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

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ATI Scenario: Real life 2 (peds 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

Upper respiratory tract includes nose mouth, pharynx, epiglottis, larynx, and trachea. Air passes through the structures and moves into the lower structure
The lower respiratory system includes the following:
Trachea: pipelike structure that contains muscles and connective tissue and is responsible for moving inhaled air down into the lungs. The trachea divide into the left and right main bronchi at a point called the carina.
Bronchi: conduct air to the lungs so that gas exchange can occur, it is lined with a mucus layer that plays a role in protecting the lungs from inhaled pathogens. It is composed of three sections the main bronchus (left & right), the right bronchus has a more vertical course and is shorter and wider (more likely to occur in the right lung than left). The main bronchi then branch out to the secondary lobar bronchi, then to the tertiary segmental bronchi. As the airways get smaller they have more branches.
Bronchioles: branches that run into the lungs getting progressively smaller the deeper the go into the lungs and end into alveolar ducts.
Lungs: the main respiratory organ where gas exchange occurs the right lung has 3 lobes and the left has 2 lobes. Normal tidal volume for an adult is 500 mL.
Alveoli: tiny air filled sacs located at the end of the bronchioles, surrounded by capillaries where gas exchange occurs (inhaled O2 enters bloodstream and CO2 exits bloodstream and is exhaled). The lung has over 3 million alveoli (~0.3mm). They are connected by pores of Kohn, deep breathing helps with air movement
The smooth muscles allow for bronchoconstriction and bronchodilation.
Gases are exchanged over the alveolar-capillary membrane that's in contact with pulmonary capillaries and O2 and CO2 more back and forth by diffusion. Surfactant is a lipoprotein that lowers surface tension and helps reduce the amount of pressure needed to inflate the alveoli. The lungs have two types of circulation: pulmonary & bronchial. Pulmonary circulation provides the lung with blood and oxygenates it and moves through the heart to the rest of the body tissue. Blood comes from the pulmonary artery (only artery carrying deoxygenated blood) and becomes oxygenated, then returns to the heart via the pulmonary veins into the left atrium. The chest wall consists of the mediastinum which separates the right & left lungs. The cavity is lined with the pleura which is divided into 2 membranes parietal (chest wall) & visceral

NCLEX IV *(7)*: Reduction of Risk

Pathophysiology of Disease

Cystic fibrosis is a disorder that cause exocrine glands to dysfunction. It effects may organs in the body but has a large impact on the respiratory and digestive system. Cystic fibrosis is an autosomal recessive disorder.

Prevalence:

There is a 25% chance of the being passed to the child if both the parents have a copy of the defected gene. The condition mostly affects whites. It occurs in about 1/3500 live births. The copy of the mutated gene is located on chromosome 7 and codes for 1480 amino acid called the cystic fibrosis transmembrane conductance regulator (CFTR)

Pathophysiology:

One of the clinical features of CF is an increase is viscosity of secretions. Another hallmark sign is elevation of electrolytes in sweat particularly Na & Cl. Children with CF often have both respiratory and GI complications due to the increased viscosity of the mucus. The increase viscosity of the mucus can cause mechanical obstruction. Due to the thick secretions small passageways such as the pancreas and bronchioles can become blocked. CF has a major impact on the GI system and the production of pancreatic enzymes. In the pancreas the sections cause blockages in the ducts and that leads to pancreatic fibrosis. This results in food not be easily digested (especially fats & proteins), patients with CF require enzymes to take with all meals and snack to help properly breakdown and digest food. A common trait for patients with CF is to have bulky, frothy, foul smelling stool with steatorrhea. May CF patient also may have cystic fibrosis related diabetes (CFRD) due to the changes and

(lungs). The intrapleural space is between the two and contains 10-20 mL of fluid to provide lubrication and increases unity. O2 and CO2 move back and forth through the alveolar-capillary membrane from high to low conc. Inspiration is the movement of air into the lungs. Expiration is the movement of air out of the lungs. Compliance: ability of lungs to expand. Resistance: any obstacle to airflow during ventilation. Breathing is controlled in the medulla.		impacts on the pancreas. CFRD occurs in about 40-50% of patients with CF by the age of 30. Pulmonary complications are one the biggest systems impacted by this disease process. The thick mucus tends to accumulate in the airways and the viscosity make it hard for the patient to cough up on their own. This can mucus to build up in the airways and bacteria to colonize. Frequent lung infections, atelectasis, bronchiectasis, & hyperinflation are common findings. Severe long term lung involvement can lead to the compression of pulmonary vessels and in turn cause pulmonary HTN, cor pulmonale, or respiratory failure. Bacterial or fungal lung infections are one of the biggest complication when it come to CF and the respiratory system. The reproductive system is impacted in both males and females with CF. The increase in mucus in reproductive fluid can lead to sterility & infertility. Growth & development then to be impacted in moderate to severe cases of CF. This can be a result of decreased GI absorption, using excessive caloric expeadure, and poor intake.

To Be Completed Before the Simulation

Anticipated Patient Problem: Ineffective airway clearance

Goal 1: SpO2 will remain at or above 92% during time of care

Goal 2: Will have no wheezing, increased WOB, or dyspnea during 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 q2 & prn	Preform chest PT & postural drainage q4 x day (before meals)
Assess SpO2 & RR q2 & prn	Apply or maintain O2 via NC to keep SpO2 at or above sat in order prn
Assess for any wheezing, increased WOB, hard time speaking due to trouble breathing q2 & prn	Give nebulizer treatments such as bronchodilators or corticosteroids as per order & prn
Assess ability to expectorate secretions & characteristic of secretions q2 & prn	Use mucolytics & flutter device to help loosen and expectorate sections q4 & prn
Assess for any tachypnea, retractions, diminished breath sounds, low SpO2, cyanosis q4 & prn	Alert provider immediately to potential complications, provide respiratory (O2 support) prn
Assess current position and activity level q4 & prn	Encourage walking around & movement as able & sitting in high fowlers q4 & prn

To Be Completed Before the Simulation

Anticipated Patient Problem: Imbalance nutrition (less than body requirements)

Goal 1: Will meet nutritional and caloric requirements during time of care

Goal 2: Will maintain or gain weight during 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 current PO food intake, & percentage ate q4 & prn	Encourage a high cal, high protein, moderate fat diet, help with food selections q4 & prn
Assess stool patterns & stool description q daily & prn	Administer pancreatic enzymes at the start of all meals and snacks
Assess for any nausea, vomiting, anorexia q4 & prn	Administer antiemetics, encourage eating, easy to digest food prn
Assess for vitamin and electrolyte deficiencies (Na & Cl) & imbalances q daily & prn	Administer fat soluble vitamins (A, D, E, K), replace electrolytes with supplements or IVF q daily & prn
Assess proper caloric needs & requirements q daily, assess weight daily (AM),	Consult nutrition, provide supplementation based on recommendation prn
Assess if enzymes are being taken properly & their effectiveness q daily & prn	Educate about proper enzyme use, contact provider to adjust dose based on effectiveness prn

To Be Completed During the Simulation:

Actual Patient Problem #1: Ineffective airway clearance
Goal: SpO2 will remain at or above 92% during time of care Met: ☐ Unmet:☐
Goal: Will have decreased wheezing, no increased WOB, or dyspnea during time of care Met: ☐ Unmet:☐

Actual Patient Problem #2: Infection
Goal: Will have a decrease in WBCs, fever, and s/sx of infection during time of care Met: ☐ Unmet:☐
Goal: Will remain on contact precautions, continue abx, and utilize proper infection prevention techniques during time of care Met: ☐ Unmet:☐

Additional Patient Problems:
#3 Imbalance nutrition: less than body requirements
#4 Deficient knowledge
#5 Impaired GI function
#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
Ineffective airway clearance/ Infection	In clinic	Exacerbation of CF, recurrent episodes of high fevers (38.3 C), cough harsh and productive, wheezing & crackles all lobes, RR 24, SpO2: 93% RA	1030 (in clinic)	Plan to admit to hospital for IV abx & pulmonary therapy, administered 650 mg PO acetaminophen	0950 (beginning of admission)	Wheezing present bilat, RR: 26, SpO2: 95% RA, Temp: 37.9 C on admission to the unit
Infection	0940	Contracted Burkholderia cepacia	0940	Placed on contact precautions in the hospital	1030	Continue contact precautions
Ineffective airway clearance	0950	Wheezing lung sounds head bilat, anterior & posterior, RR: 26, SpO2: 95% RA, coughing	0955	Called RT to come give respiratory treatment	1010	RT performed CPT & and RT treatment, lot of mucus plugs, continue to cough, less wheezing heard
Infection	0950	WBC: 19, positive for Burkholderia Cepacian, XR showed right lower lobe pneumonia	1000	Administer IV tobramycin over 20 minutes, administer IV gentamycin	1005	IV infusion complete, no reaction, temp: 37.9

Imbalanced nutrition: less than body requirements	1000	43.11 Kg (10^{th} percentile), 155.2 cm (< 5^{th} percentile), FTT	1010	Administered bolus feed of high cal, high protein (300 mL, over 1 hr) formula via PEG	1020	Enteral feeding still running
Deficient knowledge	1015	Admitted to skipping lots of respiratory treatments at home	1015	RT remined him of the importance of completing treatments & that it needs to be done regularly	1020	RN reinforced importance of following treatment regimen, verbalize understanding of need to treatments
Impaired GI function	1015	Need to give a bolus feeding via PEG, hard time breaking down nutrients due to GI involvement of CF	1015	Administered pancrelipase 10 min prior to enteral feeding	1030	Bolus of enteral feeding complete, stated overnight enteral feeds at 100 ml/hr
Infection	1020	Sputum green, positive for pneumonia on CXR	1020	Obtained sputum culture	1030	Sputum culture pending
Imbalanced nutrition: less than body requirements/ Impaired GI function	1025	Requested a meal from RN	1025	RN ordered a fried chicken breast, pork & beans, corn, whole milk, & a candy bar, administer pancrelipase with meal	1030	Ate all of meal, no complaints of GI upset

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
WBC: 19
Sputum culture
CXR

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

Signs and Symptoms
Cough
Thick mucus
Wheezing
Increased RR
Increased WOB
Poor weight gain/ FTT
Frequent infections
GI issues
Barrel chest
Cyanosis, finger clubbing

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

Contributing Risk Factors
Genetics (autosomal recessive)
Immunocompromised
Being around sick people

NCLEX IV *(7)*: Reduction of Risk

Therapeutic Procedures
Non-surgical
CPT
Nebs
Postural drainage
Proper nutrition (high cal & protein)
Tube feeding
Vaccines to prevent infection
O2
Surgical
Lung transplant
PEG tube

Prevention of Complications
(Any complications associated with the client's disease process? If not what are some complications you anticipate)
Risk for infection
FTT
GI issues, poor absorption
Anxiety
Respiratory distress
Diabetes
Infertility

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

Medication Management
Nebs (many different types)
Abx
Pancreatic enzymes
Fat soluble vitamins
Antipyretics

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

Non-Pharmacologic Care Measures
CPT, postural drainage
Flutter device
Proper nutrition & hydration
Exercise within limits
O2 supplementation
PT/ RT

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

Stressors the client experienced?
Missing school, normal childhood
Frequently being sick
Family stress
Risk for complications
Long term effects

Client/Family Education

Document 3 teaching topics specific for this client.
- Importance of needing to follow treatment regimen
- Preform CPT & postural drainage before meals
- Infection prevention techniques

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

Multidisciplinary Team Involvement
(Which other disciplines were involved in caring for this client?)
Pediatrician
CF clinic
Pulmonologist
Gastroenterologist
Nutritionist
RT

	Nurses

Patient Resources
Online resources Support groups Family support Education material

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 was how important it is to involve both the patient and their parents when caring for a pediatric patient. It showed me how family centered care has such a big impact especially in the pediatric population. It is also very important to involve the child in their care and management of the illness & tailor it to meet the specific needs of the client & their family. =

2. **What was something that surprised you in the care of this patient?**
   One thing that surprised me about this was how important it was to tailor the education and information based on the specific needs of the child. Gary was having some treatment noncompliance with his home care of CF. I was able to see how a multidisciplinary team approach to educating him on follow his treatment was key to make sure he will be successful at home.

3. **What is something you would do differently with the care of this client?**
   One thing I would have done differently for Gary is I would have spent more time with him going over his plan at home for treatment and how to be successful. I think it would have been helpful for the nurse to ask Gary what barriers were getting in his way of doing hist treatment at home & helping him and his family come up with a plan and how to stick to it.

4. **How will this simulation experience impact your nursing practice?**
   This simulation helped me better understand the importance of family centered care in the pediatric population. It especially helped me understand how to implement this when you are caring for an older child or adolescent. It is different from caring for a younger child when most of the teaching is focused on the parent, rather then spending a lot of time also educating the patient now that they can play an active role in their treatment & health. It also helped me better understand how a child with a chronic condition and who is in the hospital a lot can differ from a normally healthy child who is admitted for being acutely ill. Moving forward I think that this will help me better interact with thee older pediatric populations as well as the ones with more chronic conditions.

5. **Discuss norms or deviations of growth and development that was experienced during the simulation, including developmental stage.**
   Gary is in the adolescent stage of growth & development. He displayed some of the normal behavior of this age group such as wanting to play games and avoiding school. In terms of psychological development Gary was hitting his milestones mostly as expected. One thing that differs for Gary is that he has a chronic health condition and spends a lot of time in the hospital and at appointments. This can impact his psychosocial skills & his interactions with his peers. On the physical side of growth and development Gary is in the 5th percentile for his growth & is considered failure to thrive. This is because his CF greatly effects his GI system, therefore he is behind on physical growth. Gary has a PEG to help him obtain more nutrients to help him gain weight and grow.