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

Student Name: **Jocelyn Holden**

ATI Scenario: **ATI-2 (CF)**

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

The primary purpose of the respiratory system is gas exchange, allowing oxygen to enter the body and carbon dioxide to be removed. Air moves through the upper respiratory tract—the nasal cavity, pharynx, epiglottis, larynx, and trachea—before reaching the lower respiratory tract. In pediatrics, these airways are smaller and more easily obstructed, making children more vulnerable to complications when thick secretions are present, as seen in cystic fibrosis. The lower airway includes the trachea, which conducts air into the right and left main bronchi at the carina, and the bronchi and bronchioles, which progressively narrow as they lead to the alveoli. Because children have a smaller airway diameter and a more compliant chest wall, even minimal mucus or inflammation can significantly increase the work of breathing. Gas exchange occurs in the alveoli, which are connected by Pores of Kohn; however, the ventilation pathways are not fully developed in young children, increasing their risk for mucus plugging. Surfactant produced by the alveoli reduces surface tension and keeps them open, but children have fewer and smaller alveoli and higher oxygen demands than adults, making them more susceptible to hypoxia. The right lung is divided into three lobes and the left into two, and like adults, children rely heavily on the diaphragm for ventilation. During inspiration, the diaphragm contracts and increases intrathoracic volume, while during expiration it relaxes and decreases this volume. Together, these pediatric anatomical differences contribute to the increased respiratory vulnerability seen in conditions such as cystic fibrosis.

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

Cystic fibrosis (CF) is a genetic, autosomal recessive disorder caused by mutations on the CFTR gene located on chromosome 7. The CFTR protein normally functions as a chloride channel on epithelial cells found in the lungs, pancreas, intestines, sweat glands, and reproductive tract. In the respiratory system, the thick mucous blocks the airways, ultimately making it difficult for air to move in and out. The mucus becomes trapped leading to infection and inflammation of the airways. The thick secretions cause ciliary to not function properly, so there is a reduced ability to clear mucus. Overtime causing remodeling, decreased lung compliance, and progressive respiratory failure. In the pancreas, the thick secretions block the pancreatic ducts, preventing digestive enzymes from reaching the small intestine. Because the digestive enzymes can not reach the gut, there's an inability to breakdown fats, proteins, and carbs correctly. Leading to steatorrhea, poor weight gain, vitamin deficiencies, and eventually pancreatic insufficiency. Overtime, the pancreas becomes damaged and can not produce insulin, which results in CF related diabetes. In the GI system, mucus can cause obstructions leading to meconium ileus. Ongoing malabsorption causing abdominal distention, failure to thrive, and constipation. In the reproductive system, the thick secretions can block reproductive ducts. Most males with CF have congenital bilateral absence of the vas deferens, which leads to infertility. Females may have thick cervical mucus that makes it harder for sperm to reach the egg. The sweat glands are also affected, which leads to high sodium and chloride levels in sweat. This is why the "sweat test" is the diagnostic gold standard for cystic fibrosis.

To Be Completed Before the Simulation

Anticipated Patient Problem: Impaired Gas Exchange

Goal 1: The child's oxygen saturation will remain ≥ 92% during my time of care

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 oxygen saturation continuously	Apply oxygen & place in high fowlers position PRN oxygen saturation < 92%
Assess respiratory rate Q4H	Maintain airway! Initiate ordered respiratory treatments (nebulizers) PRN tachypnea
Assess breath sounds Q4H	Perform postural drainage or flutter mucus clearing device PRN wheezes/crackles
Assess cough and secretions PRN	Perform postural drainage (before meals and after neb treatments) or flutter mucus clearing device, educate on proper breathing exercises PRN wheezes/crackles
Monitor mental status PRN irritability, restlessness, confusion, or lethargy	Cluster care! Decrease stimuli as much as possible and notify provider if mental status does not improve
Monitor ABGs daily	Notify provider! Apply oxygen, maintain high fowlers position, perform CPT PRN hypoxia

Goal 2: The child will not show signs of increased work of breathing (tachypnea, nasal flaring, wheezing, etc.) during my time of care

To Be Completed Before the Simulation

Anticipated Patient Problem: Imbalanced Nutrition: Less Than Body Requirements

Goal 1: Stools will not increase in fattiness or frequency during my time of care

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?
Observe stools for steatorrhea PRN bowel movement	Administer synthetic pancreatic enzymes with every meal and snacks, notify if steatorrhea persist
Monitor Na+ levels daily	Replace Na+ as ordered and educate additional sodium is needed during summer months due to salt being excreted through sweat PRN Na+ < 135
Monitor for constipation PRN no recent BM or abdominal distention	Encourage fluids and treat with laxatives if needed PRN constipation
Perform sweat test PRN confirm diagnosis	If (+) Na+ and Cl+ will be increased → notify provider and educate family about genetic testing
Assess weight daily	Notify provider and provide high calorie & protein meals, monitor daily intake PRN decrease wt.
Monitor dietary intake PRN meals	Consult dietician & maintain increased protein & calories with moderate amount of fat

Goal 2: Sodium levels will remain between 135 to 145 mEq/L during my time of care

To Be Completed During the Simulation:

Actual Patient Problem #1: Impaired Gas Exchange
Goal: Lung sounds will be clear anteriorly and posteriorly during my time of care Met: ☐ Unmet:■
Goal: Oxygen saturation will remain > 92% during my time of care Met: ■ Unmet:☐

Actual Patient Problem #2: Imbalanced Nutrition: Less Than Body Requirements
Goal: Gary will tolerate enteral feeding during my time of care Met: ■ Unmet:☐
Goal: Gary's weight will reach above 5th percentile during my time of care Met: ☐ Unmet:■

Additional Patient Problems:
#3 Deficient Knowledge
#4 Infection
#5
#6

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
Deficient Knowledge	1400	Order for contact precautions due to + Burkholderia cepacia	1405	RN educated Gary that nurses will be wearing gowns and gloves, & he should not leave the room	1405	Gary stated, "Ugh I am going to be bored in this room."
Infection	1400	+ B. cepacia, WBC 19.0, contact precautions, CXR showed mild right lower lobe opacity. Temp 37.9 degrees Celsius	1500	Maintained contact precautions. Administered Gentamicin 130mg IV bolus	1800	Continued contact precautions throughout shift
Impaired Gas Exchange	1400	Productive cough, wheezes noted anteriorly and posteriorly. Radiology report: bilateral peri bronchial thickening & mild right lobe opacity. O2 95% RR 26	1430	Notified RT for treatments, Administered IV tobramycin 90mg IV bolus	1600	RT administered Albuterol and discussed decreased wheezing but continued cough. O2 95% RR 24
Imbalanced Nutrition	1530	Mother states, "Gary has not been eating well, with the infection he needs extra	1545	RN checked for residual stomach contents. Administered enteral feeding	1650	Gary tolerated the enteral feeding bolus well

		calories". Weight below 5th percentile. Body mass above 10th percentile.		bolus 300mL over 1hr		
Impaired Gas Exchange	1600	Order for Albuterol 0.83% unit dose via nebulizer QID	1600	RT administered albuterol as ordered	1630	RT stated, "he has a lot of mucus plugs but I think the treatment helped move them. He is still coughing but it's not very effective" Decreased wheezing after tx.
Deficient Knowledge	1600	Gary mentioned he skips a lot of his at home treatments	1615	RT reminded him of the importance of the treatments & regimen for CF	1630	RN expressed need for follow up with home medication regimen
Impaired Gas Exchange	1700	Order for sputum sample. Gary states, "Its kind of green this time."	1700	RN asked Gary to preformed proper steps for sputum sample. Sent to lab	1800	Sputum samples were not evaluated will continue to monitor
Imbalanced Nutrition	1730	Gary states, "I want real food now"	1800	RN ordered a high protein and calorie meal. Administered prancrelipase 6 capsules prior to dinner	1830	Gary had an intake of 75% of his high protein and high calorie meal
Deficient Knowledge	1800	Mother expressed concern about future children having CF	1810	RN states, "Both parents need to have an abnormal gene in order for their child to have the disease."	1815	Mom expressed understanding and will communicate with Gary's stepdad

'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

WBC 19.0, Na+ 135, Chloride 103, Glucose 106, CO2 28

CXR: bilateral peri bronchial thickening & mild right lobe opacity

BMI chart: Weight less than 5th percentile, body mas above 10th percentile

(+) B, Cepacia

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

Signs and Symptoms

Productive cough, wheezes anteriorly and posteriorly, green sputum, O2 95%, RR 24-26, temperature 37.9 degrees Celsius, mucus plugging, weight less than 5th percentile, mild clubbing of fingers and toes, barrel chest

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

Contributing Risk Factors

Genetic, autosomal recessive disorder (both parents have abnormal genes)

Therapeutic Procedures

Non-surgical

Chest physiotherapy

Prescribed medications

IVF

Surgical

PEG tube 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)

Infection (+) B. Cepacia

Acute pulmonary exacerbation

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

Medication Management

* Pancrelipase 6 capsules PO w/ meals
* Albuterol 0.83% via nebulizer QID
* Tobramycin 90mg IV bolus Q8H
* Gentamicin 130mg IV bolus Q8H
* Dextrose 5% in 0.45% NS w/ 20mEq KCl IV at 80mL/hr

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

Non-Pharmacologic Care Measures

* High calorie, high protein diet
* Enteral nutrition
* OOB, stationary bike daily
* Contact precautions
* Oxygen therapy (O2 < 92%)
* Chest physiotherapy QID

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

Stressors the client experienced?

* Being an adolescent with a chronic condition
* Frequent hospitalizations
* Noncompliance with medications due to age/judgement
* Family stressors (divorced parents)

Client/Family Education

Document 3 teaching topics specific for this client.

• Home medication regimen is important to prevent acute pulmonary exacerbation due to CF
• Contact precautions are necessary due to + B. Cepacia
• High protein, high calorie meals are needed due to CF

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

Multidisciplinary Team Involvement

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

Respiratory therapy, physician, registered nurse, dietitian, physical therapy

Patient Resources

School consoler for missed schoolwork, games/activities for growth and development due to hospitalization, medication adherence, conception (ART) for future

Reflection Questions

Directions: Write reflection including the following:

1. What was your biggest "take away" from participating in the care of this client?
   I have not seen an individual with cystic fibrosis so being able to take care of Gary was beneficial due to the strain it can have on the patient and family. Cystic fibrosis is a complex condition, so the compliance needs to be very good with therapies and medications to prevent complications and exacerbations.

2. What was something that surprised you in the care of this patient?
   The thing that surprised me the most during the care of Gary was the number of medications for an adolescent. Throughout an entire day Gary was ordered about 10 medications. I can see how this can be a lot of an adolescent and how compliance can become an issue. Along with the social and emotional stress a kid will go through with the diagnosis, especially during school.

3. What is something you would do differently with the care of this client?
   I would bring more awareness to the condition and make the patient feel more comfortable and included during the care. Bringing more attention to the treatment plan may make Gary be more compliant with at home regimen and prevent future hospitalizations.

4. How will this simulation experience impact your nursing practice?
   Throughout the care of Gary, I saw how much time you need to spend with a CF patient who is having an exacerbation. Numerous medications and are very frequent. Having a full assignment could be challenging to manage everyone's care. As CF can be difficult as it effects the respiratory system and airway is a huge concern.

5. Discuss norms or deviations of growth and development that was experienced during the simulation, including developmental stage.

   For Gary's age he was able to discuss his concerns and provide information for the nurse and respiratory therapist which is expected for this age. For a 15-year-old, they being to think abstractly and become independent. I saw Gary being very independent and not depending on his mom constantly throughout the scenario.