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

Student Name: _Catharine Cardellino___

ATI Scenario: __Cystic Fibrosis Community Care__

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

URI: nose, mouth, pharynx, epiglottis, larynx, trachea. Nose opens to sinuses, nasal cavity to pharynx. Nose filters and humidifies. Air moves from oropharynx to laryngopharynx, then to the epiglottis, then trachea. Trachea bifurcates to right and left bronchi (carina).

LRI: Bronchi, which from bronchioles, alveolar ducts, alveoli. Right lung (3 lobes) left lung (2 lobes). Bronchioles are encircled by smooth muscles that constrict/dilate in response to stimuli. Alveoli are sacs in the lung responsible for gas exchange, deep breathing helps promote air movement through pores of Kohn and helps move mucus out of the respiratory bronchioles. Bacteria can also move through these pores and spread infection. Pulmonary edema reduces gas exchange.

Alveolar cells produce surfactant to reduce inflation pressure and prevent collapse (atelectasis).

Pancreas: Gland behind the stomach, duct extends along it and into duodenum through common bile duct. Exocrine contributes to digestion w enzymes. Endocrine function to secrete insulin, amylin, glucagon, somatostatin, pancreatic peptide.

Liver: Lies in the epigastric region. Sinusoids line with Kupffer cells that remove bacteria/toxins. Hepatic cells secrete bile into tiny canals that merge into bile ducts. Portal circulatory system brings blood to the liver from the stomach, intestines, spleen, and pancreas. Portal vein carries absorbed products of digestion directly to the liver. Has metabolic, secretory, vascular, storage functions.

Gallbladder: concentrate and store bile,

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

Autosomal, recessive disorder found on chromosome 7, which makes CF transmembrane conductance regulator (CFTR) which is a protein that localizes the epithelial surface of the airways, GI tract, ducts of the liver, pancreas, and sweat glands. Normally CTFR regulates sodium and chloride movement, in and out of epithelial cells, but this is blocked In cystic fibrosis due to the way the channels are blocked. Consequently, cells that line the passageways of the lungs, pancreas, intestines, and other secreting organs that are low in sodium chloride become abnormally sticky with thick mucus. Mucus clogs organs' ducts, and cause scarring that results in organ failure. Chronic sinusitis and nasal polyposis are common URI manifestations. Mucus lining becomes dehydrated, cilia motility is decreased thus enhancing mucus adherence to airways, bronchioles become obstructed, scarring occurs, air is trapped, lungs hyperinflate.

A persistent, non-curable, chronic airway infection. P. aeruginosa, Staphylococcus aureus, H. Influenzae, Burkholderia cepacian are all common, antibiotic resistance occurs, along with pulmonary inflammation. Chronic infection leads to a decrease in respiratory function, narrowing of airway lumens. Inflammatory mediators increase and progress the disease state.

Initial lung disorders include chronic bronchiolitis and bronchiectasis. Pulmonary vascular remodeling occurs because of hypoxia, vasoconstriction, pulmonary htn, enlarged pulmonary arteries, and cor pulmonale. Blebs and large cysts occur as well. Pneumothorax may occur. Hemoptysis is caused by proliferation of capillaries in response to chronic infection.

Mucus plugging also causes pancreatic insufficiency that results in gland atrophy and cyst formation. Lipase, amylase, protease are not made in sufficient amounts to allow for nutrient absorption. Fat, protein, and fat soluble vitamins experience malabsorption. This results in failure to grow/gain weight. Malnutrition, insufficient testosterone, and elevated inflammatory cytokines occur. CFRD can also occur due to pancreatic insufficiency.

GI problems persist (GERD, gallstones, pancreatitis). Liver enzymes chronically elevated, resulting in cirrhosis. Distal intestinal obstruction that develops due to chronic malabsorption

To Be Completed Before the Simulation

Anticipated Patient Problem: Ineffective Airway Clearance

Goal 1: Patient will follow through with medication regimen of bronchodilators, mucolytics, and expectorants after receiving prescription and education during and after 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 lung sounds for crackles, rales, or stridor at beginning of shift during head to toe and after interventions	Maintain HOB elevated to help prevent secretions from accumulating and promote lung expansion throughout the shift and as tolerated
Assess sputum characteristics for color, amount, and consistency at beginning of shift during head to toe and after pharmacologic interventions	If green or yellow, this may be indicative or an infection and antibiotics may be ordered by the provider if they test positive for an infection, administer antibiotics as orders.
Assess respiratory rate and pattern at beginning of shift and q1 hour if abnormal and q4 if normal.	Administer mucolytics and expectorants to thin mucus, bronchodilators to open the airway as ordered by the provider
Assess O2 saturation q4 hours and after interventions	Teach deep breathing techniques and the use of incentive spirometer to promote the mobilization of secretions and lung expansion at beginning of shit and PRN
Assess for orientation and level of consciousness at during head to toe, q1 hour, and PRN	Administer oxygen to achieve an SpO2 of at least 93% PRN
Evaluate ability to swallow or cough at the beginning of shift and q1 hour	Suction as needed to clear the airway of mucus secretions PRN

Goal 2: Patient will demonstrate methods of expectorating mucus such as incentive spirometry, deep breathing, and chest physiotherapy

To Be Completed Before the Simulation

Anticipated Patient Problem: Imbalanced nutrition: less than body requirements

Goal 1: Patient will identify foods that they enjoy eating to enhance their daily requirements.

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 weight in the morning before eating/ after voiding daily	If severely underweight and unable to tolerate regular feedings, provide tube feedings as ordered
Observe stool for the appearance of mucus, oil, foul odor, and frequency after every BM	Provide education on and encourage eating foods high in protein, whole grains before meal time and administer vitamins as ordered
Assess enzyme lab work as soon as it is uploaded	Administer enzymes as ordered by provider prior to meals to aid in digestion
Assess blood glucose ACHS and upon signs and symptoms of hypo or hyperglycemia	Administer insulin as ordered from CFRD prior to meals
Assess urine, skin turgor, and mucus membranes for signs of dehydration after every void, in the morning, and q4 hours	Encourage oral hydration every hour and administer IV fluids as ordered
Assess what foods are tolerated well and preferred at the beginning of shift, prior, and during meals	Assist in ensuring the client is receiving their preferred meals that they tolerate well at every meal time

Goal 2: Patient will gain at least 3 lbs in 2 weeks

To Be Completed During the Simulation:

Actual Patient Problem: Ineffective Airway Clearance
Goal: CS will follow through with medication regimen of bronchodilators, mucolytics, and expectorants after receiving during and after my time of care. **Met**
Goal: CS will do methods of expectorating mucus such as incentive spirometry, deep breathing, and/or chest physiotherapy during and after my time of care **Met**

Actual Patient Problem: Imbalance nutrition: less than body requirements
Goal: CS will identify foods that they enjoy eating to enhance their daily requirements .**Met**
Goal: CS will increase dietary requirements during my time of care **Met**

Additional Patient Problems:

3 Knowledge deficit

4 Risk for decreased activity intolerance

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
1,2	Date: 03/01	Wheezing heard throughout, productive cough, hyperactive bowel sounds, loose frothy stools (multiple per day) from initial assessment, weight 70.4 lbs	Date 03/11	Provider requested home health referral, nurse made appointment with family	Date 03/11	Family confirmed appointment for 3/12 at 1000
1,2	03/12 1000	RN gathered information about cough, reports coughing with activity and before bed, coarse crackles on auscultation, shares that pt is a "picky eater" and won't eat meat	03/12 1010	RN schedules follow up appt to answer more questions	03/12 1020	Family confirms appointment for 3/13 at 1000
3,	03/13 1000	Family shares they don't understand all the information	03/13 1005	Provide education on what cystic fibrosis is, how it	03/13 1015	Family verbalizes understanding, request additional

		they were taught at the clinic about cystic fibrosis		causes an accumulation of secretions/mucus build up in the air passages that causes difficulty breathing		information on diet and medication, schedule an appointment
3,	3/14 1000	Provided medication and health information to school nurse	3/14	Coordination with school nurse to answer questions regarding a support group and the mucus clearance device	04/14	Family understands care plan, diet, medications, physical activity needs, physiotherapy regimen, support groups, and other risks.
2	03/17 1530	Informed RN of difficulty swallowing Creon	03/17 1540	Provided education on ability to sprinkle medication on food	03/17 1545	Expressed that they would then be able to take the medication with apple sauce
2	03/30 1530	Mother concerned about diet, expresses “she is so skinny”	03/30 1540	Provide education that due to cystic fibrosis, energy demands are higher (due to breathing efforts, pancreatic insufficiencies) and will need a high protein, high calorie diet	03/30 1545	Reports that she doesn’t feel hungry and that is why she doesn’t eat, makes a list of foods she does like to eat, follow up appointment is scheduled
1	03/30 1550	Expresses confusion about why she is taking two respiratory medications	03/30 1555	Provide education that Levalbuterol is a bronchodilator, that should be administered first to open up the bronchioles, and can also increase blood glucose. Dornase is used to decrease the viscosity of mucus, but can have adverse effects	03/30 1600	Family expresses an understanding of medication
1	04/03 1530	Reports an increase in cough and yellow sputum	04/03 1540	Provides education that percussion, vibration, and postural drainage should be increased during times of	04/03 1550	Verbalize understanding

				increasing mucus, up to 4x a day,and before meals, and that not following through with treatment can cause an increase in respiratory problems		
1, 4	04/07 1730	Express concern around physical activity, softball coach participates in meeting	04/07 1740	Provide education that she can continue playing sports, but needs to take a break when breathing is difficult. Explain that activity is good for pulmonary hygiene	04/07 1800	Express understanding of importance of advocating for self. Coach Hogan states he will modify her warm up routine.
3	04/12 1600	Family asks about what other health concerns they should be aware of	04/12 1610	Provide education on risk of developing osteoporosis due to pancreatic insufficiency, and diabetes, GERD	04/12 1620	Family expresses feeling overwhelmed, pt appears withdrawn/upset about therapy, does not want to do it
1,3	04/12 1625	Mother asks what is appropriate to say in response to request to not do therapy	04/12 1630	Educate that strict regimen is important to maintain health	04/14 1600	Regimen continues
1,2,3	04/14 1600	Family expresses understanding of care and gratitude for education	04/14 1605	Makes self available, reminder to call provider for additional information if needed, provides hand out for community support group for parents	04/14 1615	Family expresses they will attend meetings

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

Reported a positive sweat test

Additional diagnostics that could be performed include stool evaluation, pulmonary function test, blood test, genetic testing, sputum culture, CT scan,

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

Signs and Symptoms

Productive cough
Yellow sputum
Weight loss, difficulty gaining.
Loose, frothy stools (multiple per day)
Difficulty breathing
Lack of appetite

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

Contributing Risk Factors

Genetics
More common in White population
Symptoms develop in childhood

NCLEX IV *(7)*: Reduction of Risk

Therapeutic Procedures

Non-surgical

Respiratory chest physiotherapy: percussion, vibration, postural drainage

Surgical

N/A in this client currently, transplants may occur later in life if indicated

Prevention of Complications

(Any complications associated with the client's disease process? If not what are some complications you anticipate)

Not currently experiencing complications other than coughing, difficulty breathing with activity, and weight loss. Future potential complications include GERD, osteoporosis, diabetes, and infection. Currently receiving Levalbuterol, which can help prevent blood glucose related issues and also help open the bronchioles. Additionally, being up to date on vaccines can help prevent infection, CS is up to date with Varicella, Dtap, IPV, HIB, Hepatitis B, MMR, and Meningococcal

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

Medication Management

Pancrelipase 3 capsules PO with meals
Azithromycin 5mg/kg/day PO at 1200
Dornase alda 2.5 mg via nebulizer every day
Levalbuterole 2.5 mg via nebulizer 4x a day
Vitamin E 400 International Units PO daily

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

Non-Pharmacologic Care Measures

Mucus clearance device
Physical activity (within limits)
High protein diet
High calorie diet

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

Stressors the client experienced?

Tired from frequent respiratory therapy
Grief over treatment, desire to be like friends
Difficulty breathing during enjoyed activities (softball)

Client/Family Education

Document 3 teaching topics specific for this client.

- Importance of increase diet to 150% of recommended diet of peers, increase in protein and calories
- Adherence to physiotherapy to promote mobility of secretions and prevent accumulation or worsening symptoms
- Understanding effects of medication, the difference between mucolytics and bronchodilators

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

Multidisciplinary Team Involvement

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

School nurse
Softball coach
Home health nurse
Provider

Could also anticipate coordination with respiratory therapist

Patient Resources

Support group for school age children with cystic fibrosis
Hand out with information for family, teachers, coaches, etc.
Support group for parents

Reflection Paper

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 is the value of education. When a diagnosis is new, it can be jarring to the family and they may require follow up care and instruction. Careful, in depth explanations of medication, treatments, and diet helps promote adherence and also establish trust with the patient and family.

2. What was something that surprised you in the care of this patient?
   _____It surprised me that most of the interventions were education. It also surprised me that Courtney was so involved with her own care and had a desire to learn more about her diagnosis, as well as her desire to share the new information with her classmates. __

3. What is something you would do differently with the care of this client?
   ___Honestly, I can't really think of much that I would do differently. I think it was assumed that the nurse was performing auscultation every appointment, but it wasn't shown on video. I would be sure to listen and do a head to toe and/or focused assessment at every appointment. I would also probably try to explore the feelings of the child (and family) more. Although she seemed excited about her diagnosis at first because it made her feel special, throughout the time of care it is important to address any changes in mood/affect/feelings regarding how the diagnosis is changing the client's life.

4. How will this simulation experience impact your nursing practice?
   This simulation has encouraged me to make myself available to the family and client for any questions or follow up care. It also highlights the value in contacting additional healthcare professionals involved in the care of the patient to ensure that everyone is on the same page. It is also helpful to involve more of the care team, because they may have suggestions or observations that you did not have yourself. Additionally, I see the value in including others in the education (as long as there is approval from the patient) of the patient's diagnosis and care, such as coaches and teachers.

5. Discuss norms or deviations of growth and development that was experienced during the simulation, including developmental stage.
   _____Courtney is 10 and some of her norms included cooperating, respecting parents and other adults, interest in extracurricular activities (softball), and valuing her friends at school. Some deviations were that she was losing weight, but she did weigh 70.4 lbs which is within normal limits for 10 year old girls. She lives with both parents and has adequate peer and school support as well. Other than having cystic fibrosis and symptoms that come with it, such as productive cough and difficulty eating, she did not display many deviations. She was upset at one point that she had to do therapy that her friends didn't have to do. __