

ATI Real Life Student Packet  
N201 Nursing Care of Special Populations  
2025

Student Name: Olivia Morales

ATI Scenario: ATI Real Life 2

**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: **Cystic Fibrosis**

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

Anatomy and Physiology  
Normal Structures

**Respiratory system:**

- The upper respiratory tract contains the nose, mouth, pharynx, epiglottis, larynx, and trachea.
- Air initially enters the upper respiratory tract through the nose which is made of bone/cartilage and is divided into two nares by the nasal septum.
- The nose warms/humidifies the air that we breathe in and filters small particles out before the air reaches the lungs.
- The nasal cavity connects with the pharynx which is divided into three parts which are the nasopharynx, oropharynx, and laryngopharynx.
- Air moves through the oropharynx → laryngopharynx → epiglottis → larynx → trachea.
- Epiglottis: a small flap that covers the larynx to prevent aspiration of food/ liquid into the lungs.
- The trachea divides into the right and left mainstem bronchi at a spot called the carina, which is highly sensitive.
- Once air is through the carina it is now in the lower respiratory tract which consists of bronchi, bronchioles, alveolar ducts, and alveoli. -Right lung has three lobes (upper, middle & lower)
- Left lung has only two lobes (upper & lower) to accommodate for the heart.
- The mainstem bronchi divides to form the lobar, segmental, and subsegmental bronchi. Which then divide even more to form the bronchioles.
- The respiratory bronchioles are the most distant and they consist of smooth muscles that constrict and dilate as a response to stimuli.
- After the bronchioles there are the alveolar ducts in alveoli.
- The trachea and bronchi are the passageway for gases to go to and from the alveoli. The air in the trachea and bronchi is known as dead space as this air does not take part in gas exchange.
- The alveoli are the final piece of the respiratory tract; they are small sacs in the lungs that are the primary site of gas exchange between O<sub>2</sub> and CO<sub>2</sub>.
- In the alveoli there are pores of Kohn, which connect all the alveoli and allow air flow between alveolus and alveolus.

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

Pathophysiology of Disease

- Autosomal recessive disorder.
  - Cystic fibrosis is when someone has 2 mutations of the CFTR gene by receiving a mutation from each parent.
  - The CFTR gene makes a protein that controls the movement of chloride and sodium across membranes in the exocrine glands.
  - Without functional CFTR, chloride remains trapped in the cell, causing water and sodium to be reabsorbed into the cell instead of being secreted with chloride.
  - This lack of water causes mucus to thicken.
  - These thickened secretions obstruct the glandular ducts which equals inflammation and infection.
  - The lungs/pancreas are primarily affected.
- Effects of CF:
- airway obstruction
  - lung damage
  - blocked ducts preventing enzymes from reaching the small intestines= poor nutrient absorption.
  - diminished insulin secretion
  - impaired sodium reabsorption in sweat
  - underdeveloped vas deferens in men
  - thickened cervical fluid in women
- S/sx:
- chronic sinus infections
  - constipation
  - delayed puberty in adolescents
  - frequent respiratory infections
  - gastroesophageal reflux
  - hepatomegaly
  - poor weight gain/thin stature
  - salty skin
  - vomiting
- \*\*The average predicted age of survival is 46 years.
- Sweat test: diagnostic test used for CF by measuring the amount of chloride in a patient's sweat. Above 60 is usually a pos. diagnosis.

-In the alveoli there is a liquid called surfactant which lowers the surface tension in the alveoli. Surfactant reduces the amount of pressure needed to inflate the alveoli and makes them less likely to collapse.

-Pulmonary circulation provides the lungs with blood that is used in gas exchange.

-Bronchial circulation does not take part in gas exchange but does provide oxygen to the bronchi and other lung tissues.

-Diaphragm: major muscle of respiration. During inspiration it contracts, moves downwards, and increases intrathoracic volume.

-Oxygenation is the process of attaining oxygen from the atmospheric air and making it available to the organs and tissues.

-Oxygen is carried in the blood as dissolved oxygen and hemoglobin bound oxygen. PAO<sub>2</sub> represents the amount of oxygen dissolved in the plasma and SAO<sub>2</sub> is the amount of oxygen bound to hemoglobin.

-The movement of oxygen and carbon dioxide across the alveolar capillary membrane is called diffusion this direction of movement is from an area of higher concentration to an area of lower concentration.

-Ventilation is the act of inspiration (air in) and expiration (air out).

-Elastic recoil is the tendency for lungs to return their original size after being expanded through breathing.

-Compliance: ability of the lungs to expand, when it is decreased it is harder for the lungs to inflate.

-Resistance: is any obstacle relating to air flow during inspiration/expiration.

-Medulla: this is the respiratory center in the brain that responds to chemical and mechanical signals. It sends impulses to respiratory muscles through the spinal cord and phrenic nerves.

**GI system:**

-Ingestion is the intake of food.

-Ghrelin is released by the stomach and is appetite stimulation, leptin is the hormone for appetite suppression.

-Deglutition is swallowing and is the mechanical portion of indigestion.

-The mouth has the lips and buccal cavity. It also has 3 salivary glands: parotid, submaxillary, and sublingual.

-Esophagus: hollow muscular tube that moves food from pharynx to stomach.

-Stomach: usually J shaped. Contains gastric fluid and mucus. Has 3 main parts: the fundus, body, and antrum. Main functions are to store food, mix food with gastric secretions, and empty contents into the small intestine.

-Stomach absorbs small amounts of water, electrolytes, alcohol, and certain drugs.

-Stomach wall has 4 layers: serous, muscular, circular, and oblique.

-In the fundus there are chief cells that secrete pepsinogen and parietal cells that secrete hydrochloric acid, water, and intrinsic factor.

-Small intestine: main function is digestion and absorption of nutrients into the bloodstream. It is about 23 feet long, and has three parts: the duodenum, jejunum, and ileum.

-Villi: functional unit of the small intestine. They contain epithelial cells that produce enzymes.

-These enzymes chemically break down nutrients for our body to absorb them.  
-Digestion: physical and chemical breakdown of food.  
-The large intestine is for water and electrolyte absorption. It also forms feces and holds fecal matter until defecation.  
-Liver: largest internal organ in the  
-The liver carries out phagocytic activity to remove bacteria and toxins from the blood.  
-Pancreas: helps with production and release of enzymes.  
-Gallbladder: holds bile.



**To Be Completed Before the Simulation**

Anticipated Patient Problem: Impaired gas exchange.

Goal 1: Lung sounds will be clear, even, and unlabored during my time of care.

Goal 2: SpO2 will stay above 88% during my time of care.

<b>Relevant Assessments</b>  (Prework) What assessments pertain to your patient's problem? Include timeframes	<b>Multidisciplinary Team Intervention</b>  (Prework) What will you do if your assessment is abnormal?
Auscultate lung sounds for crackles, wheezes, diminished sounds, or rhonchi q2hrs.	Administer bronchodilators prn.
Assess respiratory rate, depth, and effort q2hrs.	Position in high fowlers and encourage pursed lip breathing prn.
Continuously monitor pulse oximetry.	Cluster care and maximize rest prn.
Assess for confusion, irritability, restlessness, and lethargy q4hrs.	Administer supplemental oxygen through nasal canula prn.
Assess ability to expectorate sputum q2hrs.	Encourage adequate hydration and mucolytics prn.
Assess for anxiety or fear prn.	Teach relaxation and breathing techniques prn.

**To Be Completed Before the Simulation**

Anticipated Patient Problem: Risk for infection.

Goal 1: Will not show any systemic signs of infection such as fever or chills during my time of care.

Goal 2: Will demonstrate proper hand hygiene and masking in public areas 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?
Assess sputum amount, color, and viscosity q2hrs.	Collect sputum cultures and encourage increased hydration prn. Administer abx prn.
Monitor for signs of gastrointestinal infection such as abdominal pain, diarrhea, or oily stools prn.	Encourage administration of pancreatic enzyme q shift.
Assess for systemic signs of infection such as fever or chills q2hrs.	Administer antipyretics and cooling blankets prn.
Evaluate for signs of sinus infections such as pain or congestion q2hrs.	Encourage nasal saline rinses and administer abx/steroids prn.
Assess understanding of infection prevention strategies q shift.	Teach hand hygiene, mask use, avoiding crowds, and avoiding sick contacts q shift.
Assess skin integrity prn.	Implement aseptic technique for line care and procedures prn.

**To Be Completed During the Simulation:**

Actual Patient Problem #1: Impaired gas exchange.  
 Goal: Lung sounds will be clear, even, and unlabored during my time of care. Met:  Unmet:

Goal: SpO2 will stay above 88% during my time of care. Met:  Unmet:

Actual Patient Problem #2: Risk for impaired nutrition.  
 Goal: Will adhere to enzymes and supplements during my time of care. Met:  Unmet:   
 Goal: Will tolerate high calorie, high proteins meals without nausea/vomiting during my time of care. Met:   
 Unmet:

Additional Patient Problems:  
 #3-Infection  
 #4-Deficient knowledge on Cystic Fibrosis  
 #5-Ineffective coping  
 #6-Risk for anaphylactic shock

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
Ineffective coping.	1230	Was recently in hospital a few weeks ago.	1300	Nurse Susan asked Gary why he thinks he’s back in the hospital again.	1310	His answer was I don’t know, and he directs the question to his mother instead.
Ineffective coping.	1300	Father states “if Gary would do what the provider asked him to, things might be a little better.”	1305	Nurse Susan acknowledged his fathers concerns and stated there are some things that will need to be discussed.	1310	Nurse Susan asked Gary what’s been going on for him to end up back so soon.
Infection	1300	On contact isolation precautions.	1310	Nurse Susan explained to Gary that all personnel will be wearing gowns/gloves, and he cannot leave to go to the game room.	1315	Gary said he will be so bored in his room.
Impaired gas exchange.	1300	Wheezing, persistent productive cough, barrel chest.	1310	Nurse Susan reached out to respiratory therapy to see when his treatments start.	1330	RT came shortly after to administer tx.

Risk for impaired nutrition.	1300	Low BMI. Small stature.	1400	Gastrostomy in place for inadequate weight maintenance.	1415	Enteral feedings prescribed by doctor during time of care.
Impaired gas exchange.	1315	PICC line in proper place.	1330	Nurse Susan administered Tobramycin 90 mg IV bolus.	1345	Nurse Susan is working on preparing the Gentamicin infusion.
Infection.	1315	Bilateral peri bronchial thickening, right lower lobe opacity suggestive of pneumonia. Positive for Burkholderia cepacia.	1345	Nurse Susan administered 130 mg IV bolus of Gentamicin.	1400	IV abx running without signs of anaphylaxis.
Risk for anaphylactic shock.	1345	Allergic to cephalosporins. Zosyn was prescribed.	1400	Nurse Susan clarified the order with the doctor.	1405	The medication was held per the doctors' orders.
Risk for impaired nutrition.	1400	Mother states Gary hasn't been eating well.	1415	Nurse Susan prepared an enteral feeding 300 mL bolus.	1500	Nurse Susan administers enteral feeding after RT tx.
Impaired gas exchange.	1415	Has a lot of mucus plugs, and coughing is not effective.	1430	RT performed percussion and chest physiotherapy.	1445	Wheezing improved after tx.
Ineffective coping.	1430	Stated he skips a lot of his home treatments.	1435	RT reminded him he needed to do them regularly.	1445	Nurse Susan states she will discuss him home regimen with him.
Infection	1500	States his sputum is kind of green this time. WBC=19.	1505	Provider prescribed sputum cultures.	1515	Gary performed oral hygiene, took a few deep breathes, and coughed into the container.
Risk for impaired nutrition.	1600	Gary states he wants real food.	1615	Nurse Susan said she will check the orders and order him something from the cafeteria.	1645	Nurse Susan brought Gary a meal and his Pancrepilase 6 capsules PO.
Deficient knowledge of cystic fibrosis.	1645	Gary's mother asks Nurse Susan if she were to have the baby what would be the risk of the baby having CF.	1650	Nurse Susan offers to gather print outs an come back to discuss the topic further.	1700	His mother is receptive to this plan and states she would like to do it before Gary's stepdad comes back.

**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
- CBC
  - BMP
  - Urinalysis
  - PFTs
  - Newborn screening
  - Chromosome testing
  - Serum chemistry testing
  - Pancreatic enzyme tests
  
  - Chest Xray
  - Chest CT
  - Sinus CT
  - Sweat test
  - Sputum cultures
  - Bronchoscopy

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

- Signs and Symptoms
- Cough (productive)
  - Clubbing of fingers/toes
  - Wheezing
  - Barell chest
  - Small stature
  - Low BMI
  - Constipation
  - Chronic sinus infections
  - Delayed puberty
  - GERD
  - Hepatomegaly
  - Vomiting
  - Salty skin

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

- Contributing Risk Factors
- Two parents with mutation\*\*

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

- Therapeutic Procedures
- Non-surgical
- Chest physiotherapy (vibrating vests)
  - Percussion
  - Nutrition therapy
  - Breathing techniques
  - Exercise
- Surgical
- Lung, liver, or pancreas transplant
  - Endoscopic sinus surgery

- Prevention of Complications  
(Any complications associated with the client's disease process? If not what are some complications you anticipate)
- Infection
  - Progressive lung disease
  - Malnutrition
  - Diabetes
  - Osteoporosis
  - Infertility
  - Increased cancer risk
  - Anxiety/depression

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

- Medication Management
- Pancrepilase (pancreatic enzymes)
  - Tobramycin
  - Albuterol
  - Gentamicin
  - Budesonide
  - CFTR modulators
  - Stool softeners
  - Insulin therapy
  - Vaccines

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

- Non-Pharmacologic Care Measures
- Support
  - Nutrition therapy
  - Exercise
  - Stress management
  - Sleep interventions
  - Therapy

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

- Stressors the client experienced?
- Fear/anxiety of death
  - Long hospitalizations (out of school, away from friends, etc...)
  - Different from peers
  - Impaired quality of life

**Client/Family Education**

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

Document 3 teaching topics specific for this client.

- Importance of hand hygiene, masks in public, and avoiding large crowds.
- Importance of continuing home treatments after discharge.
- Importance of a high calorie, well balanced diet.

Multidisciplinary Team Involvement

(Which other disciplines were involved in caring for this client?)

RT, nurses, surgeon, doctor, dietician, genetic counselor, pulmonologist, psychologists, social workers, school nurses, PT, pharmacists.

Patient Resources

- Support groups
- Cystic Fibrosis Foundation online
- CHOP
- Genetic counseling resources
- BreatheStrong CF online

**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 takeaway from this sim was the importance of education before discharge to make sure the patient follows their at home regimen. Gary had to be admitted again after being there just a few weeks ago, but this could’ve been prevented if he was adhering to his home treatments and medications better. This is a big takeaway for me because I know so many people are readmitted shortly after being discharged due to having issues with keeping up their treatment or there is a lack of understanding on what to do after discharge. This will be important for me to remember in the future because I can make sure that my patient has a good understanding before they leave the hospital so that I can help prevent them having to be readmitted.
2. What was something that surprised you in the care of this patient?  
 Gary was in a lot better condition than I was expecting. When I read that he was an inpatient Cystic Fibrosis patient I thought his respiratory status was going to be a lot worse and he was going to be in a more critical condition. Instead, he was only experiencing minor symptoms such as coughing and wheezing. He was also able to talk frequently, engage in his care, and soon after a few treatments he was even able to eat solid food.
3. What is something you would do differently with the care of this client?  
 I feel as though during the sim it is referenced many times that he is not adhering to his home regimen and his dad brings up concerns and while Nurse Susan acknowledge it, it isn’t touched on that much. During the sim we never see her go over his home regimen with him or provide him with any education/teaching on how it could help prevent him from being readmitted so often. If I was the lead nurse on this case I would’ve sat down with him, possibly with his mother outside the room and gotten down to the reason he is struggling to adhere to his regimen. I would also explain the risks he faces by not being compliant and try to find ways to make his regimen more possible for him. Hopefully by spending the extra time with him to communicate about what is going on, it could prevent him from having to come back so quickly.
4. How will this simulation experience impact your nursing practice?  
 I think this simulation will help prepare me to take care of patients with a chronic illness. I had never seen a Cystic Fibrosis case before this simulation and now I’ve seen the order of how treatments go and what the basic regimen during treatment might be. This will be beneficial for me in the future because if I ever have a Cystic Fibrosis patient I won’t be as lost about what is going on and I will have a better basis of what to expect. I think this will be very beneficial for not only me but also the safety of my patient as I can better understand how to treat them.
5. Discuss norms or deviations of growth and development that was experienced during the simulation, including developmental stage.

Gary is in the adolescent phase of development and one of the main deviations I noticed about him was related to his physical growth. This phase is commonly a time for boys to have growth spurts and continuing growth. Yet, Gary had a low BMI and short stature for his age due to his chronic illness. At this phase it is also common for the adolescent to seek independence, acceptance of peers, and an increase in comparing oneself to their peers. All three of these together may be contributing to his lack of adherence with his home regimen as he may feel different than his peers or may be trying to seek independence with his treatment/care. During adolescence it is also very common for teens to want to spend lots of time outside of the house socializing and engaging in activities, which was right on track with Gary as he was concerned with going to the game room and not being locked in his hospital room. Overall, he seemed very on track with his stage of development mentally, but there was some deviations in his physical growth due to his chronic illness.