD is defined as either the presence of kidney damage or a decreased GFR less than 60mL/min for longer than 3 months.
- Stages of CKD:
  - **Stage 1** – kidney damage w/ normal or ↑ GFR (≥90mL/min)
  - **Stage 2** – kidney damage w/ mild ↓ GFR (60-89mL/min)
  - **Stage 3a** – moderate ↓ GFR (45-59mL/min)
  - **Stage 3b** – moderate ↓ GFR (30-44mL/min)
  - **Stage 4** – severe ↓ GFR (15-29mL/min)
  - **Stage 5** – kidney failure (<15mL/min or dialysis)
- Diabetes – Each kidney is made up of millions of tiny filters called nephrons. Over time, hyperglycemia from diabetes can damage blood vessels in the kidneys as well as nephrons so they lose function. Many people with diabetes also develop hypertension, which can damage kidneys too.
- Hypertension – The nephrons in the kidneys are supplied with a dense network of blood vessels, and high volumes of blood flow through them. Over time, uncontrolled high blood pressure can cause arteries around the kidneys to narrow, weaken or harden. These damaged arteries are not able to deliver enough blood to the kidney tissue. Damaged kidney arteries don't filter blood well. Kidneys have small, finger-like nephrons

<ul style="list-style-type: none"><li>- Each nephron is composed of the glomerulus, Bowman's capsule, and a tubular system (the tubular system consists of the proximal convoluted tubule, loop of Henle, distal convoluted tubule, and collecting tubules).</li><li>- Blood flow to the kidneys, around 1200mL/min, accounts for 20%-25% of cardiac output.</li><li>- Urine formation is the outcome of a complex, multistep process of filtration, reabsorption, secretion, and excretion of water, electrolytes, and metabolic waste products.</li><li>- The amount of blood filtered each minute by the glomeruli is expressed as the glomerular filtration rate (GFR); the normal GFR is about 125mL/min.</li></ul>	<p>that filter your blood. Each nephron receives its blood supply through tiny hair-like capillaries. When the arteries become damaged, the nephrons don't receive the essential oxygen and nutrients. Then the kidneys lose their ability to filter blood and regulate the fluid, hormones, acids and salts in the body. Damaged kidneys fail to regulate blood pressure. Healthy kidneys respond to a hormone called aldosterone which is produced in the adrenal glands, to help the body regulate blood pressure. Kidney damage and uncontrolled hypertension contribute to a negative spiral. As more arteries become blocked and stop functioning, the kidneys eventually fail.</p> <ul style="list-style-type: none"><li>- Other risk factors for CKD include: age &gt;60yrs, cardiovascular disease, ethnic minority (e.g., black, Native American, exposure to nephrotoxic drugs, and family hx.</li></ul>
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**To Be Completed Before the Simulation**

Anticipated Patient Problem: Excess Fluid Volume

Goal 1: ATI will be normovolemic as evidenced by a urine output  $\geq 30\text{mL/hr}$ , absence of edema, and no shortness of breath during my time of care.

<b>Relevant Assessments</b>	<b>Multidisciplinary Team Intervention</b>
(Prewrite) What assessments pertain to your patient's problem? Include timeframes	(Prewrite) What will you do if your assessment is abnormal?
Assess HR, BP, and RR q4hr and PRN.	Administer antihypertensive medication as ordered during my time of care.
Assess SpO <sub>2</sub> , lung sounds for wheezes and crackles, use of accessory muscles, nasal flaring, and for shortness of breath q4hr and PRN.	Maintain HOB in semi- or high-Fowler's position to facilitate lung expansion as tolerated.
Monitor weight and peripheral edema qshift and PRN.	Administer diuretic medication as ordered during my time of care.
Monitor strict intake and output continuously.	Educate on fluid and sodium restriction qshift and PRN.
Monitor serum BUN and creatinine qshift.	Limit protein intake PRN during my time of care.
Assess mucous membranes and skin turgor qshift and PRN.	Provide frequent mouth care PRN.

Goal 2: ATI will maintain a HR (60-100), BP (within 10mmHg of 120/80), and RR (12-20) WNL during my time of care.

**To Be Completed Before the Simulation**

Anticipated Patient Problem: Risk for Electrolyte Imbalance

Goal 1: ATI will maintain potassium (3.5-5), sodium (135-145), and calcium (8.5-10.5) WNL during my time of care.

<b>Relevant Assessments</b>  (Prewrite) What assessments pertain to your patient's problem? Include timeframes	<b>Multidisciplinary Team Intervention</b>  (Prewrite) What will you do if your assessment is abnormal?
Monitor serum electrolytes (e.g., potassium, sodium, calcium, etc.) qshift.	Educate on dialysis qshift and PRN.
Monitor heart sounds for rate and rhythm q4hr and PRN (or continuously if on monitor).	Administer potassium supplement as ordered during my time of care.
Monitor restlessness, irritability, LOC, and neuromuscular function shift and PRN.	Educate on signs and symptoms of hyperkalemia, hyper/hyponatremia, and hypocalcemia qshift and PRN.
Assess knowledge of foods containing potassium, calcium, sodium, and phosphorus on admission.	Educate on foods containing potassium (i.e., leafy greens, apricots), calcium (i.e., seeds, cheese, yogurt), sodium (i.e., cured meats, frozen and canned foods), and phosphorus (i.e., meats and dairy) qshift and PRN.
Assess respiratory system for weakness q4hr and PRN.	Administer supplemental oxygen PRN.
Assess adherence to medication regimen and knowledge of medications qshift and PRN.	Educate on hyperphosphatemia and how phosphorus binders work to prevent the progression of bone disorders qshift and PRN.

Goal 2: ATI will be free of arrhythmias as evidenced by normal sinus rhythm on continuous cardiac monitoring during my time of care.

**To Be Completed During the Simulation:**

#1 **Actual Patient Problem:** Excess Fluid Volume      Clinical Reasoning: CKD; weight gain; creatinine ↑8; +2 pitting edema BIL LE; rhonchi anterior and posterior BIL

Goal: A.S. be normovolemic as evidenced by a urine output ≥ 30mL/hr, absence of edema, and no shortness of breath during my time of care.      Met:     Unmet:

Goal: A.S. will maintain a HR (60-100), BP (within 10mmHg of 120/80), and RR (12-20) WNL during my time of care.      Met:     Unmet:

#2 **Actual Patient Problem:** Risk for Electrolyte Imbalance      Clinical Reasoning: CKD; potassium ↑ 6; calcium ↓ 7.8; phosphorus ↑ 7.5; headache; N/V; constipation

Goal: A.S. will maintain potassium (3.5-5), sodium (135-145), and calcium (8.5-10.5) WNL during my time of care.      Met:

Unmet:

Goal: A.S. will be free of arrhythmias as evidenced by normal sinus rhythm on continuous cardiac monitoring during my time of care.      Met:     Unmet:

Additional Patient Problems:

- #3 Decreased Cardiac Output
- #4 Deficient Knowledge: CKD
- #5 Risk for Infection
- #6 Anxiety
- #7 Constipation

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
2 & 3	DAY 1 1800	Stated “I am just so tired.”	DAY 1 1800	Assisted into bed	DAY 1 1800	Stated “Moving around by myself is very difficult...my leg just feels so tight.”
1	DAY 1 1803	Edema in BIL LE; SOB	DAY 1 1803	Raised HOB to facilitate lung expansion	DAY 1 1805	In position of comfort
1 & 3	DAY 1 1803	Complaints of SOB; SpO2 94% RA	DAY 1 1805	Applied oxygen 2LNC	DAY 1 1820	SpO2 96%
1	DAY 1 1820	AV fistula L arm; cannot receive hemodialysis today (scheduling issue)	DAY 1 1825	Placed a limb alert bracelet on L wrist and sign on wall above bed	DAY 1 1830	Voided 150mL
	DAY	Elevated potassium	DAY	Educated on	DAY	Verbalized

1, 2, & 3	1 1840	6 (WNL 3.5-5)	1 1920	telemetry and IV insertion; applied continuous cardiac monitor; inserted 20g IV in forearm; allowed time for questions	1 1920	understanding; telemetry shows elevated T waves; IV flushes w/o difficulty; stated that there were no questions
1, 2, & 3	DAY 1 1940	T 37.0°C, HR 116, RR 22, BP 170/90, SpO2 96% 2LNC; K ↑6	DAY 1 1940	Administered Furosemide 80mg IV bolus	DAY 1 2125	HR 110, BP 178/86; K ↑5.9; voided 160mL
4	DAY 1 2120	Expressed confusion about how the fistula works with hemodialysis and possible complications	DAY 1 2120	Educated on hemodialysis and complications	DAY 1 2120	Stated understanding that hemodialysis may decrease blood pressure
1, 2, & 3	DAY 1 2122	Decreased calcium 7.8 (WNL 9-10.5); elevated phosphorous 7.5 (WNL 3-4.5), GFR 8mL/min (WNL ≥ 90mL/min)	DAY 1 2122	Educated to take phosphate binders w/ meals	DAY 2 0400	Calcium 9; elevated phosphorus 5.5
1 & 3	DAY 1 2125	Pitting edema +2 in BIL LE	DAY 1 2125	Up to chair w/ 2LNC	DAY 1 2125	Denies pain, reports some improvement in breathing
1, 2, & 3	DAY 1 2240	Potassium level relatively unchanged (6 → 5.9), hyperkalemic; HR 112, BP 182/90	DAY 1 2300	Reported ineffectiveness of Furosemide as evidenced by BP to Dr. Lanzo; Administered Labetalol 20mg IV bolus	DAY 1 2330	HR 108, BP 164/80, voided 120mL
1, 2, & 3	DAY 2 0400	Weight 72.6kg; T 37.2°C, HR 96, RR 16, BP 150/80, SpO2 97% 2INC	DAY 2 0600	Hold medications for dialysis	DAY 2 0715	Resting in bed; denies pain or discomfort
1, 2, & 3	DAY 2 0715	Lips dry; scattered rhonchi anterior and posterior BIL; +2 pitting edema in BIL LE; weakness w/ gait; voided 100mL; T 37.1°C, HR 94, RR 18 slightly labored, BP 154/84, SpO2 96% 1LNC	DAY 2 0745	Off floor to dialysis	DAY 2 1215	Lips moist; skin cool and dry; scattered rhonchi anterior BIL, posterior clear BIL; weakness w/ gait; weight 71.5kg; voided 30mL
	DAY 2	Bowel sounds hypoactive x4	DAY 2	Administered Glipizide XL 20mg	DAY 2	T 37.3°C, HR 88, RR 18 unlabored,

1, 2, 3, 5, & 7	0715	quadrants; peritoneal catheter intact – site w/o drainage, redness, or edema noted	1000	PO, Aspirin 81mg PO, Losartan 50mg PO, Linagliptin 5mg PO, Atorvastatin 20mg PO, Docusate sodium 100mg PO	1215	BP 134/76, SpO2 97% RA
2	DAY 2 1230	Emesis 5mL, refused lunch r/t nausea; reports generalized fatigue; complaints of headache (2/10 pain)	DAY 2 1230	Provided calm, quiet period of rest	DAY 2 1300	Reported nausea has subsided
4 & 6	DAY 2 1310	Stated “I guess all of this is just so overwhelming...I feel that I don’t have any control over anything anymore, and that my life is changing.”	DAY 2 1315	Offered to contact case management to provide information regarding dialysis management	DAY 2 1318	Stated “Thank you.”
1, 2, & 3	DAY 2 1400	T 37.1°C, HR 80, RR 20, BP 140/80, SpO2 96% RA	DAY 2 1600	Dr. Lanzo ordered for discharge home tomorrow after dialysis	DAY 2 1600	Potassium 4.7; normal sinus rhythm @ HR 80
4, 5, & 6	DAY 3 1400	[D/C to home] Stated “I am concerned about my peritoneal catheter. I don’t want this to get infected.”	DAY 3 1405	Educated on peritoneal catheter care routine	DAY 3 1410	Demonstrated understanding of proper catheter care via teach-back
1, 2, & 4	DAY 3 1430	T 36.6°C, HR 88, RR 16, BP 146/88, SpO2 97% RA, reports 0/10 pain; states “I understand my restriction of proteins and I’m having trouble selecting food.”	DAY 3 1440	Educated on food options and assisted in modify cultural food dishes to adhere to sodium restriction	DAY 3 1450	Stated “ I will give it a try.”
4 & 6	DAY 4 1200	Stated “I feel more comfortable with my hemodialysis and even have established a new routine. I eve have new friends at the dialysis center.”	DAY 4 1205	Offered opportunity to ask any questions and voice concerns before D/C from home health	DAY 4 1210	Stated “No. Thank you for helping me.”

**To Be Completed After the Simulation**

\*The orange boxes should be filled out with your simulation patient's actual results, assessments, medications, and recommendations\*

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

- Actual Labs/ Diagnostics
- Renal scan or ultrasounds
  - CT scan
  - Renal biopsy
  - **Urinalysis: Amber and cloudy**
  - **Serum electrolytes: Potassium 6.0, Calcium 8.0, Phosphorus 7.5**
  - **CBC: RBC 3.1, Hgb 10.2, Hct 32%, WBC 14**
  - **CMP/BMP: BUN 42, Creatinine 8.0, Glucose 174**
  - Lipid profile
  - **GFR: 8**

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

- Signs and Symptoms
- Uremia
  - **Psychologic: anxiety, depression**
  - **Cardio: HTN, HF, CAD, pericarditis, PAD**
  - **Gastro: anorexia, N/V, bleeding, gastritis**
  - **Endocrine/Repro: hyperparathyroidism, thyroid abnormalities, amenorrhea, erectile dysfunction**
  - **Metabolic: carbohydrate intolerance, hyperlipidemia**
  - **Hematologic: anemia, bleeding, infection**
  - **Neuro: fatigue, HA, sleep disturbances, encephalopathy**
  - **Ocular: hypertensive retinopathy**
  - **Pulmonary: edema, emic pleuritis, pneumonia**
  - **Integ: pruritis, ecchymosis, dry/scaly skin**
  - **Musculo: vascular and soft tissue calcifications, osteomalacia, osteitis fibrosa**
  - **Peripheral neuropathy: paresthesias, restless legs syndrome**

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

- Contributing Risk Factors
- **Age >60yrs**
  - Cardiovascular disease
  - **Diabetes**
  - Ethnic minority (e.g., black, Native American, **Hispanics**)
  - Exposure to nephrotoxic drugs
  - Family hx
  - **Hypertension**

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

- Therapeutic Procedures
- Non-surgical
  - **Nutritional therapy**
  - **Dialysis**
  - Surgical
  - Renal biopsy
  - Kidney transplant
  - **Fistula placement**

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

- Prevention of Complications  
(Any complications associated with the client's disease process? If not what are some complications you anticipate)
- **Management of diabetes**
  - **Control hypertension**
  - Exercise regularly
  - **Avoid salty foods/eat a well-balanced diet**
  - Limit alcohol consumption

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

- Medication Management
- Calcium supplementation
  - ACE inhibitors
  - Erythropoietin therapy
  - **Phosphate binders**
  - **Furosemide 80mg IV**
  - **Labetalol 20mg IV**
  - **Glipizide XL 20mg PO**
  - **Aspirin 81mg PO**
  - **Losartan 50mg PO**
  - **Linagliptin 5mg PO**
  - **Atorvastatin 20mg PO**
  - **Docusate Sodium 100mg PO**

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

- Non-Pharmacologic Care Measures
- **Nutritional therapy (protein, fluid, sodium, potassium, and phosphate restrictions)**
  - **Dialysis**

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

- Stressors the client experienced?
- **Lifestyle changes**
  - Pain
  - **Financial concerns**
  - **Anxiety**

**Client/Family Education**

- Document 3 teaching topics specific for this client.
- **Nutritional therapy/restrictions**
  - **Dialysis**
  - **Medication regimen**

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

- Multidisciplinary Team Involvement  
(Which other disciplines were involved in caring for this client?)
- Nephrologist
  - **Nutritionist/dietician**
  - Urologist
  - Cardiologist
  - **Primary care physician**
  - Endocrinologist

Patient Resources

- **CKD support groups**
- **Support system (family/friends)**
- Primary care physician/specialists
- **Case management**

**Reflection Questions**

Directions: Write reflection including the following:

1. What was your biggest “take away” from participating in the care of this client?

**My biggest “take away” from participating in the care of Ms. Swisher was how important it is to adapt the necessary care and education of a client to their cultural and religious traditions/beliefs/practices. Modifying Ms. Swisher’s diet was of concern to her because she participates in a weekly potluck interfaith meeting where everyone brings food to share. She also expressed that her provider suggested to limit many of the ingredients she includes in her favorite dishes. While it is important to adhere to the dietary modifications due to her diagnosis, it is equally as important to enjoy life and collaborate to find ways that Ms. Swisher can still participate in things she values in life.**

2. What was something that surprised you in the care of this patient?

**Something that surprised me in the care of Ms. Swisher was how chronic kidney disease can affect each body system. The kidneys are vital organs as they regulate the volume and composition of extracellular fluid, excrete waste products from the body, control BP, make erythropoietin, activate vitamin D, and regulate acid-base balance. Chronic kidney disease affects electrolyte concentration, and when electrolytes become out of range from the normal limits, it can begin causes problems in other body systems (i.e., hypo/hyperkalemia → cardiac). The careful and attentive monitoring of these values is crucial for client care, and in this simulation the nurses properly monitored and intervened when abnormal values occurred.**

3. What is something you would do differently with the care of this client?

**Something I would do differently with the care of Ms. Swisher is provide more information on resources for her. The nurse reviewed Ms. Swisher’s factors of Social Determinants of Health (SDOH) and found that food security, cost of medications, and ability to attend dialysis sessions all negatively impacted her health outcome. However, the simulation did not show any interventions to address this. Later when we saw Ms. Swisher with home health she stated that she pays her neighbor to pick up groceries for her and she does receive rides for her dialysis sessions, but the factor of income is never addressed. In a similar scenario, it is important to involve case management and provide several appropriate resources for the client to promote the opportunity for a better outcome.**

4. How will this simulation experience impact your nursing practice?

**This simulation experience will impact my nursing practice by ensuring to ask each client if they have a support system and if so, who it involves. It is just as important to educate those involved in a client’s life of their care as it is the client. If the client does not have a strong support system, it is a priority to explore options such as support groups specific to the diagnosis/circumstance and other resources so that the client has opportunities to obtain what they need to have a more positive health outcome. As a nurse, it is part of your responsibility to contact case management to assist in finding support and resources for clients.**