ATI Real Life Student Packet
N201 Nursing Care of Special Populations
2023

Student Name: Logan Clark

ATI Scenario: Cystic Fibrosis

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

Cystic fibrosis mainly affects both the respiratory and digestive system. A respiratory tract is made up of the nostrils, nasal cavity, epiglottis, pharynx, larynx, trachea, pleural cavity, bronchus, right lung, left lung, and diaphragm. It then is split into the upper and lower respiratory tract. The upper respiratory tract provides passage for breathing air in and out of the lungs. It filters air through the nasal hairs to trap pathogens and foreign intruders. Actions such as speaking, coughing, and swallowing are formed and created here. In addition, the lower respiratory tract is the home of the trachea. The trachea is made up of cartilage that are c-shaped that include bronchi. The bronchi are separated into primary, secondary, and tertiary bronchi. The bronchi eventually branches off into bronchioles and moves into the capillaries and alveoli. The functions of the respiratory system is to supply the body with oxygen, eliminate carbon dioxide, perform gas exchange, passageway for air, and humidify incoming air. In addition to the respiratory system, the digestive system is also affected. The digestive tract is made up of the mouth, esophagus, salivary glands, stomach, small intestine, large intestine, gallbladder, appendix, pancreas, liver, and anus. The digestive system functions include ingestion, peristalsis, mechanical and chemical breakdown of food, absorption, and defecation. Through these functions it provides the body with nutrients and energy that is needed to survive.

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

Cystic fibrosis is a genetic disorder that clogs the lungs and the digestive system with mucus. It is a dangerous and life threating condition if it is left untreated. It is a very rare disease. There is no cure for this condition but there are some treatments that can help. Cystic fibrosis is present at birth and family history plays a huge risk factor and increase the likelihood of accruing the disease. Cystic fibrosis results from mutations in the CFTR gene which is supposed to make the CFTR protein. This gene also regulates the movement of salt and water across the cell membranes. A mutation in this gene leads to abnormal production and transportation of mucus, sweat, and fluids. Everyone has two copies of this gene one copy from their mother and one from their father but someone with cystic fibrosis they have mutations in both copies of the CFTR gene. The parent does not have to have the disease to give it to their child. Genetic testing can be done if there is a family history or risks. In the respiratory tract airway becomes obstructed due to thick and sticky mucus. It also traps bacteria causing inflammation and infection within the lungs. In the digestive system, the thick mucus blocks the ducts of the pancreas which does not allow proper release of enzymes.

To Be Completed Before the Simulation

Anticipated Patient Problem: Ineffective airway clearance

Goal 1: The client will maintain optimal gas exchange as evidenced by oxygen saturation of 92% or greater, ABGS within the client's usual range, and heart rate at baseline 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 respiratory status including respirations, color, level of consciousness, labored breathing, or tachypnea q4hrs	Administer mucolytics such as acetylcysteine q4hrs
Assess sputum for color, amount, and consistency q4hrs	Encourage pursed lip breathing, deep breathing exercises, and chest physiotherapy q2hrs
Assess for adventitious breath sounds q4hrs	Elevate head of bed to 45-90 degrees and assist into a semi-fowlers position
Assess oxygen levels q4hrs	Administer supplemental oxygen if oxygen levels are less than 92% as needed
Assess arterial blood gases daily or as needed	Administer bronchodilators such as albuterol as needed
Assess color of nail beds and mucous membranes q4hrs	Encourage use of IS 10 times every hour

Goal 2: The client will maintain a clear, open airway as evidenced by normal breath sounds, normal rate and depth of respirations during my time of care

To Be Completed Before the Simulation

Anticipated Patient Problem: Risk for infection: Respiratory/Digestive

Goal 1: The client will remain free of infection, as evidenced by normal vital signs and no general signs or symptoms of infection 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 for general signs and symptoms of infection including fever, cough, malaise, tachypnea, or tachycardia as needed	Perform and maintain strict hand washing as needed
Assess for productive or non-productive cough q4hrs	Obtain a sputum culture as needed
Monitor WBC daily	Administer antibiotics such as Zosyn, Vancomycin, or Ciprofloxacin as ordered
Assess nutritional status including intake/output as well as clients weight daily	Encourage high calorie and protein rich foods as well as balanced fluid intake daily
Assess temperature q4hrs	Initiate and maintain personal protective precautions daily
Assess current knowledge of cystic fibrosis and current infection protocols to decrease risk daily	Educate complications can easily occur if condition is not maintained properly. Lung infections are one of the biggest infections to occur in someone with CF as needed

Goal 2: The client will have a normal WBC during my time of care

To Be Completed During the Simulation:

Actual Patient Problem: Ineffecitve Airway Clerance
Goal: Courtney will maintain a clear lung sounds and well as a non-productive cough during my time of care
Met: ☐ Unmet:✓
Goal: Courteny will demonstrate the use of a mucus clearing device during my time of care
Met: ✓ Unmet:☐

Actual Patient Problem: Imbalanced Nutrition: Less than body requirements
Goal: Courtney will consume a diet that is 150% of recommended dietary requirements for her age and size during my time of care Met: ☐ Unmet:✓
Goal: Courtney will maintain her weight of 32kg (70.4lbs) during my time of care
Met: ✓ Unmet:☐

Additional Patient Problems:

3. Deficient Knowledge: Cystic Fibrosis and Nutrition

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
1,3	1750	Coarse crackles heard throughout	1755	Educated to administer respiratory medications including Levalbuterol & Dornase Alfa. Levalbuterol should be given first	1810	Mom and dad understands her respiratory medications that she is taking
1,3	1750	Mom was overwhelmed with recent diagnosis of cystic fibrosis	1755	Educated her with only pertinent information during the first home visit	1800	Mom stated she still had tons of questions about her activities, diet, medications, treatments, and information on cystic fibrosis. RN set up another appointment to come back to discuss her questions
1,3	1755	Mom is nervous to tell anyone including teachers,	1800	Educated that it is up to them as a family to decide if it is appropriate to tell others however, explained	1802	Mom verbalized understanding and stated that Courtney can tell her class

		friends, school nurse about Courtney's condition		that is important for her school nurse too know		and school nurse if she wanted too
1,3	1800	Did not understand an overview of cystic fibrosis	1802	Educated that her sweat has a higher content of chloride. Her body makes thick secretions that get stuck in the passages of her lungs and can be difficult to cough up	1805	Courtney and her parents understand the condition and does not have any further questions about the overview of cystic fibrosis
1,3	1805	Coughing a lot at school per school nurse	1810	Educated importance of letting her school nurse know about her condition and her medications	1810	Coutrney brought her medications to school
2.3	1805	10 year old female, small for age, current weight 32kg (70lbs)	1805	Educated Courtney and parents that she should eat 150% of recommended dietary requirements for her age	1808	Courtney grabbed pen and paper to write down things that she likes and dislikes that will help when grocery shopping
1,2,3	1805	Having a hard time taking her Pancrelipase because of the size	1810	Explained that she is able to put the contents of med into applesauce	1812	Courtney explained she loves applesauce and will try to do that next time
1,3	1805	Increased in coughing, stated "sputum is yellowish"	1815	Discussed percussion, vibration, and postural drainage when experiencing a increased cough	1816	Courtney states she gets tired from pounding and coughing, and mom agrees it takes awhile but does not want to develop other respiratory problems
1,3	1807	Stated she got tired from running the bases and she always coughs afterwards	1816	Educated she is able to still play softball, but it is important to pay attention to her body. However, sports are good for her pulmonary hygiene	1817	Softball coach will work on a modified warm-up activity plan for Courtney
1,3	1810	Mom is concerned about health concerns related to cystic fibrosis	1815	Educated children who suffer with cystic fibrosis have a greater risk for a lot of health care conditions including delayed growth, delayed puberty, diabetes, gastroesophageal reflux, and osteoporosis	1818	Mom is overwhelmed with the information
1,3	1815	Did not want to	1820	Educated Courtney and her	1820	Courtey

		participate in her therapy because she did not want to leave her friend’s house		parents that it is important that she adheres to the medical regimen to promote optimal health		understands the importance of her therapy

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
Chloride sweat test
Vitamin levels
LFT
BMP
CBC
Chest x-ray
Immunoreactive trypsinogen test

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

Signs and Symptoms
Wheezing
Course crackles
Productive cough
Hyperactive bowel sounds
Loose frothy stools
Thick mucus
Inability to exercise

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

Contributing Risk Factors
Small for age
Delivered 2 weeks early
Genetic mutation (two parents who carry abnormal CTFR gene)
Family history

Therapeutic Procedures
Non-surgical
Breathing exercises

Surgical
Bronchoscopy
Bowel surgery

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
SOB
Decreased activity level/tolerance
Osteoporosis
Delayed growth
Delayed puberty
Diabetes
Gastroesophageal reflux

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

Medication Management
Pacrelipase
Azithromycin
Dornase Alfa
Levalbuterol
Vitamin E
Multivitamin

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

Non-Pharmacologic Care Measures
Eat Diet (high calorie/protein)
150% of RDA for age and size
Percussion
Vibration
Postural drainage
Handheld mucus clearance device

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

Stressors the client experienced?
Friendships: she had to leave her friends house to do therapy

Parents were stressed overall with treatment regimen and the disease itself

Client/Family Education

Document 3 teaching topics specific for this client.
- Educate on overview of cystic fibrosis
- Educate on high calorie and high protein diet while including foods that she likes
- Educate on CPT

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

Multidisciplinary Team Involvement
(Which other disciplines were involved in caring for this client?)
Sports coach
School counselor
Pediatrician
Pulmonologist
Gastroenterologist
Nurse

Patient Resources
Community support group for parents
Specific and adjusted sports plan

Reflection Paper

After this simulation, my biggest take away was that not all cystic fibrosis patient look the same. Most people look at cystic fibrosis as a life threating medical condition with symptoms, infections, and diseases that reduce life expectancy. For an example, Courtney was still able to play and tolerate softball. She was able to tolerate and choose the activities that she enjoys as much as her pulmonary health would allow her too. I think its important to know as a nurse that some things that work for one patient may not work for others. In this scenario, something that surprised me was Courtney was still able to tolerate sports while having cystic fibrosis. Being able to tolerate sports while a disease is affecting the lungs and respiratory system and still being able to play is something that I did not expect. I have always seen cystic fibrosis a deteriorating condition because I feel like that is how the media portrays the disease. Something that I would do differently with the care of this client would be providing examples of foods that are high in protein and calories. During the scenario, the home care nurse only explained to her importance of the diet but didn't help her find foods that she preferred. I think it is very important to provide the most education possible especially to a child. Its important that the child understands the disease. Moving forward in my nursing practice this simulation will impact my nursing practice is never assume that the patient will have textbook symptoms, treatments, diagnosis, and care because that is not always the case. What us nurses think may be the priority problem may not always be the priority problem. Norms and deviations of growth and development that I experienced during the simulation included Courteny acting "grown-up". She wanted to be apart of the care that she was receiving. She wanted to be involved in her own health care decisions. As a 10-year-old female, she does not want to have to put aside playing sports because that is most likely what every other child her age is doing. She wants to be able to fit in rather than having to do treatments for her condition of cystic fibrosis. Courtney also is very involved with her social life with her friends. For an example, she was at her friends house but had to come home for her treatment which she was upset about which I feel is normal for someone her age.