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

Student Name: _Riley Osborne_____

ATI Scenario: __Cystic Fibroses_____

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 Fibroses _____

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

Anatomy and Physiology
Normal Structures

The upper respiratory tract includes the nose, mouth, pharynx, epiglottis, larynx, and trachea.
nose is where the air is primarily entering and is made up of bone and cartilage. It is separated into 2 nares by the nasal septum. The inside of the nose is divided into 3 passages by the turbinate's that increase the surface area of the nasal mucosa that warm and moisten the air as it enters. The nose also filters small particles before the air enters the lungs. The internal nose directly connects to the sinuses and the nasal cavity connects directly to the pharynx.
The **pharynx** is a tubular passageway that is subdivided into three parts called the nasopharynx, oropharynx and the laryngopharynx. Air moves through the oropharynx to the laryngopharynx and then travels through the epiglottis to the larynx before moving to the trachea. (the epiglottis is the small flap that closes off when swallowing to prevent food or liquid from entering).
Air passes through the vocal cords to the **trachea** which the trachea is about 5 inches long and 1 inch in diameter. U shaped cartilages keep the trachea open but allow the adjacent esophagus to expand for swallowing. The trachea divides into the right and left main stem bronchi at the point called the **carina** which is located at the level of the 4^{th} and 5^{th} thoracic vertebrae.
The lower respiratory tract consists of the bronchi, bronchioles, alveolar ducts, and alveoli. Expect for the right and left bronchi all the lower airway structures are found in the lungs.
The **right lung** is divided into three lobes (upper middle and lower) while the **left lung** is divided into 2 lobes (upper and lower).

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

Mutations in the CFTR gene cause the protein to be missing or dysfunctional because it is causing chloride to not be able to move across the cell membrane. Water and sodium reabsorption is decreased. Without that chloride movement it makes secretions thick and sticky not only in the lungs but all other systems as well. The primary issue is in the lungs because it makes it hard to breathe.
Thick secretions in the lungs cause air trapping which causes atelectasis.
Cilia in the respiratory tract are meant to bring mucus up but when it is too thick, they cannot do that causing the mucus to stay in the lungs and form "plugs".
The mucus that cannot be excreted becomes a place for bacteria to form causing these patients to be at an increased risk for respiratory infections.
Over time these patients are at an increased risk for collapsed lungs, hyperinflation due to the air trapping, scaring because of repeat damage, and ultimately respiratory failure.

The **mainstem bronchi** subdivide several times to form the lobar, segmental, and subsegmental bronchi.
Further divisions from the **bronchioles**. The most distant bronchioles are the respiratory bronchioles which constrict and dilate in response to stimuli.
Bronchoconstriction and **bronchodilation** refer to decrease or increase in the diameter of the airways caused by contraction or relaxation of these muscles.
The **alveoli** are the final part, and they are small sacs in the lungs that are the primary site of gas exchange. The adult lung has over 300 million each being 0.3mm in diameter. They produce surfactant to reduce tension and prevent a collapsed lung and it produced when deep breathes are inhaled. The alveoli are connected by pores known as **Kohn** which allow movement from alveolus to alveolus, and this is also what causes the spread of infection between them.
Pulmonary circulation is the system of blood vessels that move blood between the heart and lungs. Pulmonary artery is delivering the blood to the lungs and the pulmonary vein delivers from the lungs.
Respiratory defenses:
Air filtration is how the nasal hairs in the nose keep particles from entering the air ways
Mucociliary clearance system: this is the system that clears mucous from the larynx by cilia covering the airways and helping to push it back up and keep it out of the lungs
Cough reflex: coughs are used as a high-pressure high velocity flow of air as a backup for mucus clearing. Coughing is effective for removing secretions
Reflex bronchoconstriction: when we inhale large amounts of irritants that the bronchi will constrict to prevent entry into lungs
Alveolar macrophages: rapid removal of things like bacteria up to the bronchioles for removal

To Be Completed Before the Simulation

Anticipated Patient Problem: Impaired gas exchange

Goal 1: Will be able to demonstrate age-appropriate ways to effectively clear secretions during my time of care

Goal 2: SpO2 will remain 92% and above on RA 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?
Respiratory rate and work of breathing q 2 hours	Administer bronchodilators or any other ordered medication as ordered and PRN
SpO2 continuous	Increase oxygen as ordered, encourage deep breathing PRN
Cough and sputum q shift or PRN	Iv abx as ordered, notify provider PRN
Lung sounds, compare on each side q 2 hours	Encourage effective coughing techniques, explain in a age appropriate manor q 2 hours
Position tolerance q 4 hours	Ensure family education on keeping child in best position for them to breath q 4 hours
Capillary refill, skin color, perfusion q 4 hours	Raise HOB, apply oxygen as ordered, notify provider PRN

To Be Completed Before the Simulation

Anticipated Patient Problem: Imbalanced nutrition

Goal 1: Will eat 75% of all meals during my time of care

Goal 2: Guardian will verbalize proper medication administration of pancreatic enzymes 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?
Height and weight daily	Collaborate with dietitian on needs to meet goals q shift
Stool characteristics and amount per day PRN	Encourage hydration, notify provider, increase pancreatic enzyme dose as ordered PRN
Lab values (vitamins, iron, electrolytes) q shift	Encourage PO fluids high in electrolytes, replace vitamins as ordered PRN
Appetite, energy level, meal % intake with each meal time	Small, frequent, high calorie and protein meals, administer pancreatic enzymes with each meal as ordered
Mucous membranes, skin turgor q 6 hours	Encourage PO fluids, encourage ice pops q 2 hours notify provider PRN
Urine output q 2 hours	Notify provider PRN, increase IVF as ordered

To Be Completed During the Simulation:

Actual Patient Problem #1: Impaired gas exchange
Goal: Will be able to demonstrate age-appropriate ways to effectively clear secretions during my time of care

Met: ☐ Unmet:☐
Goal: SpO2 will remain 92% and above on RA during my time of care Met: ☐ Unmet:☐

Actual Patient Problem #2: Imbalanced nutrition
Goal: Will eat 75% of all meals during my time of care Met: ☐ Unmet:☐
Goal: Guardian will verbalize proper medication administration of pancreatic enzymes during my time of care Met: ☐ Unmet:☐

Additional Patient Problems:
#3 patient compliance
#4 deficient parental knowledge
#5 exacerbation of CF dur to Burkholderia cepacia

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
1,4,5	1645	Gary was transported to the unit on contact precautions	1650	Nurse Susan explained that the contact precautions were due to his positive test	1700	Family and Gary understood and knew that this illness was causing an exacerbation of the CF
3	1710	His dad stated "if Gary would do what the provider asked him to do things might be better"	1730	Respiratory enforced the education that Gary needs to follow up with his respiratory treatments at home	1900	Follow up education with both Gary and parents encouraged to maintain proper regimen
1,5	1717	Gary has wheezing on inspiration and expiration during his physical assessment, SpO2 95% on RA during assessment	1724	Respiratory therapy came and did chest physiotherapy with Gary in the room. Administered Albuterol nebulizer	1730	Gary is not effectively coughing, he has mucus plugs, and the wheezing was diminished after on auscultation
1,5	1719	Radiology report shows bilateral peri bronchial thickening with mild right lobe opacity that is	1720	Iv tobramycin 90mg IV bolus infused for 20 minutes, Gentamicin 130 mg IV bolus	1900	Primary RN notified at shift report to monitor lab values

		suggestive of PNA WBC 19, neutrophils 76%, lymphocytes 24%				
2,3	1720	His mom stated "Gary has not been eating well he needs the extra calories" Gary is right above the 10% percentile for his weight	1735	Nurse Susan hung and ran the Enteral feeding	1900	Urine output of 320 mL, tolerated enteral feeds
1,5	1730	Gary states that his sputum has been green this time	1735	Assisted on appropriate technique to obtain sputum culture	1745	Sputum Cx sent to lab for testing
2, 3	1735	Gary wanted to order food from the kitchen	1737	Susan assisted in his decision of getting chicken and milk for his tray	1750	Susan administered pancreatic enzymes prior to meal
4	1737	Gary's mom asked nurse Susan what the chances of their baby are having CF if they have another one	1800	Nurse Susan offered to get educational pamphlets on CF and its genetic component	1820	Gary's mom was thankful for the information about both parents needing to carry the gene for CF to be present

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, neutrophils 76%, lymphocytes 24%, creatinine 1.1

CXR: bronchial thickening, PNA

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

Signs and Symptoms

Persistent cough, wheezing with inspiration and expiration, green sputum

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

Contributing Risk Factors

Increased secretions
Mucus sitting in lungs
Increased susceptibility to respiratory infections

Therapeutic Procedures

Non-surgical
Nebulizers
Chest physiotherapy

Surgical

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)

PNA
Respiratory distress
Exacerbation
Scarring of airways

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

Medication Management

Albuterol
Pancreatic enzymes
Tobramycin
Gentamicin
IVF

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

Non-Pharmacologic Care Measures

Oxygen
Postural drainage
Vest vibration

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

Stressors the client experienced?

School
Friends
Social support
Being on isolation

Client/Family Education

Document 3 teaching topics specific for this client.

- proper airway clearance techniques
- importance of medication and management regimen
- importance of staying healthy to ensure lungs stay healthy

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

Multidisciplinary Team Involvement

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

Nurse, respiratory therapy, pulmonology, radiology, outpatient clinic specialists, phlebotomy

Patient Resources

Education for family: genetics, infection prevention, medication adherence, when to call the provider
Pt: medication adherence, coughing, clearing secretions, management at home, medications at home

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 was seeing how it truly can impact the family and seeing how the parents can be worried/ scared to have another child with this illness after seeing what their first child is going through. I also learned how important it is to reenforce education to parents and children on management of the illness.

2. What was something that surprised you in the care of this patient?
   It surprised me that they had said he was just in the hospital recently and that he was coming back as well as it surprised me to hear the dad say that Gary was not very compliant at home with what the doctor was telling him.

3. What is something you would do differently with the care of this client?
   I would have done more education with Gary himself and found how to best tailor to his learning style to educate him on his disease. Adolescents learn and take in information different then adults which it is important to know and understand how to get the information to them at a level they will understand.

4. How will this simulation experience impact your nursing practice?
   It will allow me to slow down and ensure I talk to both the parents and the child to understand what is going on from both sides of the story as well as I now know how important education is even with a chronic illness.

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

   Gary was small for his age in both height and weight, he was able to do school at the hospital to keep up with his peers. He seemed to want to engage with others and go to the activity and game room when he was told he couldn't which is appropriate for his age to want to do. He was also not super complaint with his medications which is normal for his age because he is at the age to want to do what he wants and not have others tell him what to do. He also is at the age to want to test boundaries which can become an issue with chronic illness.