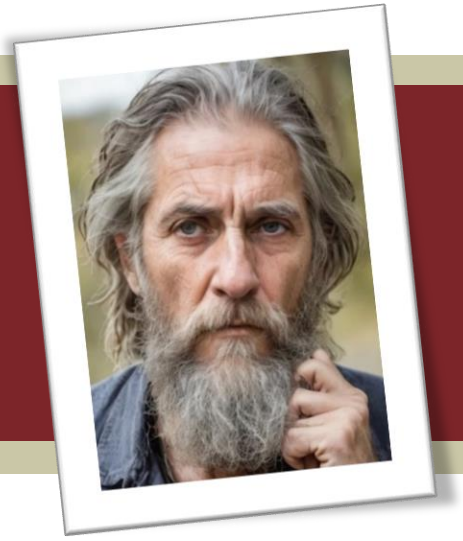
Section 4: Case Studies

This section introduces five case study scenarios. Each case study provides a focused approach within one of the spheres of care and addresses multiple SDOH domains.



CASE STUDY: Stanley

CONCEPTS

- Gas Exchange
- Perfusion
- Collaboration
- Clinical Judgment

EXEMPLAR

- COPD

SPHERE OF CARE

- Chronic Disease Management

SDOH DOMAIN

- Health Care Access & Quality
- Social & Community Context
- Neighborhood & Built Environment

STUDENT LEARNING OUTCOMES

1. Identify objective assessment findings indicative of COPD exacerbations.
2. Differentiate between COPD, pneumonia, pulmonary embolism, and asthma.
3. Interpret appropriate collaborative measures for a client with COPD.
4. Determine elements of a teaching plan to address health promotion.

SCENARIO SUMMARY

A 77-year-old male with a history of chronic obstructive pulmonary disease (COPD) is being admitted to the medical-surgical floor with acute COPD exacerbation for the fifth time in the past six months.

NURSING ROLE

Medical-Surgical Acute Care

The medical-surgical nurse has been notified they are receiving an admission from the emergency department (ED). The nurse received a verbal report via telephone from the ED nurse and prepared the room for the client per unit procedures. The client arrives at the unit at 1430 and is accompanied by his wife of 32 years, Jean. The admitting nurse has charted the following information.

Flemming, Stanley A.	Age: 77 years	Weight: 155 lb	Provider: Terry Boulder
Allergies: Penicillin	Code Status: Full	Height: 69"	Encounter #: 61816956483

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/20/XX 1430	**MEDICAL HISTORY**
	Chronic bronchitis, emphysema, hypertension, asthma, anxiety
	SURGICAL HISTORY
	Ruptured abdominal aortic aneurism with subsequent abdominal hernia repair (15 years ago)
	SOCIAL HISTORY
	Lives in a 55-year-old, low-income apartment building with his wife in a small rural community. Previously a bench carpenter and built cabinets for a living where he was around fine dust and debris, still helps when he can. Smokes 15 cigarettes per day, denies alcohol, walks around the block 4x/week
	VACCINATION HISTORY
	Influenza: October (2 years ago) Pneumococcal: November (2 years ago)

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/20/XX 1435	**Nursing Admit Note:** Client admitted to the medical-surgical floor from the emergency department with a diagnosis of acute exacerbation of COPD. Upon arrival, client experiencing difficulty breathing at rest with a productive cough. Client seems irritable and anxious. Client states he is sleeping poorly and is always tired. States he is "sick and tired of being sick and tired, it is one thing after another." Client has a history of emphysema, chronic bronchitis, hypertension, asthma, anxiety, and tobacco use. He quit smoking when he was 32 years old but started again approximately 7 years ago after the death of his brother. Client appears weak and cachectic, noting the client has had a poor appetite over the past 3 days. Wife is present in the room with client stating she is concerned about his frequent hospitalizations.
1445	**Admit Assessment:** Alert and oriented x4, irritable, anxious. Pupils equal and reactive to light. Coarse crackles auscultated in bilateral lower and upper lung fields. Labored respiratory effort, using accessory muscles. Larger than normal anterior-poster chest diameter. Heart tones normal, S1 and S2 present. 2+ pulses palpated in bilateral radial, pedal, and post-tib sites. Abdomen soft and non-tender, no distension. Bowel sounds hypoactive in all 4 quadrants. Client states he has not had any issues passing bowel movements or with urination. Last void was dark yellow per client. Clubbing noted bilaterally in upper extremity digits with a capillary refill of 6 seconds. No signs of edema. Vital signs: T 101.9°F, HR 92 bpm, RR 23 breaths/min, BP 138/90, SpO2 86% on 3 L NC.

Flemming, Stanley A.	Age: 77 years	Weight: 155 lb	Provider: Terry Boulder
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HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/20/XX	ADMISSION MEDICATION RECONCILIATION		
	MEDICATION	**DOSE**	**LAST TAKEN**
	Prednisone	5 mg daily	Morning on 5/20
	Ipratropium Bromide/ Albuterol Sulfate	20 mcg/100mcg QID	Morning on 5/20
	Fluticasone	1 puff q12hr	Morning on 5/20
	Amitriptyline	2.5 mg daily	Morning on 5/20
	Metoprolol	200 mg daily	Morning on 5/20
	Hydrochlorothiazide	25 mg daily	Morning on 5/20
	Albuterol inhaler	2 puffs PRN	While sitting in the ED on 5/20

QUESTION: Multiple Response Select All That Apply
Scoring Rule: +/-

What findings from Stanley’s admission to the medical-surgical floor are of immediate concern to the admitting nurse?

- ❑ T 101.9°F
- ❑ SpO2 86% on 3 L NC.
- ❑ Cachectic and poor appetite
- ❑ Hypoactive bowel sounds
- ❑ Course crackles bilateral lung fields
- ❑ Productive cough
- ❑ Accessory muscles while breathing
- ❑ Digital clubbing
- ❑ Smoking 15 cigarettes a day
- ❑ Respiratory rate 23 breaths/minute

Putting It All Together

DEBRIEF

The client's oxygenation is compromised due to the COPD exacerbation. This is evident by the low pulse oximetry reading, tachypnea, utilization of the accessory muscles, and coarse crackles in the lung fields, making these priority concerns for the nurse. Additionally, the client's fever and productive cough are of concern and could be indicative of an infectious process. The client's poor appetite, cachectic appearance, digital clubbing, and smoking are not of immediate concern to the nurse. While these findings are important to the client's holistic health picture, the nurse will want to act on the immediate compromised findings to improve the client's immediate status.

COPD is a lung condition characterized by chronic respiratory symptoms from abnormalities in the airways and/or alveoli. This causes persistent and often progressive airflow and breathing problems. COPD is a major cause of chronic morbidity and mortality in the United States and worldwide. COPD is now one of the top three causes of death worldwide, and 90% of these deaths occur in low- and middle-income countries (Global Initiative for Chronic Obstructive Lung Disease, 2023). The lungs rely on their natural elasticity to bring air in and out of the body. COPD causes the lungs to lose their natural elasticity and remain in a hyperinflated state at exhalation. Limited airflow in clients with COPD is progressive and associated with environmental inflammatory responses. In conjunction with the inflammatory response, there is an increase in goblet cells leading to hypersecretion of mucus that can also impede oxygenation (Mayo Clinic, 2020).

What Do You Think About?

1. What is the effect of chronic inflammation on the pulmonary vasculature over time?
2. Describe the multifaceted pathophysiology of COPD.
3. What specific SDOH are impacting Stanley's current health state?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

This case study focuses on an individual with recurrent COPD exacerbations and addresses three of the five social determinants of health: *Health Care Access & Quality, Neighborhood & Built Environment, and Social & Community Context.* Each of these domains has a significant impact on individuals affected by COPD.

The domain, *Neighborhood & Built Environment*, includes related objectives specific to respiratory diseases such as COPD and asthma in both adults and children (RD-D04, RD-D03, RD-D01). Reducing the number of hospitalizations for these respiratory diseases, along with reducing environmental triggers and ensuring people get the right medications, is the focus of Healthy People 2030. Improving the health and safety in neighborhoods where people live will have a major impact on their health and well-being. Stanley's reoccurring COPD exacerbations should not be overlooked from his home or neighborhood environment to help identify possible environmental triggers and other safety risks.

The nurse comes in to update Stanley that the provider has ordered a chest x-ray, labs, and sputum culture. The chest x-ray will be performed at the bedside, and a phlebotomist is on their way up to draw blood for the labs. The nurse provides education to Stanley about the process of collecting the sputum sample and asks him if he is able to produce some sputum. Stanley slides to the edge of the bed to better position himself in an upright position and puts his arms over the side table. After a few coughs, Stanley excretes a small amount of dark yellowish-green sputum into the cup. The nurse assists Stanley back to a comfortable, safe position.

Flemming, Stanley A. | Age: 77 years | Weight: 155 lb | Provider: Terry Boulder

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HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

DATE / TIME	PROVIDER ORDERS
5/20/XX **1500**	Admit to the medical-surgical floor for COPD and possible pneumonia
	Obtain vital signs q4hr
	Continuous pulse oximetry readings. Titrate oxygen to maintain SpO2 88-92%
	NOW: Collect sputum sample; send to lab for analysis
	NOW: Collect BMP and ABG
	NOW: Chest x-ray
	Medications: Prednisone 5 mg daily, Ipratropium Bromide/Albuterol Sulfate 3 mg/0.5mL QID, Fluticasone 1 puff BID, Amitriptyline 2.5 mg daily, Hydrochlorothiazide 25mg daily, Metoprolol 200 mg daily, Albuterol 2 puffs PRN

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

LAB	REFERENCE RANGE	5/20 1514
Sodium	135-145 mEq/L	145
Potassium	3.6-5.5 mEq/L	3.6
Magnesium	1.46-2.68 mg/dL	1.9
Chloride	95-105 mEq/L	84.7
Calcium	8.8-10.7 mg/dL	8.4
Glucose	70-100 mg/dL	92
WBC	5,000-10,000	14.2
ABGs		
pH	7.35-7.45	7.30
CO2	35-45 mmHg	50
O2	80-100%	74
HCO3	22-26 mEq/L	28

DIAGNOSTICS		
5/20/XX **1615**	**Radiologist report:** Hyperexpansion with evidence of air pockets (bullae) and dark lung fields. Consolidation, a flattened diaphragm, and hypertrophy of the right ventricle are noted.	

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HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/20/XX **1435**	**Nursing Admit Note:** Client admitted to the medical-surgical floor from the emergency department with a diagnosis of acute exacerbation of COPD. Upon arrival, client experiencing difficulty breathing at rest with a productive cough. Client seems irritable and anxious. Client states he is sleeping poorly and is always tired. States he is "sick and tired of being sick and tired, it is one thing after another." Client has a history of emphysema, chronic bronchitis, hypertension, asthma, anxiety, and tobacco use. He quit smoking when he was 32 years old but started again approximately 7 years ago after the death of his brother. Client appears weak and cachectic, noting the client has had a poor appetite over the past 3 days. Wife is present in the room with client stating she is concerned about his frequent hospitalizations.
1445	**Admit Assessment:** Alert and oriented x4, irritable, anxious. Pupils equal and reactive to light. Coarse crackles auscultated in bilateral lower and upper lung fields. Labored respiratory effort, using accessory muscles. Larger than normal anterior-poster chest diameter. Heart tones normal, S1 and S2 present. 2+ pulses palpated in bilateral radial and pedal, and post-tib sites. Abdomen soft and non-tender, no distension. Bowel sounds hypoactive in all 4 quadrants. Client states he has not had any issues passing bowel movements or with urination. Last void was dark yellow per client. Clubbing noted bilaterally in all upper extremity digits with a capillary refill of 4 seconds. No signs of edema. Vital signs: T 101.9°F, HR 92 bpm, RR 23 breaths/min, BP 138/90, SpO2 86% on 3 L NC
1520	**Nursing Note:** Entered the room, where the client was sitting upright in bed with wife at the bedside. Performed patient education re: sputum sample and assisted client with the collection. A small amount of thick, dark, yellow-green sputum was expelled from the client and sent to the laboratory. Client was assisted back in bed to a comfortable, safe, upright position.

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HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry	Pain
5/20 1445	101.9°F	92	138/90	22	86% (3 L NC)	1
5/20 1525		94		23	88% (3 L NC)	1

QUESTION: Matrix Multiple Response
Scoring Rule: +/-

Associate Stanley's objective assessment findings with the corresponding respiratory condition. Each column must have at least one assessment piece. Some may have more than one respiratory condition associated with them.

Objective Assessment	COPD	Pneumonia	Pulmonary Embolism	Asthma
Dyspnea				
Barrel chest appearance				
Expiratory wheezing				
Tachypnea				
Digital clubbing				
Productive cough				
Fever				
Abnormal ABG results				

Putting It All Together

DEBRIEF

Identifying respiratory conditions clinically manifested with dyspnea does not narrow down possible causes of a client's condition. Nurses must utilize all clinical components when analyzing cues. Additionally, the nurse organizes, and links recognized cues to the client's clinical presentation and considers potential issues. From there, the nurse narrows down what is the likely cause.

Clinical manifestations of COPD include dyspnea, increased anterior/posterior diameter (A/P diameter) or barrel chest appearance, expiratory wheezing, tachypnea, digital clubbing, and productive cough. An increased A/P diameter and clubbing of the digits are not clinical manifestations of pneumonia, pulmonary embolism, or asthma. Sudden shortness of breath and chest pain are common symptoms of a pulmonary embolism, while wheezing is rare, and if a cough is developed, often, it is dry or blood-tinged. Asthma is accompanied by shortness of breath and wheezing upon exhalation and is the most common sign in children with asthma. COPD requires a multidisciplinary approach, with healthcare professionals coordinating inputs and suitable therapies, medications, and monitoring equipment. Because COPD is a chronic and progressive disease, it is essential to promote patient empowerment.

What Do You Think About?

1. What other information would help establish the significance of cues for clients with pulmonary conditions?
2. As the nurse, who else would you anticipate would need to be a part of a client with COPD healthcare's team? What would a collaborative care team look like?
3. What are some interventions and policy changes at the local, state, and federal level to help reduce health and safety risks and promote health?

Nurses have the unique ability to impact the client's health education, early identification of decompensation, respiratory rehabilitation, and palliative care. Empowering nurse management of COPD clients through home visits and remote management with telemedicine is linked to achieving better outcomes in the day-to-day management of COPD and improving client's knowledge of the disease (Aranburu-Imatz et al., 2022).

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

The SDOH domain, *Neighborhood & Built Environment*, is addressed in this case study when considering the causes of Stanley's COPD and recurrent exacerbations. Both environmental and host factors should be considered. Environmental exposures, such as tobacco smoke and inhalation of particles, are the leading cause of COPD. Additional considerations may include occupational hazards, air quality, and genetic abnormalities. In addition, the exposures individuals occur at their workplaces can harm their health, such as secondhand smoke, unsafe air quality, and loud noises (Healthy People 2030). Stanley's previous occupation exposed him to many years of fine dust particles, in addition to his smoking for many years. Recognizing the correlation of such risk factors is necessary when educating, advocating, and helping clients.

It has been 4 hours since the nurse sent down the sputum culture, and Stanley's labs were drawn from the phlebotomist. Stanley's call light comes on, and the nurse responds. Upon arrival into Stanley's room, the nurse sees Stanley sitting on the side of his bed, leaning over the bedside table, and water spilled on the floor. Stanley is severely dyspneic and tells the nurse, "I'm sorry…" (gasp for breath) "I spilled…." (gasp for breath) "my water." The nurse recognizes a decline in Stanley and looks at the continuous pulse ox machine, which reads 84%.

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1520	**Nursing Note:** Entered the room, where the client was sitting upright in bed with wife at the bedside. Performed patient education re: sputum sample and assisted client with the collection. A small amount of thick, dark, yellow-green sputum was expelled from the client and sent to the laboratory. Client was assisted back in bed to a comfortable, safe, upright position.
1930	**Nursing Note**: Nurse responded to the client's call light. Upon arrival to the room, the client was found to be sitting on the side of the bed, leaning over his bedside table. The client had appeared to accidentally spill his water on the floor. The client was severely dyspneic, pursed-lip breathing noted, and only able to articulate two words between gasps for air. Continuous pulse oximetry reading 84%, HR 102bpm.

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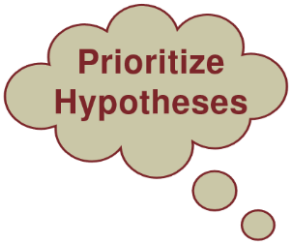
HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

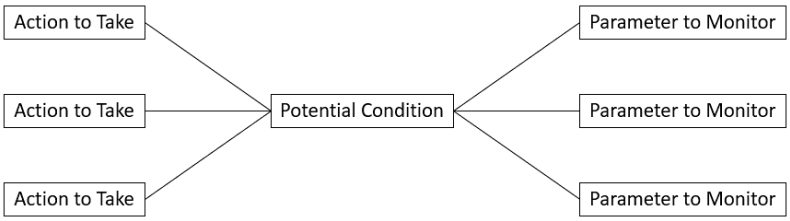
Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry	Pain
5/20 1445	101.9°F	92	138/90	22	86% (3 L NC)	1
5/20 1525		94		23	88% (3 L NC)	1
5/20 1930		102			84% (3 L NC)	



QUESTION: Bow-tie

Scoring Rule: 0/1

It is important for the nurse to quickly identify what condition Stanley is most likely experiencing. Complete the diagram below by selecting the condition the client is most likely experiencing, three actions the nurse should take, and three parameters the nurse should monitor to assess the client's progress.



Actions To Take	Which Condition is the Client Most Likely Experiencing?	Parameters To Monitor
Lay the client down and prop pillows behind him so he is laying on his left side	COPD exacerbation	Pulse oximetry
Prepare to administer an air entrainment mask	Worsening Pneumonia	Client's respiratory patterns
Provide a calming atmosphere	Pulmonary Embolism	Vital signs
Take the client's temperature	Asthma attack	Client's fever
Call the provider	Cor pulmonale	Client's ability to drink fluids
Complete a full head-to-toe assessment		Activity tolerance

Putting It All Together

DEBRIEF

Stanley is experiencing a COPD exacerbation. This is evident by the decreased pulse oximetry, dyspnea, and use of accessory muscles. It is essential for the nurse to quickly evaluate and hypothesize appropriate action. Recognizing a decline in the client's condition requires the nurse to call the primary provider to update them on the status change.

The nurse will anticipate the provider ordering a different kind of oxygen delivery therapy, including an air-entrainment (venturi) mask. This oxygen device allows the healthcare provider to provide an exact FiO2. When administering oxygen to clients with COPD, the nurse should start with the lowest FiO2 to maintain adequate oxygenation and titrate it based on the client's response. Additionally, the nurse will want to maintain a calm atmosphere to reduce anxiety in the client. The nurse may call an unlicensed assistant personnel (UAP) into the room to assist. Increased anxiety in the client may worsen their respiratory patterns, further exacerbating the problem.

Laying the client down on his left side is not an optimal position and may cause a further decline in the client's oxygenation status. Client's that are experiencing respiratory complications should be sat up to allow expansion of the rib cage. Completing a full head-to-toe assessment and taking the client's temperature are not the priority actions for a client with a declining respiratory status.

What Do You Think About?

1. What actions and/or assessment pieces would indicate the client is continuing to decline?
2. Who might the nurse also include in the care of the client? What other healthcare professionals would be beneficial in providing holistic care?
3. Relate Stanley's confirmed pneumonia infection with his current COPD exacerbation.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

The second SDOH domain addressed in this case study is *Health Care Access & Quality*. About one in ten people in the United States do not have health insurance. Individuals without health insurance are less likely to have a primary care provider and may not be able to afford health care services or medications needed. Recognizing COPD and other respiratory diseases impact clients beyond dyspnea and increasing the proportion of clients who understand their health information is more likely to lead to better health outcomes.

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) is a collaboration of healthcare professionals and public health officials from around the world that work together to provide evidence-based treatments in the management of COPD and raise awareness to improve, prevent, and treat lung disease (GOLD, 2022). Providing guidelines that include outpatient and inpatient care strategies to reduce respiratory exacerbations and improve clients' quality of life is a primary example of increasing healthcare quality. Improving healthcare communication (HC/HIT-02) and client understanding (HC/HIT-01) are both objectives of the *Health Care Access & Quality* domain.

Stanley's acute COPD exacerbation has subsided after the initiation of a venturi mask, bronchodilators, optimal position, and relaxation techniques. Now that Stanley is in stable condition, the nurse is reviewing additional orders placed by the provider.

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HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

DATE / TIME	PROVIDER ORDERS
5/20/XX 1500	Admit to medical-surgical floor for COPD and possible pneumonia
	Obtain vital signs q4hr
	Continuous pulse oximetry readings. Titrate oxygen to maintain SpO2 88-92%
	NOW: Collect sputum sample; send to lab for analysis
	NOW: Collect BMP and ABG
	NOW: Chest x-ray
	Medications: Prednisone 5 mg daily, Ipratropium Bromide/Albuterol Sulfate 3 mg/0.5mL QID, Fluticasone 1 puff BID, Amitriptyline 2.5 mg daily, Hydrochlorothiazide 25mg daily, Metoprolol 200 mg daily, Albuterol 2 puffs PRN
5/20/XX 1935	STAT: Albuterol nebulizer 2.5mg inhaled solution
	STAT: Obtain venturi mask, initiate at 35% 4L/flow. Titrate to keep pulse oximetry 88-92%
5/20/XX 2025	Administer and titrate oxygen therapy to maintain pulse ox levels between 88-92%
	Restrict PO fluids to 1,500 mL per day
	Encourage pursed-lip breathing technique
	Flutter valve and incentive spirometer q2hr while awake
	Monitor WBC; am labs daily
	Encourage high-calorie foods, full-fat dairy, and cured meats
	Evaluation for non-invasive positive pressure ventilation (NPPV)
	Medications: Salmeterol q12hr, Tiotropium daily, PO Acetaminophen q6hr PRN for fever, IV methylprednisolone q12hr, IV ampicillin/sulbactam q6hr x5 days, PO cough suppressant, Albuterol nebulizer 2.5mg QID

Flemming, Stanley A.	Age: 77 years	Weight: 155 lb	Provider: Terry Boulder
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Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry	Pain
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5/20 1525		94		23	88% (3 L NC)	1
5/20 1930		104		30	84% (3 L NC)	
5/20 1940		102		28	85% (VM 35%)	
5/20 1945		100		28	87% (VM 35%)	
5/20 1950		97		24	89% (VM 35%)	
5/20 2000	100.8°F	95	148/93	22	90% (VM 35%)	1
5/20 2015		90		20	91% (VM 35%)	

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/20/XX 1520	**Nursing Note:** Entered the room, where the client was sitting upright in bed with wife at the bedside. Performed patient education re: sputum sample and assisted client with the collection. A small amount of thick, dark, yellow-green sputum was expelled from the client and sent to the laboratory. Client was assisted back in bed to a comfortable, safe, upright position.
1930	**Nursing Note**: Nurse responded to the client’s call light. Upon arrival to the room, the client was found to be sitting on the side of the bed, leaning over his bedside table. The client had appeared to accidentally spill his water on the floor. The client was severely dyspneic, pursed-lip breathing noted, and only able to articulate two words between gasps for air. Continuous pulse oximetry readying 84%, HR 102.
2015	**Nursing Note:** Primary provider notified of client’s condition. Orders placed. Client anxious and trembling. UAP sitting at bedside with client providing relaxation techniques and continued encouragement of pursed-lip breathing. Venturi mask obtained by respiratory therapy. Initiated oxygen device at 35% FiO2 with 4L flow and prescribed bronchodilator. Continued monitoring of pulse oximetry and heart rate. Client responded to medications and oxygen therapy. Pulse oximetry began to rise and heart rate steadily declined.

QUESTION: Matrix Multiple Choice

Scoring Rule: +/-

The nurse reviews the orders placed by the provider. For each intervention, indicate whether the intervention is appropriate or not appropriate.

Potential Intervention	Appropriate	Not Appropriate
Administer and titrate oxygen therapy to maintain Sp02 levels between 88-92%		
Administer Neb Salmeterol q12hr		
Administer Neb Tiotropium daily		
Administer PO Acetaminophen q6hr PRN for fever		
Administer IV methylprednisolone q12hr		
Administer IV ampicillin/sulbactam q6hr x5 days		
Administer PO cough suppressant		
Restrict PO fluids to 1,500 mL per day		
Encourage pursed-lip breathing		
Flutter valve and incentive spirometer q2hr while awake		
Monitor WBC; am labs daily		
Evaluation for non-invasive positive pressure ventilation (NPPV)		
Encourage high-calorie foods, full-fat dairy, and cured-meats		

Putting It All Together

DEBRIEF

Now that Stanley's respiratory status is stable, the nurse can review additional interventions to continue the positive progression in Stanley's healthcare status. Maintaining Stanley's oxygen levels between 88-92% is appropriate for COPD clients to maintain an adequate respiratory drive. Administering bronchodilators and steroids will assist in alleviating the narrowing and inflammation of the airways. Using bronchodilators for clients affected with COPD relaxes the muscles in the lungs and widens the airways in the bronchi. Individuals may be prescribed bronchodilators that are short-acting, long-acting, or both. Short-acting bronchodilators are used to relieve a sudden, unexpected period of dyspnea. Long-acting bronchodilators are used more regularly to help maintain continued control of COPD. Administering an IV antibiotic is needed to control bacterial pneumonia; ampicillin/sulbactam contains penicillin and therefore is contraindicated for this client due to his allergy. The nurse would want to contact the primary provider for a different antibiotic. Administering acetaminophen to reduce Stanley's fever secondary to pneumonia and monitoring WBC levels will help determine the antibiotic's efficacy. Encouraging pursed-lip breathing, the use of a flutter valve, and incentive spirometry will increase positive expiratory pressure (PEP) and help mobilize secretions with vibrations. Further evaluation for non-invasive positive pressure ventilation (NPPV) therapy should be considered as a part of the treatment plan for COPD clients experiencing multiple exacerbations. NPPV has been shown to improve outcomes and lowering complications and mortality rates (AHRQ, 2011). Managing symptoms of COPD include making healthier changes to diet. Nurses want to encourage COPD clients to partake in high-quality, high-density foods. Full-fat dairy products like ice cream, yogurt, cheese, butter, and buttermilk contain casomorphine. These chemicals increase mucus production. Therefore, alternative products such as soy or almond milk are recommended. Additionally, processed meats contain nitrates linked to worsening lung conditions (American Lung Association, 2023b) and would not be recommended for COPD clients.

What Do You Think About?

1. What is the significance of a venturi mask for individuals with COPD? How does it differ from a simple mask?
2. Consider the role of Stanley's wife during a COPD exacerbation. How can family assist the nurse in a situation like this?
3. What community resources could assist Stanley with adherence to the recommended dietary changes?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Dietary changes can be a challenge for some clients. The nurse should assess Stanley's willingness to change his diet and his understanding of the dietary recommendations. Effective health communication is critical to health and well-being. Health information and messages are often overly complex, making them hard to understand and use. Health care providers who communicate clearly and use methods like teach-back and shared decision-making can help people make informed health-related decisions (Healthy People 2030). The domain, *Social and Community Context*, addresses the importance of health literacy and sustainable nutrition. Does the community where Stanley lives have access to alternative calcium clad foods that are affordable enough for him to employ the dietary changes recommended.

It has been 1 day since Stanley was admitted to the medical-surgical floor. The same nurse who admitted Stanley is returning to their shift and reviewing Stanley's morning labs, vital signs, nursing notes, and medications for the day.

Flemming, Stanley A. | Age: 77 years | Weight: 155 lb | Provider: Terry Boulder

Allergies: Penicillin | Code Status: Full | Height: 69" | Encounter #: 61816956483

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

LAB	REFERENCE RANGE	5/20 1514	5/20 2200	5/21 0650
Sodium	135-145 mEq/L	145		140
Potassium	3.6-5.5 mEq/L	3.6		3.9
Magnesium	1.46-2.68 mg/dL	1.9		2.1
Chloride	95-105 mEq/L	84.7		89
Calcium	8.8-10.7 mg/dL	8.4		8.3
Glucose	70-100 mg/dL	92		74
WBC	5,000-10,000	14.2		12.2
ABG				
pH	7.35-7.45	7.30	7.34	7.34
CO2	35-45 mmHg	50	48	48
O2	80-100%	74	85	85
HCO3	22-26 mEq/L	28	26	26

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry	Pain
5/20 2000	100.8°F	95	148/93	22	90% (VM 35%)	1
5/20 2015		90		20	91% (VM 35%)	
5/20 2200		93		20	92% (VM 35%)	
5/21 0000	99.9°F	89	132/87	18	93% (VM 35%)	0
5/21 0400	99.2°F	85	129/86	18	94% (VM 35%)	

Flemming, Stanley A.	Age: 77 years	Weight: 155 lb	Provider: Terry Boulder
Allergies: Penicillin	Code Status: Full	Height: 69"	Encounter #: 61816956483

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

MEDICATION ADMINISTRATION RECORD

Date of Order	Medication	Dosage	Route	Frequency	Date of Administration	Time of Administration
5/20	Salmeterol	50 mcg (1 puff)	Inhalation	Q12hr	5/21	0615
5/20	Tiotropium	18 mcg/5mL	Neb	Daily	5/20	2042
5/20	Methylprednisolone	1 mg/kg	IVP	Q6hr	5/20	2102
5/20	Acetaminophen	650 mg	PO	q6hr	5/20	2110
5/20	Albuterol Sulfate	2.5 mg/3 mL	Neb	q6hr	5/21	0755
~~5/20~~	~~Ampicillin/Sulbactam~~	~~3g/1g~~	~~IV~~	~~q6hr x 5 days~~	~~---~~	~~---~~
5/20	Azithromycin	500 mg x1 250 mg x4	PO	Daily x 5 days	5/20	2200

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/20/XX **1520**	**Nursing Note:** Entered the room, where the client was sitting upright in bed with wife at the bedside. Performed patient education re: sputum sample and assisted client with the collection. A small amount of thick, dark, yellow-green sputum was expelled from the client and sent to the laboratory. Client was assisted back in bed to a comfortable, safe, upright position.
1930	**Nursing Note**: Nurse responded to the client's call light. Upon arrival to the room, the client was found to be sitting on the side of the bed, leaning over his bedside table. The client had appeared to accidentally spill his water on the floor. The client was severely dyspneic, pursed-lip breathing noted, and only able to articulate two words between gasps for air. Continuous pulse oximetry readying 84%, HR 102.
2015	**Nursing Note:** Provider notified of client's condition. Orders placed. Client anxious and trembling. UAP sitting at bedside with client providing relaxation techniques and continued encouragement of pursed-lip breathing. Venturi mask obtained by respiratory therapy. Initiated oxygen device at 35% FiO2 with 4L flow and prescribed bronchodilator. Continued monitoring of pulse oximetry and heart rate. Client responded medication and oxygen therapy. Pulse oximetry began to rise and heart rate steadily declined.
5/21/XX **0600**	**Nursing Note:** Client rested throughout the night. Client became anxious when wife left and went home for the night. Reassurance and music therapy helped reduce the client's anxiety. Client was able to rest throughout the night. When using the bedside commode, client's pulse oximetry would drop to 84-85% with activity, would recover back to 92% when resting.

QUESTION: Multiple Choice
Scoring Rule: 0/1

The nurse enters the client's room and sees the client has just gotten in the chair after using the bedside commode. The client appears comfortable and relaxed. The nurse asks Stanley how he is feeling, and he states, "I am feeling much better than I did when I last saw you." The nurse notices Stanley's continuous pulse ox machine is reading 95%.

What action will nurse take next?

A. Titrate down the Venturi mask

B. Begin education about the flutter valve and have the client perform

C. Ask the client if he is up for a short walk in 15 minutes

D. Administer morning medications

Putting It All Together

DEBRIEF

Stanley is showing signs of improvement. The nurse recognizes this by reviewing lab results, current vital signs, client appearance, and subjective assessment. The most appropriate action for the nurse to take is to titrate down the Venturi mask to begin the weaning process from a higher oxygen device. It will be ideal for Stanley to return to a nasal cannula so he can begin flutter valve therapy, increase ambulation, and eat/drink better. Titrating down the oxygen therapy when the nurse is anticipated to be in the client's room for medication pass will allow the nurse to continuously monitor the client's response to less O2 therapy and intervene as needed.

To Maintain Airway Clearance	To Improve Breathing Patterns	To Improve Activity Intolerance
▪ Administer ordered bronchodilators and steroids ▪ Controlled coughing	▪ Diaphragmatic breathing ▪ Pursed-lip breathing ▪ Anxiety reducing measures	▪ Pace daily activities to maintain and support energy expenditure ▪ Exercise training ▪ Walking aids

What Do You Think About?

1. What additional nursing interventions should the nurse take to enhance self-management of Stanley's COPD?
2. Consider barriers related to oxygen mask therapies. How does this impact the client's ability to eat, drink, etc.?
3. How would Stanley benefit from telemonitoring or telehealth services? What barriers might there be to offering these services?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Nurses can positively impact clients with COPD through a variety of roles (hospital-based, community, palliative, respiratory). In general, each of these different nurse roles use different techniques when assisting clients with COPD. Techniques such as home telemonitoring, telecare, palliative care, health education, health training, oxygen management at home, self-efficacy, behavioral therapy and counseling, and smoking cessation techniques have all been utilized and found to be very effective. Furthermore, home visits can decrease the number of readmissions and improve the client's confidence and knowledge in self-management. Monitoring, such as telemonitoring of vital parameters, can help to reduce levels of anxiety and depression in clients with respiratory diseases (Aranburu-Imatz et al., 2022). The SDOH domain of *Health Care Access & Quality* focuses on getting people the healthcare services they need. Specifically, Stanley might benefit from the assistance of healthcare providers and nurses through the role of telehealth. Healthy People 2030 is focused on increasing the use of telehealth (AHS-R02) to improve access to health services. This would allow Stanley access and resources from the comfort of his home to intervene early and prevent a respiratory exacerbation requiring hospitalization.

It has been 6 days since Stanley was first admitted to the hospital. He has made significant improvement with his oxygenation status, resolving pneumonia, and has actively participated in all of his therapies to regain his strength. Stanley is ready to take active steps to quit smoking again. He states, "I did it once before, I can certainly do it again…and will never start again." Stanley's positive response to smoking cessation provided him with an ideal opportunity to begin pulmonary rehabilitation upon discharge.

Flemming, Stanley A. | Age: 77 years | Weight: 155 lb | Provider: Terry Boulder

Allergies: Penicillin | Code Status: Full | Height: 69" | Encounter #: 61816956483

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/26/XX 0615	**Nursing Note:** Client slept through the night. Ambulated to bathroom x2 with assist x1. Client in high spirits about possibly going home today or tomorrow.
0838	**Assessment:** Alert and oriented x4, calm and pleasant demeanor. Pupils equal and reactive to light. Fine crackles auscultated in bilateral lower lung fields. Un-labored respiratory effort. Larger than normal anterior-poster chest diameter. Heart tones normal, S1 and S2 present. 2+ pulses palpated in bilateral radial, pedal, and post-tib sites. No edema noted. Abdomen soft and non-tender, no distension. Bowel sounds active in all 4 quadrants, bowel movement last night. Client voiding, last void clear and yellow. Clubbing noted bilaterally in all upper extremity digits with a capillary refill of 4 seconds. Vital signs: T 98.9°F, HR 90 bpm, RR 18 breaths/min, BP 136/90, SpO2 90% on 3L NC.

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry	Pain
5/20 1445	101.9°F	92	138/90	22	86% (3 L NC)	1
5/21 0800	99.9°F	89	134/88	18	95% (VM 35%)	0
5/22 0800	99.1°F	85	130/86	20	91% (3 L NC)	0
5/23 0800	98.9°F	91	136/88	18	90% (3 L NC)	1
5/24 0800	99.2°F	94	140/93	18	89% (3 L NC)	0
5/25 0800	98.6°F	87	132/88	20	91% (3 L NC)	0
5/26 0800	98.9°F	90	136/90	18	90% (3 L NC)	1

Flemming, Stanley A.	Age: 77 years	Weight: 155 lb	Provider: Terry Boulder
Allergies: Penicillin	Code Status: Full	Height: 69”	Encounter #: 61816956483

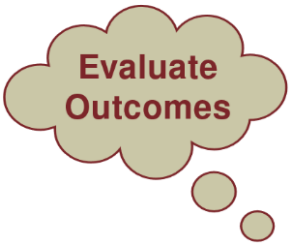
HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

DATE / TIME	PROVIDER ORDERS
5/26/XX 1018	Discharge to home: consult pulmonary rehab and social services for home health care
	Continue home oxygen therapy
	Follow-up visit to clinic in 2 weeks
	Pneumonia vaccine prior to discharge
	Recommend Smoking cessation; provide client education at discharge
	Educate on inhaler technique

DISCHARGE MEDICATION RECONCILIATION

Allergies: Penicillin

MEDICATION	DOSE	Continue/Discontinue/Start
Prednisone	5 mg daily	Continue
Ipratropium Bromide/ Albuterol Sulfate	3mg/0.5mL/cc solution QID via nebulizer	Start
Ipratropium Bromide/ Albuterol Sulfate	2 puffs four times a day and as needed. Do not use more than 12 puffs in any 24-hour period	Discontinue
Tiotropium Bromide	1.25 mcg/actuation	Start
Fluticasone	1 puff q12hr	Continue
Amitriptyline	2.5 mg daily	Continue
Metoprolol	200 mg daily	Continue
Hydrochlorothiazide	25 mg daily	Continue
Albuterol inhaler	2 puffs PRN	Continue



QUESTION: Highlight Text
Scoring Rule: +/-

The nurse is performing discharge instructions to the client. Which of the follow statements from the client indicates to the nurse additional teaching and/or follow-up is needed?

Highlight your answers below.

"I should avoid crowds during cold and flu season."

"I need to quit smoking again."

"I am okay to eat foods high in fat and sugar because I burn so many calories during the day."

"I know there are many things that affect my breathing, including cold weather, high humidity, and allergens."

"I am going to use my mug at home to ensure I drink at least 8 of them during the day."

"I should take the prednisone in the morning with my donut and juice."

Putting It All Together

DEBRIEF

When discharging a client who has been admitted to the hospital multiple times, it is important for the nurse to recognize the level of knowledge and understanding the client has about their disease process, prevention measures, medications, and therapies. Furthermore, nurses must look beyond and help the client identify any barriers that may occur once leaving the hospital or acute care setting. Additionally, the nurse recognizes Stanley's inability to understand healthy food choices. The muscles of COPD clients may require ten times more calories than someone without COPD (American Lung Association, 2023a). Limiting simple carbohydrates, including table sugar, candy, cake, and regular soft drinks, can help reduce the amount of carbon dioxide produced during the breakdown of these in the body.

Pulmonary rehabilitation is a supervised program that includes exercise training, health education, breathing techniques, and support. Pulmonary rehab is a multidisciplinary approach that improves exercise tolerance, reduces dyspnea, and often leads to improved quality of life (Price & Williams, 2020). Pulmonary rehab has been shown to reduce anxiety and depression, which are linked to an increased risk of COPD exacerbations and poor health outcomes. Individuals with frequent COPD exacerbations generally have a lower quality of life with quicker progression of the disease, reduced mobility, and a more rapid decline in lung function versus those who do not have frequent exacerbations (Price & Williams, 2020).

What Do You Think About?

1. What additional teaching methods could the nurse use to enhance Stanley's knowledge?
2. Which of Stanley's SDOH will impact him the most after discharged from the hospital?
3. What might be triggering Stanley's COPD exacerbations at home?
4. Identify associations with tobacco use the nurse could incorporate with Stanley's discharge teaching.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

The goal of the domain, *Neighborhood and Built Environment*, is to create neighborhoods and environments that promote health and safety. This includes individual home environments as well. Healthy People 2030 focuses on preventing individuals from using tobacco products and helping them quit (TU-01, TU-02). Smoking harms nearly every organ in the body and increases the risk of heart disease, stroke, lung disease, and many types of cancers. Although smoking is widespread among individuals, it is more common in certain groups, including men, American Indians/Alaska Natives, individuals with behavioral health conditions, LGBTQIA+2 individuals, and those with lower incomes and education levels (U.S. Department of Health and Human Services, 2023).

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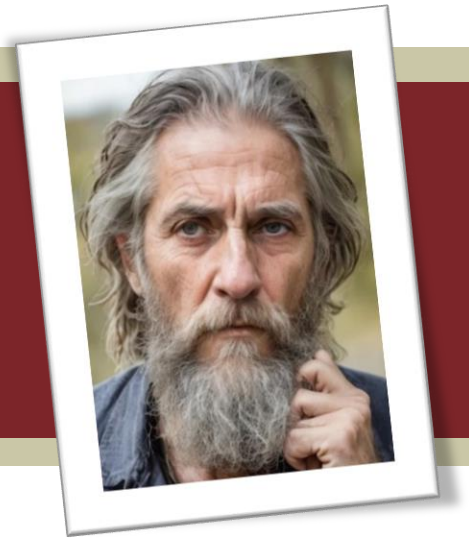


CASE STUDY: Stanley

CONCEPTS

- Gas Exchange
- Health Promotion
- Nutrition

EXEMPLAR

- COPD

SPHERE OF CARE

- Chronic Disease Management

SDOH DOMAIN

- Health Care Access & Quality
- Neighborhood & Built Environment
- Social & Community Context
- Economic Stability

STUDENT LEARNING OUTCOMES

1. Compare and contrast the role of the home health nurse role to a nurse in an acute care setting.
2. Describe how self-management interventions decrease hospital readmissions due to COPD exacerbations.
3. Identify why it is important for a home health nurse to conduct a community assessment.
4. Describe the components of an initial pulmonary assessment conducted in the home environment.

SCENARIO SUMMARY

A 77-year-old male who was recently hospitalized for COPD exacerbation and pneumonia. Has been referred to home health and pulmonary rehab upon discharge from the hospital.

NURSING ROLE

Home Health Nurse

Stanley is a 77-year-old male who was recently hospitalized for COPD exacerbation and pneumonia. After six days in the hospital, IV antibiotics, and oxygen therapy, Stanley was discharged from the hospital and referred to home health and pulmonary rehab. Due to the number of hospitalizations over the past six months, there is a concern about the client's adherence to the medication regime. A home health nurse has been assigned as Stanley's case manager and is reviewing client data and seeing Stanley for the first time today.

Flemming, Stanley A.

Account: 694028

Age: 77 years Allergies: Penicillin	Weight: 152 lb Height: 69"	**TYPE OF VISIT:** ❑ SN ☒ Medicare ☒ Medicaid ❑ SN & Supervisory ❑ Supervisory only

HOMEBOUND REASON: ❑ Needs assistance for all activities ❑ Residual weakness ❑ Requires assistance to ambulate
❑ Confusion, unable to go out of home alone ❑ Unable to safely leave home unassisted ☒ Severe SOB, SOB upon exertion
☒ Dependent upon adaptive device(s) ❑ Medical restrictions ☒Other (specify) *Home Oxygen & Pulmonary Rehab Consultation*

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/30/XX

MEDICAL HISTORY

- Chronic bronchitis, emphysema (recurrent COPD exacerbations over the past 6 months), recent pneumonia
- Hypertension (antihypertensive management with medication)
- Asthma (managed with nebulizer four times daily, albuterol as needed)
- Anxiety
- Continuous oxygen via nasal cannula

SURGICAL HISTORY

- Ruptured abdominal aortic aneurism with subsequent abdominal hernia repair (15 years ago)

SOCIAL HISTORY

- Lives in a 55 and older low-income apartment building with his wife in a small rural community.
- Previously a bench carpenter and built cabinets for a living where he was around fine dust and debris, still helps when he can. Began working full-time when he was 15 years old and did not graduate from high school
- Smokes 15 cigarettes per day, showed interest in quitting while hospitalized, states he has decreased to 12 cigarettes per day since hospitalization
- Denies alcohol
- Used to walk around the block 4x/week (has not since coming home from the hospital)

VACCINATION HISTORY

Influenza: October (2 years ago)
Pneumococcal: At hospital discharge

HOSPITAL DISCHARGE SUMMARY

Client admitted to the hospital for the sixth time in six months for COPD exacerbation. Was admitted to the medical-surgical floor with COPD exacerbation and right lower-lobe pneumonia. Client treated with nebulizers, bronchodilators, and oxygen therapy. Day of admission, client needed venturi mask for less than 24 hours, has remained on 3 L nasal canula since. Client appears anxious at times and occasionally is disoriented to place and time. Relaxation and breathing techniques have been taught and reinforced throughout hospital stay. Upon discharge, client shows interest in smoking cessation, stating he started up when his brother died 7 years ago, but knows he can quit again if it will make him feel better. Client's appetite has improved slightly and is ambulating around room independently with 1 assist for walks down hallway. Client's wife has been supportive of client throughout hospital stay. Client will discharge with a new order for home oxygen therapy. 5-day antibiotic regimen completed while in hospital. Medications reviewed with client and wife prior to discharge. Follow-up appointment with provider at clinic in 2-weeks.

5/26/XX

1335

DISCHARGE MEDICATION RECONCILIATION		
Allergies: Penicillin		
MEDICATION	**DOSE**	**Continue/Discontinue/Start**
Prednisone	5 mg daily	Continue
Ipratropium Bromide/ Albuterol Sulfate	3mg/0.5mL/cc solution QID via nebulizer	Start
Ipratropium Bromide/ Albuterol Sulfate	2 puffs four times a day and as needed. Do not use more than 12 puffs in any 24-hour period	Discontinue
Tiotropium Bromide	1.25 mcg/actuation	Start
Fluticasone	1 puff q12hr	Continue
Amitriptyline	2.5 mg daily	Continue
Metoprolol	200 mg daily	Continue
Hydrochlorothiazide	25 mg daily	Continue
Albuterol inhaler	2 puffs PRN	Continue

QUESTION: Multiple Response Select All That Apply
Scoring Rule: +/-

After reviewing the client's information, select findings that negatively contribute to Stanley's COPD symptoms? Select all that apply.

- ☐ Asthma
- ☐ Tobacco abuse
- ☐ Hypertension
- ☐ Poor adherence to medication regime
- ☐ History of ruptured aortic aneurysm
- ☐ Anxiety increased feelings of restlessness and perceived symptoms

Putting It All Together

DEBRIEF

Cigarette smoking is the leading cause of COPD. According to the American Lung Association (2023), approximately 75 percent of all COPD cases occur in people with a smoking history. When a cigarette burns, it creates more than 7,000 chemicals, and many are harmful. The chemicals in cigarette smoke weaken the lungs' defense against infections, cause constriction of the bronchial tubes, inflammation of the bronchioles, and destroy the alveoli, all of which are contributing factors to COPD.

Asthma and COPD are both chronic inflammatory lung diseases associated with significant morbidity and mortality. In both conditions, inflammation is associated with structural alterations at large and small airway levels. Both asthma and COPD are characterized by various degrees of airflow limitation, inflammation, and tissue remodeling (Kim & Rhee, 2010). This type of pathology is known as asthma-COPD overlap syndrome (Hikichi et al., 2018).

Breathing patterns in COPD clients result in shallow respirations. When this occurs, the brain can sometimes perceive there to be a stressful situation, even when there is not one. This can cause a stress response in the body, often referred to as anxiety. COPD clients should be encouraged to engage in psychotherapy, attend support groups, connect with spiritual communities, and talk with their healthcare providers to assist with the complex emotions that arise with the diagnosis of COPD (American Lung Association, 2023).

What Do You Think About?

1. How do other inhaled tobacco products, such as e-cigarettes and cigars, affect one's risk of developing COPD?
2. What preventive services could be beneficial to Stanley?
3. Discuss health care quality and the possible association with Stanley's recurrent hospitalizations for COPD exacerbations.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

This case study focuses on an individual with COPD and addresses four of the five SDOH domains, *Health Care Access and Quality*, *Neighborhood and Built Environment*, *Social and Community Context,* and *Economic Stability.*

The first of the domains is *Health Care Access and Quality.* Stanley was recently hospitalized for a COPD exacerbation recording his sixth hospital admission in six months. Access to quality health care includes assessing if the client has health care insurance. According to Healthy People 2030, about 1 in 10 people in the United States do not have health insurance. Related objectives within the *Health Care Access and Quality* domain are to reduce the proportion of emergency department visits with longer wait times than recommended (AHS-09) and to increase the proportion of adults who get recommended evidence-based preventive health care (AHS-08). Prevention of exacerbations is a therapeutic goal for clients with COPD. Stanley's scenario could factor into the population data objectives, reducing emergency department visits and receiving evidence-based preventive healthcare.

The home health nurse assigned as Stanley's case manager conducts a brief community and home assessment.

Flemming, Stanley A.

Account: 694028

Age: 77 years Allergies: Penicillin	Weight: 152 lb Height: 69"	**TYPE OF VISIT:** ❑ SN ☒ Medicare ☒ Medicaid ❑ SN & Supervisory ❑ Supervisory only

5/30/XX	**COMMUNITY & HOME ASSESSMENT**
	Stanley lives in a small rural community. There is a small downtown that hosts retail shops, family restaurant, bar and grill, bank, pharmacy, grocery store, and a department store. The houses and buildings are well-kept. The sidewalks near Stanley's apartment building are in moderate disrepair, with some uneven surfaces and cracks. There are no open green spaces in the community or evidence of public transportation. Stanley and Jean live in a low-income apartment. The exterior of the building and the grounds appear well-kept. When you enter the apartment building there is a security lock of which visitors are required to ring to be let in. There are elevators and stair access to the three floors of the apartment. The hallways are well-lit, and the carpet in the hallways are in good repair. There are small tables and mementos outside some of the apartment doors. Stanley and Jean live on the second floor in a one-bedroom apartment. Upon arrival, Stanley is sitting at the table drinking a cup of coffee. He is moderately dyspneic with audible wheezing and appears anxious. Jean is on the couch using a sequential compression device for lower extremity edema status post left nephrectomy due to kidney cancer.

QUESTION: Matrix Multiple Choice

Scoring Rule: 0/1

What social determinants of health (SDOH) may contribute to health disparities (HD) for Stanley? Each row should include a single choice.

SDOH	Contribute to HD	Does Not Contribute to HD
Poverty		
Rural community		
COPD		
Lack of green space		
Disrepair sidewalks		
Education		
Asthma		
Secured apartment		
No public transportation		

Putting It All Together

DEBRIEF

The World Health Association (WHO) describe social determinants of health (SDOH) as the non-medical factors that influence health outcomes. SDOH are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies, and political systems (WHO, 2023).

The home health environment and nursing role differ from other institutional environments and nursing roles. The home health nurse is often described as a case manager. Case management is defined as a healthcare process in which a professional helps a patient or client develop a plan that coordinates and integrates the support services that the patient/client needs to optimize the healthcare and psychosocial possible goals and outcomes. The case management process helps the client and their family navigate a complicated set of services and supports available within a benefit plan, an organization or institution, and their community (Giardino et al., 2022).

What Do You Think About?

1. Why is it important for the home health nurse/case manager to conduct a community assessment?
2. How does rural health influence SDOH?
3. What political and community actions can decrease SDOH in rural populations?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Neighborhood and Built Environment is a second SDOH domain addressed in this case study. This domain aims to create neighborhoods and environments that promote health and safety. The neighborhoods people live in greatly impact their health and well-being (Healthy People 2030). Many people in the United States live in neighborhoods with high rates of violence, unsafe air or water, and other health and safety risks. Racial/ethnic minorities and people with low incomes are more likely to live in places with these risks. In addition, some people are exposed to things at work that can harm their health, like secondhand smoke or loud noises (Healthy People 2030). Related objectives to the *Neighborhood and Built Environment* domain include reducing the number of hospitalizations for COPD (RD-D04) and increasing the proportion of smoke-free homes (TU-18).

The community assessment provides the nurse with a snapshot of the *Neighborhood and Built Environment.* The community assessment can assist the nurse with actions to improve health, such as identifying resources, assessing safety, access to services, and providing a foundation for education, health promotion, and risk reduction education.

After completing the community and home assessment, the home health nurse notices Stanley is moderately dyspneic with audible wheezing and appears anxious. He is positioned in a tripod position while sitting at the kitchen table. The nurse asks Stanley how he is doing, and he says... "really well, just got back from my truck."

The nurse sits down at the table with Stanley and records the following data.

Flemming, Stanley A.

Account: 694028

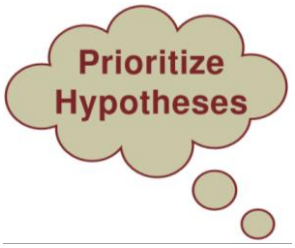
Age: 77 years Allergies: Penicillin	Weight: 152 lb Height: 69"	**TYPE OF VISIT:** ❑ SN ☒ Medicare ☒ Medicaid ❑ SN & Supervisory ❑ Supervisory only

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry
5/29 0915	98.9°F	77 bpm	150/86 mmHg	25 bpm	86% (3 L NC)

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/30/XX 0930	**Nursing Note:** While reviewing client's medications and treatment with him, he states he uses a portable oxygen concentrator in his apartment and when he ambulates outside of his apartment. He takes the portable oxygen concentrator when he goes to his truck to smoke in the parking lot because the apartment management does not allow smoking in the building. Client states he uses his albuterol inhaler 3-4 times daily and his nebulizer four times daily. Client admits to smoking 12 cigarettes per day, which is better than the 15 he used to smoke prior to his last hospitalization. States he is proud of his accomplishments.



QUESTION: Matrix Multiple Choice
Scoring Rule: 0/1

What interventions are relevant in Stanley's initial pulmonary assessment?

Each row should include a single choice.

Intervention	Relevant	Not Relevant
Assess Stanley for additional signs of hypoxia		
Ask Stanley to apply oxygen via nasal cannula		
Inquire when Stanley last used his inhaler and nebulizer		
Call the provider to report symptoms		
Encourage Stanley to walk across the room to assess if he has increased shortness of breath upon exertion		
Assess for signs of confusion and restlessness		
Review medication lists		
Observe self-administration of inhaler and nebulizer treatments		
Assess psychosocial support		
Inquire about immunizations		

Putting It All Together

DEBRIEF

An initial pulmonary assessment should begin with a detailed history of chronic respiratory conditions, acute respiratory illnesses, hospitalizations, cardiovascular health, and immunization history. The nurse should assess for respiratory cues such as rate, rhythm, audible wheezing, dyspnea, pulse, pulse ox, and blood pressure. The nurse should observe for abnormalities in the shape of the client's chest, posture, and signs of hypoxia, confusion, or restlessness. The nurse should perform a physical examination with auscultation and percussion of lung and heart sounds.

A holistic assessment includes an evaluation of the client's medications list, self-management of symptoms, ADLs, medication and treatment administration, and the client's psychosocial support system.

Home health nurses have autonomy in practice and would not be required to report symptoms unless they were concerned about a change and requests consultation. The nurse would not ask Stanley to walk across the room to assess if he has increased shortness of breath upon exertion.

Being familiar with resources in your community that can bridge the healthcare gap and inequities will decrease disparities for uninsured individuals. Community options to consider are community or free clinics, sliding fee clinics, shelter-based care, and veteran services.

What Do You Think About?

1. Describe how living in poverty contributes to health disparities.
2. Compare and contrast how living in poverty, residing in a rural community, and age influences health outcomes.
3. Identify health care sources in your local community who serve individuals that are uninsured.

Encourage clients to look into federal and state programs (Medicaid and Medicare). There are also specialty federal programs such as the National Breast and Cervical Cancer Early Detection Program, which provides screening and diagnostic services for women in every state, and children's health insurance programs. 211 is a local resource hub to get information and referrals on mental health resources and financial assistance programs to help pay for prescriptions and medical emergencies.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

A primary goal of home health care is to discharge the client to self or family care and avoid subsequent hospitalizations. This goal aligns with the SDOH domain, *Health Care Access and Quality,* by decreasing unplanned and recurrent admissions to the hospital. Unplanned admission to the hospital is an undesirable outcome of home health care that causes problems for clients, caregivers, providers, and payers. Unplanned hospital admissions are associated with complications, morbidity, patient and family stress, and increased costs (Ellenbecker et al., 2008).

The Centers for Disease Control and Prevention (CDC) (2022) reports that 12.2 percent of adults ages 18-64 were uninsured. In 2022, among adults aged 18–64, the percentage who were uninsured was highest among those with family incomes less than 100% Federal Poverty Level (FPL) (22.7%).

The nurse comes for their weekly visit with Stanley. Upon arrival, Stanley is sitting at the kitchen table, he is short of breath and appears tired. Stanley states, "I just took my albuterol. I get so short of breath when I come back from my truck."

Flemming, Stanley A.

Account: 694028

Age: 77 years Allergies: Penicillin	Weight: 152 lb Height: 69"	**TYPE OF VISIT:** ❑ SN ☒ Medicare ☒ Medicaid ❑ SN & Supervisory ❑ Supervisory only

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry
5/30/XX 0915	98.9°F	92	150/86	25	86% (3 L NC)
6/06/XX 0950	98.6°F	80	142/80	20	88% (3 L NC)

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/30/XX 0930	**Nursing Note:** While reviewing client's medications and treatment with him, he states he uses a portable oxygen concentrator in his apartment and when he ambulates outside of his apartment. He takes the portable oxygen concentrator when he goes to his truck to smoke in the parking lot because the apartment management does not allow smoking in the building. Client states he uses his albuterol inhaler 3-4 times daily and his nebulizer four times daily. Client admits to smoking 12 cigarettes per day, which is better than the 15 he used to smoke prior to his last hospitalization. States he is proud of his accomplishments.
6/06/XX 0935	**Nursing Note:** After applying oxygen via nasal cannula, using his albuterol and nebulizer, vital signs were obtained. BP 142/80 mmHg, T 98.6 F (37 C.), P 80 beats/minute, RR 20 breaths/minute, Sp02 88%. Client appears less anxious. Client states it is difficult for him to eat. He does not feel hungry and has noticed his clothes fit more loosely. Client states he does not sleep well in his bed at night because he feels restless when he lies down and often wakes with a headache and shortness of breath and has recently been sleeping better in the recliner chair. Client states "sometimes it is hard to breathe when I go for my walk." Client has smoked since he was 16 years old, quit for many years and started smoking again after the death of his brother 7 years ago...but, states he "enjoys smoking" because it "takes the edge off."

QUESTION: Highlight Text
Scoring Rule: +/-

After reviewing the intake information from the home health, highlight the findings that are most concerning in the nurses note.

"After applying oxygen via nasal cannula, using his albuterol and nebulizer, vital signs were obtained. BP 142/80 mmHg, T 98.6 F (37 C.), P 80 beats/minute, RR 20 breaths/minute, Sp02 88%. Client appears less anxious. Client states it is difficult for him to eat. He does not feel hungry and has noticed his clothes fit more loosely. Client states he does not sleep well in his bed at night because he feels restless when he lies down and often wakes with a headache and shortness of breath and has recently been sleeping better in the recliner chair. Client states "sometimes it is hard to breathe when I go for my walk." Client has smoked since he was 16 years old, quit for many years and started smoking again after the death of his brother 7 years ago...but, states he "enjoys smoking" because it "takes the edge off."

Putting It All Together

DEBRIEF

COPD is a progressive lung disease characterized by dyspnea, frequent coughing or wheezing, chest tightness, chronic cough (that may be productive), frequent respiratory infections, lack of energy, and weight loss. The nurse recognized that it is difficult for Stanley to eat and that he does not feel hungry. Eating small frequent meals may be more tolerable for Stanley. Nutritional supplements may also help with caloric intake. Monitoring Stanley's weight and observing trends will allow for earlier intervention of cachexia.

COPD morning headaches may be due to a buildup of carbon dioxide during sleep. The association between COPD and migraine or severe headaches may be because of headache-related sleep disturbances. Headaches related to COPD may be attributed to airway constriction. Therefore, a client with COPD experiencing morning headaches should be evaluated for sleep apnea (Minen et al., 2019).

Undernutrition is characterized by decreased body weight in clients with COPD and has been recognized as a poor prognostic factor (Rawal et al., 2015). Reduced food intake among COPD clients affects their muscle strength, which may potentially lead to worsened respiratory function and is also associated with low physical activity, which reduces skeletal muscle mass and bone tissue (Christensen et al., 2022). Undernutrition challenges the individual as well as the community, as it is associated with depression, reduced physical ability, longer hospitalizations and rehabilitation, reduced quality of life, poorer response to treatment, and increased mortality (Christensen et al., 2022).

What Do You Think About?

1. Describe the pathogenesis of COPD.
2. Differentiate COPD, bronchitis, emphysema, and asthma.
3. Compare and contrast undernutrition and malnutrition?
4. Identify sources in your local community for individuals who are food insecure.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Social and Community Context is a third SDOH domain addressed in this case study. The goal for this domain is to increase social and community support. For Stanley, social and community context includes access to adequate healthy food sources, sidewalks in good repair for safe ambulation, and cost-effective modes of public transportation. The SDOH domain, *Social and Community Context,* identify interventions to help people get the social and community support they need are critical for improving health and well-being.

Referrals to local community food resources such as food banks or food pantries, free meal options at shelter services, local churches, community education and outreach programs, farmers markets, and cooperative grocery stores are options. Additional resources include government programs such as WIC and SNAP. Keep in mind, access to public transportation to get to these resources contributes to limited access to healthy food and food insecurity.

The role of the home health nurse is to advocate for a safe environment that facilitates self-management and risk reduction. The nurse discusses self-management education programs and how they assist individuals with ongoing, chronic health conditions and how to live life fully. The nurse explains that CDC self-management education programs are clinically proven to reduce symptoms and improve quality of life. The nurse continues to discuss specific interventions with Stanley.

Flemming, Stanley A.

Account: 694028

Age: 77 years Allergies: Penicillin	Weight: 152 lb Height: 69”	**TYPE OF VISIT:** ❑ SN ☒ Medicare ☒ Medicaid ❑ SN & Supervisory ❑ Supervisory only

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

5/30/XX 0930	**Nursing Note:** While reviewing client’s medications and treatment with him, he states he uses a portable oxygen concentrator in his apartment and when he ambulates outside of his apartment. He takes the portable oxygen concentrator when he goes to his truck to smoke in the parking lot because the apartment management does not allow smoking in the building. Client states he uses his albuterol inhaler 3-4 times daily and his nebulizer four times daily. Client admits to smoking 12 cigarettes per day, which is better than his 15 he used to smoke prior to his last hospitalization. States he is proud of his accomplishments.
6/06/XX 0935	**Nursing Note:** After applying oxygen via nasal cannula, using his albuterol and nebulizer, vital signs were obtained. BP 142/80 mmHg, T 98.6 F (37 C.), P 80 beats/minute, RR 20 breaths/minute, Sp02 88%. Client appears less anxious. Client states it is difficult for him to eat. He does not feel hungry and has noticed his clothes fit more loosely. Client states he does not sleep well in his bed at night because he feels restless when he lies down and often wakes with a headache and shortness of breath and has recently been sleeping better in the recliner chair. Client states “sometimes it is hard to breathe when I go for my walk.” Client has smoked since he was 16 years old, quit for many years and started smoking again after the death of his brother 7 years ago...but, states he “enjoys smoking” because it “takes the edge off.”
6/13/XX 0900	**Nursing Note:** Discussed self-management educational programs at the local community center. Explained the program meets twice monthly and could aid in helping him in managing his COPD. Client expressed concerns about the transportation and cost of a self-program and states he understands what he needs to do to help his COPD. Discussed interventions he could do at home for self-management of his COPD.

QUESTION: Matrix Multiple Choice
Scoring Rule: 0/1

After reviewing the client's chart, what interventions would the nurse recommend to Stanley for the self-management of his COPD? Each row should include a single choice.

Intervention	Recommend	Not Recommend
Administering a dose of amitriptyline for anxiety		
Encouraging eating small, frequent meals		
Educate on how to take medications correctly		
Instruct how to use oxygen appropriately		
Taking sleeping medications for rest and sleep		
Sleeping in recliner chair to aid with restful nights		
Obtain weekly weight and assess trends		
Reduce exposure to pollens		
Continue efforts for smoking cessation		

Putting It All Together

DEBRIEF

The nurse recognized that it is difficult for Stanley to eat and that he does not feel hungry. Eating small frequent meals may be more tolerable for Stanley. Nutritional supplements may also help with caloric intake. Monitoring Stanley's weight and observing trends will allow for earlier intervention of cachexia. Reviewing the client's medications/treatments and assessing proper use and compliance is important. Having the client demonstrate how he prepares and administers his nebulizer and inhalers and determines how much oxygen is in the oxygen tank is an effective way to assess his knowledge and compliance.

Sleeping in a recliner optimizes client positioning to avoid pressure exerted by gravity when lying flat in a bed. An upright position helps to elevate the torso, expand the rib cage, and control coughing.

It is important for the nurse to assess triggers for COPD exacerbations. Common triggers include common allergens and pollens. Allergens and pollen can irritate the lungs and create more breathing problems. The nurse should also encourage smoking cessation support and referral.

What Do You Think About?

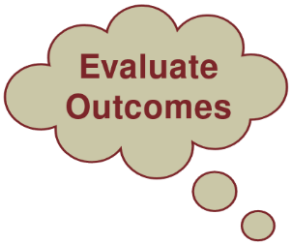
1. What other risk reduction interventions could the nurse suggest?
2. What SDOH could increase Stanley's risk for exacerbations?
3. Describe how chronic disease affects quality of life.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

A fourth SDOH domain addressed in this case study is *Economic Stability*. This domain aims to help people earn steady incomes that allow them to meet their health needs. *Economic Stability* is a concern for individuals with a disability who are unable to work. The Social Security Administration (SSA) considers COPD a disability if the client is unable to work. The SSA defines a disability as the inability to engage in substantial gainful activity. Substantial gainful activity is work that involves significant and productive duties and pays more than the current monthly income limits set by the SSA by reason of any physical or mental impairment(s) which has lasted or can be expected to last for a continuing period of 12 months or more or result in death (SSA, n.d.; Disability Benefits Help, 2023).

Chronic disease affects health and quality of life. It also is a significant driver of healthcare costs and has a related impact on business, such as absenteeism and presenteeism. Nearly 60% of adult Americans have at least one chronic disease. More than two-thirds of all deaths are caused by one or more of five chronic diseases: heart disease, cancer, stroke, chronic obstructive pulmonary disease, and diabetes (Hoffman, 2022). Further, approximately 40% of American adults have multiple chronic conditions, and evidence is growing that one chronic illness has a negative impact on the risk of developing others, particularly as people age. The nation's aging population, coupled with existing risk factors (e.g., tobacco use, poor nutrition, and lack of physical activity), suggests that these problems will continue to grow if they are not effectively addressed (Hoffman, 2022).

Before leaving the third visit, the nurse recognizes Stanley has lifelong habits that will require interventions to make changes to support a healthier lifestyle and decrease his hospital readmissions for COPD exacerbations. The nurse reflects on the physical assessment, community, and environmental assessment to identify community referrals to include in his home care plan.



QUESTION: Matrix Multiple Choice
Scoring Rule: 0/1

After reviewing the notes, conducting a physical assessment, and a community and environmental assessment, what community referrals would be appropriate to include in Stanley's home care plan? Each row should include a single choice.

Community Referral	Appropriate	Not Appropriate
Dietary consult		
Pulmonary rehabilitation		
Palliative care		
Wound management		
Smoking cessation		
Dental care		
Access to healthy food choices		
Physical therapy		
Meals on Wheels service		
Transportation options		
Sleep apnea evaluation		

Putting It All Together

DEBRIEF

COPD is a leading cause of death and hospitalization in the United States. It has become increasingly evident that short-term approaches focusing on medical care during the immediate post-discharge period do not fully address factors contributing to readmission (Kearney et al., 2022). Adverse SDOH, the social circumstances in which people are born, grow, live, work, and age, increases the risk of readmissions and hospitalizations for clients with COPD (Kearney et al., 2022).

The home health nurse plays a significant role in decreasing disparities, comorbidities, and hospitalizations due to COPD exacerbations. The home health nurse can teach and reinforce self-management skills to the client.

Self-management interventions help individuals with COPD acquire and practice the skills they need to carry out disease-specific medication regimens, guide changes in health behavior, and provide emotional support to enable them to control their disease (Schrijver et al., 2022). Access to care, safe places to ambulate, and dust generated from driving on dirt roads in rural communities will require the nurse to be creative in developing COPD self-management strategies for Stanley.

What Do You Think About?

1. Identify ways the nurse can tailor COPD self-management interventions to individual clients.
2. Compare how COPD self-management interventions might differ in rural versus urban locations?
3. Discuss how telemedicine interventions can be utilized in COPD self-management for rural populations?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Kearny et al. (2022) conducted a study to inform and evaluate nurse practitioner/community health worker (NP/CHW) interventions to address SDOH and COPD self-management to reduce disparities, improve quality care, and reduce hospitalizations. Kearney et al. (2022) identified that clients with Medicaid insurance, mental health disorders, cardiac disease, and substance use disorder had increased odds of having two or more admissions and that 74% of individuals with COPD were admitted to the hospital two or more times per year have unmet SDOH needs.

COPD severity, comorbidities, and unmet SDOH needs made COPD self-management challenging. Clients perceived that the NP/CHW intervention addressed these barriers by connecting them to resources and providing emotional support. Some factors impacting COPD self-management included social isolation, anxiety, depression, smoking, substance abuse, comorbidities, housing and food insecurity, lack of transportation to medical appointments, education needs, unemployment, difficulty paying for medications or utilities, caregiver issues, and a limited understanding of COPD (Kearney et al., 2022). Telehealth is a viable way to extend healthcare services to rural communities. Telehealth reduces barriers to care to help bridge the health disparities gap between urban and rural communities.

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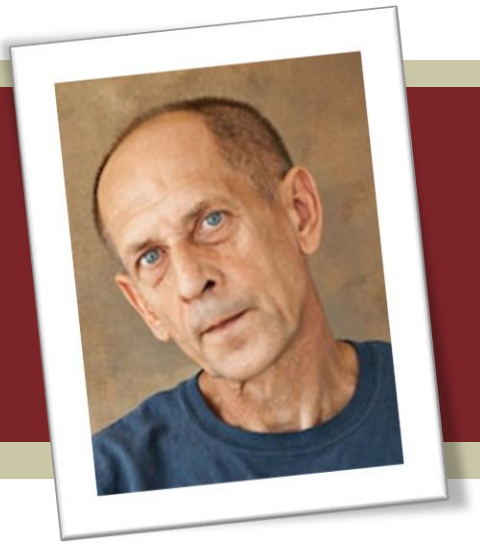


CASE STUDY: Rhys

CONCEPTS

- Palliation/End of Life
- Pain/Comfort
- Grief and Loss

EXEMPLAR

- Pancreatic Cancer

SPHERE OF CARE

- Hospice/Palliative Care

SDOH DOMAIN

- Health Care Access & Quality
- Social & Community Context

STUDENT LEARNING OUTCOMES

1. Appraise the progression of symptoms experienced during the end-of-life transition.
2. Identify five interdisciplinary interventions that can be utilized to reduce pain during end-of-life care.
3. Describe why cultural aptitude is imperative when caring for a client and their family during end-of-life.
4. Compare and contrast pharmacologic and nonpharmacologic interventions for end-of-life symptoms.

SCENARIO SUMMARY

A 51-year-old male, diagnosed with Stage IV pancreatic ductal adenocarcinoma 11 months ago. The pancreatic lesion metastasized to his liver, colon, omentum, bladder, and bilateral kidneys. Client's condition has rapidly declined over the past 6-8 weeks.

NURSING ROLE

Hospice Nurse

Rhys Anderson is a 51-year-old male who was diagnosed with Stage IV pancreatic ductal adenocarcinoma 11 months ago. Rhys's condition has rapidly declined over the past 6-8 weeks. The hospice nurse is conducting an initial visit for Rhys in his home. The nurse reviews the client's history, medications, and vital signs.

Anderson, Rhys J.

Account: 888374

Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

3/06/XX 0930	**MEDICAL HISTORY** Stage IV pancreatic ductal adenocarcinoma diagnosed 11 months ago. Metastasized to liver, colon, omentum, bladder, and bilateral kidneys. Bilateral nephrostomy tubes placed. Has completed multiple rounds of chemotherapy with minimal change in the primary pancreatic lesion and growth in secondary lesions. Therapy discontinued by oncologist due to the limited response despite the numerous chemo treatments and revised regimes. **SURGICAL HISTORY** ▪ Bilateral nephrostomy tube placement ▪ Spinal fusion 6 years ago for pain management resulting from a motorcycle accident injury **SOCIAL HISTORY** Client lives at home with his wife, Michelle, and their 17-year-old daughter, Liz. Rhys worked full-time as a janitor at an elementary school, however, has been unemployed since beginning chemotherapy. Recently began receiving hospice care. The family has a hospital bed set up in their living room.

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

3/06/XX 0930	**Nursing Intake Note:** Client diagnosed with Stage IV pancreatic ductal adenocarcinoma 11 months ago with metastasis to the liver, colon, omentum, bladder, and bilateral kidneys. Due to extensive bladder involvement, client has bilateral nephrostomy tubes and has seen a rapid decline over the past 6-8 weeks. Client completed multiple rounds of chemotherapy with minimal change to the primary pancreatic lesion and growth in secondary lesions. Client informed by oncologist they were discontinuing care due to the limited response despite the numerous chemotherapy treatments and revised regimes. Since discontinuing chemotherapy, client has experienced significant abdominal and back pain. Prior to diagnosis, client was 6 foot 1 inches tall and weighed 335 pounds. Since his diagnosis, client has experienced anorexia and cachexia and now weighs 165 pounds. He complains of fatigue, lethargy, and increased pain. Noted icterus in client's sclerae, mucous membrane, and skin. Client has been taking medications for depression and anxiety since his diagnosis.

Anderson, Rhys J.

Account: 888374

Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Respirations	Blood Pressure	Pain
3/06 1000	98.6°F	70	12	120/78	7/10

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

MEDICATION ADMINISTRATION RECORD

Date of Order	Medication	Dosage	Route	Frequency	Last Date of Administration	Last Time of Administration
3/06	Dexamethasone	4 mg	PO	BID	3/06	1000
3/06	Lorazepam *For restlessness*	0.5 mg	PO	PRN BID	---	---
3/06	Morphine Sulfate *For pain*	5 mg	PO	q4hr	3/06	1005
3/06	Morphine Sulfate *For pain*	5 mg	PO	PRN q1hr	3/06	1145
3/06	Fentanyl	12.5 mcg/hr	Transdermal	Change every 3 days	3/06	1015
3/06	Senna Plus	8.6mg/50mg	PO	PRN Daily	3/06	1000
3/06	Bisacodyl	10mg	Suppository	PRN Daily	---	---
3/06	Hyoscyamine *For secretions*	0.125 mg	Sublingual	PRN q4hr	---	---
3/06	Acetaminophen *For fever*	650 mg	Suppository	PRN q4hr	---	---

QUESTION: Matrix Multiple Choice
Scoring Rule: 0/1

What symptoms are associated with pancreatic cancer?

Each row should include a single choice.

Symptom	Associated	Not Associated
Nausea		
Confusion		
Bloating		
Fatigue		
Edema		
Icterus (Jaundice)		
Sudden onset of diabetes		
Light colored stools		
Dark colored urine		

Putting It All Together

DEBRIEF

Pancreatic cancer affects your pancreas, a gland in your abdomen that aids in digestion. Early stages of pancreatic cancer often have no symptoms; however, if symptoms are present, they can include nausea, bloating, fatigue, jaundice, lack of appetite, stomach pain, back pain, sudden onset of diabetes, light-colored stool, and dark-colored urine.

Pancreatic cancer survival rates are low because the disease is difficult to detect in the early stages (Cleveland Clinic, 2023). The most common type of pancreatic cancer is ductal adenocarcinoma, which begins in the cells that line your organs. Pancreatic ductal adenocarcinoma is poised to become the second leading cause of cancer-related death by 2030, and the median overall survival for clients with advanced, metastatic disease remains only about 12 months (Pishvaian et al., 2020). Treatment for pancreatic cancer includes surgery, chemotherapy, and radiation therapy.

Early stages of pancreatic cancer often do not have symptoms. Jaundice or icterus is one of the first symptoms of pancreatic cancer. Jaundice generally manifests first in the sclerae and/or mucous membranes and skin.

What Do You Think About?

1. What part of the body frequently develops jaundice first?
2. Describe and differentiate how the nurse assesses the sclerae, mucous membranes, and skin for jaundice?
3. How does assessment for jaundice differ in a client with darker skin tone compared to a client with a lighter skin tone?
4. What chemical compound causes jaundice?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

This case study focuses on an individual with Stage IV pancreatic cancer and addresses two of the five SDOH domains: *Health Care Access and Quality* and *Social and Community Context*. The goal for the SDOH domain, *Health Care Access and Quality*, is to increase access to comprehensive, high-quality healthcare services (Healthy People, 2030).

Rhys's therapy was discontinued by his oncologist due to the limited response from numerous treatment approaches. Despite discontinuing his cancer treatments, Rhys receives comprehensive, quality end-of-life care from the home health/hospice care team. *Health Care Access and Quality* also includes involving clients in healthcare decisions as much as the client desires (HC/HIT-03).

The hospice nurse visits Rhys, his wife, and his family. Rhys is experiencing severe, intractable abdominal and back pain. Rhys, with his family's support, has declined disease-directed therapy and is requesting only comfort care measures. Over the past month, Rhys has had a decrease in his physiologic function, as demonstrated by a decrease in the Palliative Performance Scale (PPSv2). Rhys is now bed-bound and requires total assistance with his self-care. He has reduced oral intake and episodic confusion.

Anderson, Rhys J.

Account: 888374

Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

3/06/XX 0930	**Nursing Intake Note:** Client diagnosed with Stage IV pancreatic ductal adenocarcinoma 11 months ago with metastasis to the liver, colon, omentum, bladder, and bilateral kidneys. Due to extensive bladder involvement, client has bilateral nephrostomy tubes and has seen a rapid decline over the past 6-8 weeks. Client completed multiple rounds of chemotherapy with minimal change to the primary pancreatic lesion and growth in secondary lesions. Client informed by oncologist they were discontinuing care due to the limited response despite the numerous chemotherapy treatments and revised regimes. Since discontinuing chemotherapy, client has experienced significant abdominal and back pain. Prior to diagnosis, client was 6 foot 1 inches tall and weighed 335 pounds. Since his diagnosis, client has experienced anorexia and cachexia and now weighs 165 pounds. He complains of fatigue, lethargy, and increased pain. Noted icterus in client's sclerae, mucous membrane, and skin. Client has been taking medications for depression and anxiety since his diagnosis.
3/09/XX 1115	**Nursing Note:** Client experiencing severe, intractable abdominal and back pain. Verbal and non-verbal pain cues exhibited. Client is bed-bound and requires total assistance with self-care, has reduced oral intake, and episodic confusion. Will encourage repositioning client every 2 hours and position feet on pillow or hanging heels. Obtained new pain orders, will review comfort care medications with family as outlined in the client's updated medication list.

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Respirations	Blood Pressure	Pain
3/06 1000	98.6°F	70	12	120/78	7/10
3/09 1135	100.2°F	80	16	106/70	10/10

Anderson, Rhys J.

Account: 888374

Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

MEDICATION ADMINISTRATION RECORD

Date of Order	Medication	Dosage	Route	Frequency	Last Date of Administration	Last Time of Administration
3/06	Dexamethasone	4 mg	PO	BID	3/09	0730
3/06	Lorazepam *For restlessness*	0.5 mg	PO	PRN BID	---	---
~~3/06~~	~~Morphine Sulfate~~ ~~*For pain*~~	~~5 mg~~	~~PO~~	~~q4hr~~	~~3/08~~	~~0730~~
3/09	Morphine Sulfate *For pain*	10 mg	PO	q4hr	3/09	1140
3/06	~~Morphine Sulfate~~ ~~*For pain*~~	~~5 mg~~	~~PO~~	~~PRN q1hr~~	~~---~~	~~---~~
3/09	Morphine Sulfate *For pain*	10 mg	PO	PRN q1hr	**3/09**	1255
~~3/06~~	~~Fentanyl~~	~~12.5 mcg/hr~~	~~Transdermal~~	~~Change q3 days~~	~~3/06~~	~~0945~~
3/09	Fentanyl	25 mcg/hr	Transdermal	Change q2 days	3/09	1145
3/06	Senna Plus	8.6mg/50mg	PO	PRN Daily	3/09	0730
3/06	Bisacodyl	10mg	Suppository	PRN Daily	---	---
3/06	Hyoscyamine *For secretions*	0.125 mg	Sublingual	PRN q4hr	---	---
3/06	Acetaminophen *For fever*	650 mg	Suppository	PRN q4hr	3/09	1150

QUESTION: Matrix Multiple Choice
Scoring Rule: 0/1

Hospice care includes an interdisciplinary team to provide supportive care services. The nurse recognizes Rhys requires additional comfort interventions.

What interventions can be implemented to assist in reducing Rhys's current pain? Each row should include a single choice.

Intervention	Appropriate	Not Appropriate
Morphine		
Music Therapy		
Lorazepam		
Range of Motion		
Aroma Therapy		
Spiritual Care		
Fentanyl Patch		
Massage		

Putting It All Together

DEBRIEF

The first step in managing pain is to conduct a pain assessment. Pain assessment includes the client ranking their pain on a scale of 1-10. One being little or no pain and 10 being the most severe pain they have ever experienced. In addition to a subjective report from the client, the nurse should observe for non-verbal pain cues such as guarding, jaw tightening, clenching fists, change in breathing pattern, grimacing, or pursed lips.

Comfort care measures include medication by any route, positioning, oxygen, suction, and manual treatment of airway obstruction as needed for comfort, wound care, pain assessment, or other measures to relieve pain and suffering. Interdisciplinary approaches to reducing pain include music therapy, aroma therapy, massage therapy, and spiritual care.

Pharmacological options for pain control may include Morphine and Fentanyl patches. Holistic nonpharmacological options for pain management include music therapy, aromatherapy, massage, and spiritual care. Lorazepam is indicated for anxiety and does not directly reduce pain; however, Lorazepam may influence the experience of pain by decreasing anxiety. Rhys is experiencing severe, intractable abdominal and back pain; therefore, passive range of motion is not an appropriate intervention at this time.

What Do You Think About?

1. What are some additional nonpharmacological measures for managing pain to avoid pain triggers that could be used with Rhys?
2. Compare and contrast the benefits and disadvantages of oral morphine and the fentanyl patch for pain management. Consider the pharmacokinetics and pharmacodynamics of each.
3. What other services can be part of the collaborative care team?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Managing pain for a client receiving palliative or hospice care can be challenging. Providing quality care requires effective pain assessment and implementing culturally congruent measures to manage the client's pain. When nurses consider the client's cultural pain expression, values, beliefs, and experiences, they improve the quality of care and are also better able to help the family adjust to the dying process (Gilver et al., 2023). The SDOH domain, *Health Care Access and Quality,* incorporates access to resources, knowledge of existing resources, provider bias and reluctance to refer, understanding/misunderstanding of services, and service eligibility criteria (Gilver et al., 2023).

Rhys's wife calls to request the hospice nurse come to the house stating, "Something seems different with Rhys." The nurse asks Michelle to describe what seems different. Michelle states, "he seems to be having a lot of pain, he is moaning but not responding to me, I am worried."

When the nurse arrives, Rhys is lying in his hospital bed in the living room with his wife and daughter Liz, by his side. The nurse recognizes there is a change in condition, documents findings, and discusses the transition and comfort care with the family.

Anderson, Rhys J.

Account: 888374

Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

3/09/XX 1115	**Nursing Note:** Client experiencing severe, intractable abdominal and back pain. Verbal and non-verbal pain cues exhibited. Client is bed-bound and requires total assistance with self-care, has reduced oral intake, and episodic confusion. Will encourage repositioning client every 2 hours and position feet on pillow or hanging heels. Obtained new pain orders, will review comfort care medications with family as outlined in the client's updated medication list.
3/16/XX 0935	**Nursing Note:** Client diaphoretic, flushed, and skin is mottled. Client is semi-responsive to verbal and tactile stimuli, appears anxious, and has unmanaged pain as demonstrated by nonverbal cues. Vital signs obtained and documented. Medications administered.

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Respirations	Blood Pressure	Pulse Oximetry	Pain
3/06 1000	98.6°F	70	12	120/78		7/10
3/09 1135	100.2°F	80	16	106/70		10/10
3/16 0950	100.8°F	84-102 (irregular)	18	100/56	88%	Moaning

Anderson, Rhys J.

Account: 888374

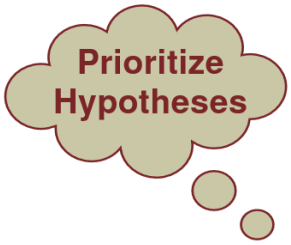
Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

MEDICATION ADMINISTRATION RECORD

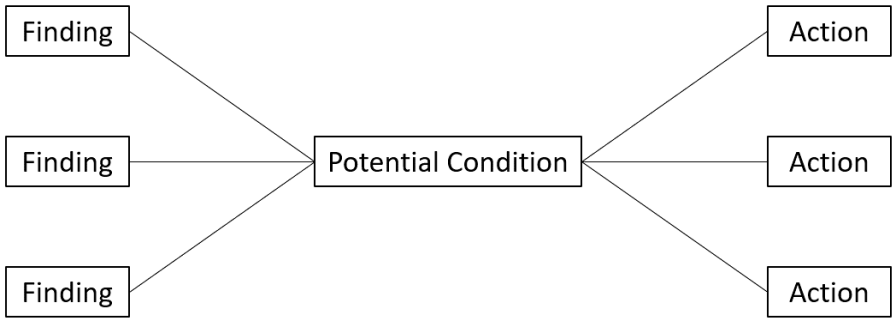
Date of Order	Medication	Dosage	Route	Frequency	Last Date of Administration	Last Time of Administration
3/06	Dexamethasone	4 mg	PO	BID	3/15	0730
3/06	Lorazepam *For restlessness*	0.5 mg	PO	PRN BID	3/16	1000
~~3/06~~	~~Morphine Sulfate~~ ~~*For pain*~~	~~5 mg~~	~~PO~~	~~q4hr~~	~~3/08~~	~~0730~~
3/09	Morphine Sulfate *For pain*	10 mg	PO	q4hr	3/16	1000
~~3/06~~	~~Morphine Sulfate~~ ~~*For pain*~~	~~5 mg~~	~~PO~~	~~PRN q1hr~~	~~---~~	~~---~~
3/09	Morphine Sulfate *For pain*	10 mg	PO	PRN q1hr	3/16	1130
~~3/06~~	~~Fentanyl~~	~~12.5 mcg/hr~~	~~Transdermal~~	~~Change q3 days~~	~~3/07~~	~~0945~~
3/09	Fentanyl	25 mcg/hr	Transdermal	Change q2 days	3/15	1015
3/06	Senna Plus	8.6mg/50mg	PO	PRN Daily	3/16	0730
3/06	Bisacodyl	10mg	Suppository	PRN Daily	---	---
3/06	Hyoscyamine *For secretions*	0.125 mg	Sublingual	PRN q4hr	---	---
3/06	Acetaminophen *For fever*	650 mg	Suppository	PRN q4hr	3/16	1020



QUESTION: Bow-tie

Scoring Rule: 0/1

Identify the condition for Rhys, select three findings, and the three appropriate actions for the nurse.



Finding	Condition	Action
Altered level of consciousness	Infection	Provide emotional support for family
Anxiousness	Poor Pain Management	Administer morphine
Diaphoretic	Transitioning to end-of-life	Suction secretions
Mottled Skin		Apply cool compresses to neck and forehead
Unmanaged Pain		Raise head of bed

Putting It All Together

DEBRIEF

Rhys is transitioning to end-of-life, evident by his altered level of consciousness, diaphoresis, flushed, and mottled skin. Another symptom suggesting end-of-life is a shift in temperature. During the transition through end-of-life, the nurse's primary responsibility is to assess and manage the client's symptoms to optimize comfort. The nurse also provides support, guidance, education, and coordinated care referrals for the family and loved ones. The nurse can encourage the family to participate in providing cares, being actively engaged in care can promote a sense of control and can decrease the sense of helplessness for the family. Communicating with the family about what they can expect may decrease anxiety associated with the unknown trajectory of the end-of-life experience for their loved one.

A therapeutic relationship allows the nurse to apply professional knowledge, skills, abilities, and experiences toward meeting the client's health needs. This relationship is dynamic, goal-oriented, and client - and family-centered because it is designed to meet the needs of the client and family. Regardless of the context or length of interaction, the therapeutic nurse–patient relationship protects the client's (and family's) dignity, autonomy, and privacy and allows for the development of trust and respect (National Council State Board of Nursing, 2018).

What Do You Think About?

1. What are additional actions the nurse can take to encourage participation in care?
2. How can the nurse foster a therapeutic relationship with the family during this time of vulnerability?
3. What are statements and /or observations occurring with Rhys could the nurse address to educate or support Rhys's family regarding end-of-life transition?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

The second SDOH domain addressed in this case study is *Social and Community Context.* The goal of this domain is to increase social and community support. Healthy People 2030 reinforces that a client's relationships and interactions with family, friends, co-workers, and community members can have a major impact on their health and well-being. Therapeutic communication is an essential component in improving health, health outcomes, and well-being. Two Healthy People 2030 objectives in the *Social and Community Context domain* are to increase the proportion of adults who talk to friends and family about their health (HC/HIT-04) and increase health literacy (HC/HIT-R01).

The hospice nurse returns to Rhys' house the next morning and recognizes Rhys is transitioning. The nurse talks with the family about comfort care measures for Rhys during this time.

Anderson, Rhys J.

Account: 888374

Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

3/09/XX 1115	**Nursing Note:** Client experiencing severe, intractable abdominal and back pain. Verbal and non-verbal pain cues exhibited. Client is bed-bound and requires total assistance with self-care, has reduced oral intake, and episodic confusion. Will encourage repositioning client every 2 hours and position feet on pillow or hanging heels. Obtained new pain orders, will review comfort care medications with family as outlined in the client's updated medication list.
3/16/XX 0935	**Nursing Note:** Client diaphoretic, flushed and skin is mottled. Client is semi-responsive to verbal and tactile stimuli, appears anxious, and has unmanaged pain as demonstrated by nonverbal cues. Vital signs obtained and documented.
3/17/XX 0845	**Nursing Note:** Client is exhibiting distressed behavior, moaning, and grabbing at the sheets. Does not respond to verbal or tactile stimuli. Heavy oral secretions with audible terminal respiratory congestion. 30mL urine drained from nephrostomy tubes in the past 10 hours.

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Respirations	Blood Pressure	Pulse Oxygen	Pain
3/06 1000	98.6°F	70	12	120/78		7/10
3/09 1135	100.2°F	80	16	106/70		10/10
3/16 0950	100.8°F	84-102 (irregular)	18	100/56	88%	10/10
3/17 0855	101.6°F	106-118 (irregular)	24	90/50	80%	Moaning

Anderson, Rhys J.

Account: 888374

Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

MEDICATION ADMINISTRATION RECORD

Date of Order	Medication	Dosage	Route	Frequency	Last Date of Administration	Last Time of Administration
3/06	Dexamethasone	4 mg	PO	BID	3/16	0730
3/06	Lorazepam *For restlessness*	0.5 mg	PO	PRN BID	3/17	0850
~~3/06~~	~~Morphine Sulfate~~ ~~*For pain*~~	~~5 mg~~	~~PO~~	~~q4hr~~	~~3/08~~	~~0730~~
3/09	Morphine Sulfate *For pain*	10 mg	PO	q4hr	3/17	0850
~~3/06~~	~~Morphine Sulfate~~ ~~*For pain*~~	~~5 mg~~	~~PO~~	~~PRN q1hr~~	~~---~~	~~---~~
3/09	Morphine Sulfate *For pain*	10 mg	PO	PRN q1hr	3/17	1020
~~3/06~~	~~Fentanyl~~	~~12.5 mcg/hr~~	~~Transdermal~~	~~Change q3 days~~	~~3/07~~	~~0945~~
~~3/09~~	~~Fentanyl~~	~~25 mcg/hr~~	~~Transdermal~~	~~Change q2 days~~	~~3/15~~	~~1145~~
3/17	Fentanyl	50 mcg/hr	Transdermal	Change q2 day	3/17	0930
3/06	Senna Plus	8.6mg/50mg	PO	PRN Daily	3/16	0730
3/06	Bisacodyl	10mg	Suppository	PRN Daily	---	---
3/06	Hyoscyamine *For secretions*	0.125 mg	Sublingual	PRN q4hr	3/17	0850
3/06	Acetaminophen *For fever*	650 mg	Suppository	PRN q4hr	3/17	0855

QUESTION: Drop-Down Cloze

Scoring Rule: 0/1

The nurse identifies changes in Rhys condition. Complete the sentence below by selecting word choices from the box provided.

Rhys is exhibiting signs of [Select word choice] and [Select word choice]. The nurse should assess [Select word choice], [Select word choice], and [Select word choice].

Word Choices
Terminal restlessness
Moaning sounds
Urinary output
Pain
Anxiety
Comfort care measures
Respiratory rate

Putting It All Together

DEBRIEF

The nurse should discuss comfort care methods with the family. The family may choose to assist in providing care for Rhys. Comfort care actions are dependent on the symptoms Rhys is experiencing. For example, if he is febrile, comfort care includes removing blankets, applying cold compresses, or using a fan to decrease his core body temperature.

If Rhys is demonstrating signs of pain or difficulty breathing, positioning from side to side can help to drain oral secretions and provide comfort. Hyoscyamine may be administered to decrease saliva production. The nurse should reposition the client on their side. Elevating the head of the bed can help keep the client comfortable and aid in performing mouth care. Assess pain management before changing position and observe for nonverbal signs of pain when positioning and providing care. The nurse should encourage the family to communicate if they sense Rhys may need medication to help alleviate pain or anxiety.

Generally, it is important to talk to the client while providing cares. Hearing is widely thought to be the last sense to go during the process of active death. Many people become unresponsive during the final hours of life; however, EEG data revealed that the dying brain responds to sounds throughout the final moments of life (University of British Columbia, 2020).

What Do You Think About?

1. What is terminal restlessness?
2. What are five comfort care measures that can be employed for Rhys during his end-of-life transition?
3. In addition to comfort care measures for Rhys, what are other considerations should the nurse be cognizant of during the end-of-life transition?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Addressing SDOH encompasses a holistic assessment of the client and their family. The AACN Essentials (2011) recognize the nurses' role beyond the acute care setting. This case study addresses hospice/palliative/supportive care. This sphere of care includes end-of-life care and palliative and supportive care for individuals requiring extended care, those with complex, chronic disease states, or those requiring rehabilitative care. This holistic approach incorporates the domain of person-centered care, which focuses on the individual within multiple complicated contexts, including family and/or important others. Person-centered care is holistic, individualized, just, respectful, compassionate, coordinated, evidence-based, and developmentally appropriate. Person-centered care builds on a scientific body of knowledge that guides nursing practice regardless of specialty or functional area. Care provisions focusing on person-centered care can improve health outcomes by recognizing the SDOH that adversely affects health outcomes.

Six hours later, Rhys is completely unresponsive. He demonstrates Cheyne-Stokes respirations in a crescendo-diminuendo pattern with periods of apnea. He is hypotensive with tachypnea and tachycardia. He has been anuric for six hours.

Anderson, Rhys J.

Account: 888374

Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

3/09/XX 1115	**Nursing Note:** Client experiencing severe, intractable abdominal and back pain. Verbal and non-verbal pain cues exhibited. Client is bed-bound and requires total assistance with self-care, has reduced oral intake, and episodic confusion. Will encourage repositioning client every 2 hours and position feet on pillow or hanging heels. Obtained new pain orders, will review comfort care medications with family as outlined in the client's updated medication list.
3/16/XX 0935	**Nursing Note:** Client diaphoretic, flushed and skin is mottled. Client is semi-responsive to verbal and tactile stimuli, appears anxious, and has unmanaged pain as demonstrated by nonverbal cues. Vital signs obtained and documented.
3/17/XX 0845	**Nursing Note:** Client is exhibiting distressed behavior, is moaning, and grabbing at the sheets. Does not respond to verbal or tactile stimuli. 30mL urine drained from nephrostomy tubes in the past 10 hours.
3/17/XX 1450	**Nursing Note:** Rhys is completely unresponsive with Cheyne-Stokes respirations in a crescendo-diminuendo pattern with periods of apnea lasting up to 60 seconds. Heavy oral secretions with audible terminal respiratory congestion. He is hypotensive with tachypnea and tachycardia, Sp02 79%, T 101.3 (38.5 C). He has been anuric for six hours.

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Respirations	Blood Pressure	Pulse Oxygen	Pain
3/06 1000	98.6°F	70	12	120/78		7/10
3/09 1135	100.2°F	80	16	106/70		10/10
3/16 0950	100.8°F	84-102 (irregular)	18	100/56	88%	10/10

3/17 0855	101.6°F	106-118 (irregular)	24	90/50	80%	Moaning
3/17 1455	101.3°F	120 (irregular)	0-30	70/40	79%	Unresponsive

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

MEDICATION ADMINISTRATION RECORD

Date of Order	Medication	Dosage	Route	Frequency	Last Date of Administration	Last Time of Administration
3/06	Dexamethasone	4 mg	PO	BID	3/16	0730
3/06	Lorazepam *For restlessness*	0.5 mg	PO	PRN BID	3/17	0850
3/17	Lorazepam *For restlessness*	0.5 mg	PO	PRN q4hr	3/17	1135
~~3/06~~	~~Morphine Sulfate~~ ~~*For pain*~~	~~5 mg~~	~~PO~~	~~q4hr~~	~~3/08~~	~~0730~~
3/09	Morphine Sulfate *For pain*	10 mg	PO	q4hr	3/17	0850
~~3/06~~	~~Morphine Sulfate~~ ~~*For pain*~~	~~5 mg~~	~~PO~~	~~PRN q1hr~~	~~---~~	~~---~~
3/09	Morphine Sulfate *For pain*	10 mg	PO	PRN q1hr	3/17	1020
~~3/06~~	~~Fentanyl~~	~~12.5 mcg/hr~~	~~Transdermal~~	~~Change q3 days~~	~~3/07~~	~~0945~~
~~3/09~~	~~Fentanyl~~	~~25 mcg/hr~~	~~Transdermal~~	~~Change q2 days~~	~~3/15~~	~~1145~~
3/17	Fentanyl	50 mcg/hr	Transdermal	Change q2 day	3/17	1030
3/06	Senna Plus	8.6mg/50mg	PO	PRN Daily	3/16	0730
3/06	Bisacodyl	10mg	Suppository	PRN Daily	---	---
3/06	Hyoscyamine *For secretions*	0.125 mg	Sublingual	PRN q4hr	3/17	0900
3/06	Acetaminophen *For fever*	650 mg	Suppository	PRN q4hr	3/17	0855

QUESTION: Matrix Multiple Choice
Scoring Rule: 0/1

The nurse has reviewed the medical record to determine what actions are appropriate for Rhys at this time. Indicate on the table below what nursing actions would be appropriate or not appropriate for Rhys at this time. Each row must have a selection.

Nursing Actions	Appropriate	Not Appropriate
Administer Morphine 10 mg orally		
Administer Acetaminophen 650 mg rectal suppository		
Inform family of transition		
Suction secretions		
Allow family time alone with client		
Create comforting environment low stimuli		
Offer culturally appropriate spiritual support		

Putting It All Together

DEBRIEF

Breathing patterns often change from a normal rate and rhythm to a new pattern, including periods of apnea and Cheyne-Stokes breathing. Cheyne-Stokes breathing is indicative of impending death, generally minutes to hours (National Institute on Aging, 2022). Because death is imminent for Rhys, comfort care should not include medications such as morphine or acetaminophen. When clients are in their final hours and minutes of life, humanistic care is imperative when considering medication administration. Nursing actions should focus on the transition and supporting the family by creating a comforting, low stimuli environment, offering culturally appropriate end-of-life support, and providing time alone with the client. Suctioning the person during transition is not recommended. The irritation from the plastic tube can cause more secretions to be produced.

During end-of-life, it is important for the nurse to engage and maintain a therapeutic relationship with the family and communicate the signs and symptoms during the end-of-life transition.

Care for the family may need support and coaching as death approaches. Care continues through the death pronouncement, family notification of the death, and bereavement support (Harman et al., 2023). Many hospice programs offer bereavement services for families 12 months following the death of their loved one.

What Do You Think About?

1. What other signs or symptoms are common with end-of-life transition?
2. What nursing actions could be considered?
3. How will medication administration be altered in the final hours of life?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

End-of-life care is complex and incorporates lessening untoward physical symptoms as well as providing emotional, spiritual, and social support. The perspective of what is valued will vary depending on the client and family's culture, race/ethnicity, socioeconomic status, geographic location (urban/rural), insurance coverage, health literacy, and social support. Some cultures view death of a loved one as part of the natural cycle of life (Purnell, 2019, p. 116); in other cultures, death is perceived as a time of crisis (Purnell, 2019, p. 268).

ADDITIONAL CONSIDERATIONS

Sign/Symptom	Nursing Actions
Change in Breathing	Reassure family a change in breathing pattern is common and indicates decrease circulation. **Non-pharmacologic Interventions:** Elevate head of bed or turn client on their side. **Pharmacologic Intervention:** Morphine can help with breathing and respiratory congestion by decreasing fluid in the lungs and altering how the brain responds to pain.
Respiratory Congestion	Reassure family respiratory congestion is not uncommon and does indicate pain. **Non-pharmacologic Interventions:** Gently turn client head to the side to drain secretions. Wipe their mouth with a cool cloth. **Pharmacologic Intervention:** Morphine can help with breathing and respiratory congestion by decreasing fluid in the lungs and altering how the brain responds to pain.
Fever	Reassure the family that a fever is not uncommon with end-of-life transition. **Non-pharmacologic Interventions:** Apply a cool moist compress to forehead or neck, cooling blankets or sponging. Focus on core temp, not peripheral temps due to impaired perfusion. **Pharmacologic Intervention:** Assess need for analgesic or NSAID.
Sleeping or Unresponsiveness	Reassure the family that increased amount of time sleeping is common. The client may become unresponsive, uncommunicative, or difficult to arouse are not uncommon responses. **Non-pharmacologic Interventions:** Comfort client by holding their hand, being present, speak in a normal voice.
Changes in color and temperature of hands and feet	Reassure family that changes in the color and temperature is not uncommon. The skin may become grey, pallor, purple, mottled, and cool to touch. Changes in color and temperature of hands are due to impaired perfusion. **Non-pharmacologic Interventions:** Keep client warm and comfortable with soft blankets floating heals in bed or on pillow.
Restlessness	Reassure the family that restlessness is not uncommon during the end-of-life transition. Restlessness is in part due to decreased oxygen and impaired circulation. **Non-pharmacologic Interventions:** Avoid restraining the client or interfering with the movements. Soft natural light, speaking in a calming voice, light massage to forehead, or soothing music are examples of therapeutic interventions for restlessness. **Pharmacologic Intervention:** Lorazepam can help the client to relax if they are experiencing apprehension, agitation, and/or restlessness.
Confusion	Reassure the family that confusion is not uncommon during the end-of-life transition. Do not correct the client. These can present of delusion, or hallucinations symbolic language or actions. **Non-pharmacologic Interventions:** identify yourself before you speak, explain actions before you implement the plan, speak normally and clearly.

(Adapted from Crossroads Hospice, 2023)

Rhys's respirations are shallow, with four breaths per minute. He has a notable change in color; his skin appears pallor, dusky, and grey. The nurse discusses with the family that Rhys's death is imminent.

Anderson, Rhys J.

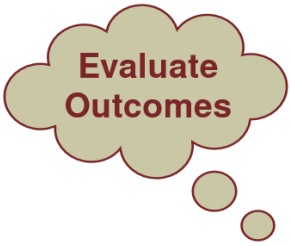
Account: 888374

Sex: Male	Age: 51 years	Allergies: NKA

Service: ☒ In-home Hospice ❑ Hospice House ❑ Palliative Care ❑ Pastoral Services

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

3/08/XX 1115	**Nursing Note:** Client experiencing severe, intractable abdominal and back pain. Verbal and non-verbal pain cues exhibited. Client is bed-bound and requires total assistance with self-care, has reduced oral intake, and episodic confusion. Will encourage repositioning client every 2 hours and position feet on pillow or hanging heels. Obtained new pain orders, will review comfort care medications with family as outlined in the client's updated medication list.
3/16/XX 0935	**Nursing Note:** Client diaphoretic, flushed and skin is mottled. Client is semi-responsive to verbal and tactile stimuli, appears anxious, and has unmanaged pain as demonstrated by nonverbal cues. Vital signs obtained and documented.
3/17/XX 0845	**Nursing Note:** Client is exhibiting distressed behavior, is moaning, and grabbing at the sheets. Does not respond to verbal or tactile stimuli. 30mL urine drained from nephrostomy tubes in the past 10 hours.
1450	**Nursing Note:** Rhys is completely unresponsive with Cheyne-Stokes respirations in a crescendo-diminuendo pattern with periods of apnea lasting up to 60 seconds. Heavy oral secretions with audible terminal respiratory congestion. He is hypotensive with tachypnea and tachycardia, oxygen 79%, T 101.3 (38.5 C). He has been anuric for six hours.
1530	**Nursing Note:** Client's respirations are shallow, with four respirations per minute. He has a notable change in color; his skin appears pallor, dusky, and grey. Family present at client's bedside.



QUESTION: Matrix Multiple Choice
Scoring Rule: 0/1

Indicate on the table below what nursing interventions would be appropriate or not appropriate for Rhys and his family at this time. Each row should include a single choice.

Nursing Intervention	Indicated	Not Indicated
Provide emotional support and additional resources for the family		
Inform the family the client is nearing death		
Inquire if the family has cultural or spiritual traditions or rituals they would like to perform.		
Encourage the family to share last words and thoughts with the client		
Continue to provide comfort care to the client		
Encourage the family to remain strong and not show emotion until after the client has passed		
Reassure the family that symptoms are normal for end-of-life		
Encourage the family to be present		

Putting It All Together

DEBRIEF

End-of-life can be difficult for families. The nurse is an integral part of the process and influences the family's perception of end-of-life. The nurse can foster the nurse-family therapeutic relationship by:

- Providing emotional support and additional resources for the family.
- Informing the family that the client is nearing death, the dying process, and indicating that death is impending.
- Inquiring if the family has cultural or spiritual traditions or rituals, they would like to perform.
- Encouraging the family to share last words and thoughts with the client.
- Continuing to provide comfort care to the client.
- Reassuring the family that showing emotions and crying is a normal and natural part of saying "goodbye."
- Reassuring the family that the symptoms the client is experiencing are normal for end-of-life.
- Encouraging the family to be present, hold the client's hand, or touch them.

What Do You Think About?

1. List three additional ways the nurse can foster a therapeutic nurse-family relationship.
2. Examine your own beliefs on end-of-life and death. Where do you anticipate you would find solace? Where do you anticipate you would be challenged?
3. Consider cultural approaches to end-of-life and death. How might end-of-life, death, and afterlife vary with other ethnic groups. How do traditions vary among people living in the United States?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Cultural beliefs, attitudes, and personal experiences influence an individual's response to death. Funerals can lessen the family's grief through cultural or ritual expression, approval, and social support. Having the opportunity to honor or celebrate a loved one with a funeral service reduces grief, while poverty exacerbates grief (Becker et al., 2022).

Coping with financial concerns such as funeral costs and grieving a loved one's death is difficult. Grief can be intensified or prolonged for individuals and families with no or limited financial reserve. Coping with financial concerns and not having the means to provide a satisfying funeral can lead to depression and worse mental health (Becker et al., 2022). Financial concerns can be heightened if the loved one did not have insurance to cover the costs of care during the dying process.

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CASE STUDY: Jacklyn

CONCEPTS

- Culture/Diversity
- Perfusion
- Mood and Affect

EXEMPLAR

- Post-operative heart surgery

SPHERE OF CARE

- Regenerative/ Restorative Care

SDOH DOMAIN

- Health Care Access & Quality
- Social & Community Context
- Economic Stability

STUDENT LEARNING OUTCOMES

1. Appraise clinical signs and symptoms of post-operative recovery delays.
2. Identify cultural/religious impact on healthcare decisions and approaches.
3. Describe the effects of mental health on post-operative recovery.
4. Appraise how SDOH influence adherence to lifestyle modifications following major surgery.

SCENARIO SUMMARY

A 46-year-old female, Jehovah's Witness was brought to the hospital with chest pain and undergoes a cardiac catheterization and off-pump, "Beating Heart," open heart surgery. Client stays two nights in the cardiac-surgical intensive care unit after surgery and is transferred to the telemetry floor.

NURSING ROLE

Telemetry Acute Care

The telemetry nurse has just received notice they would be admitting a transfer patient from the cardiac-surgical intensive care unit (CSICU). The secretary notifies the telemetry nurse that the CSICU nurse is on the phone to give report. The following phone report is given:

7/23/XX

0830

"The patient you will be receiving is Jacklyn Smuth. Jacklyn is a 46-year-old female who was brought to the hospital five days ago with chest pain. She was immediately referred for a cardiac catheterization. She had a positive nuclear stress test that showed reduced blood flow to the left ventricle with a high suspicion for coronary artery disease. Jacklyn underwent a cardiac catheterization through the radial artery. Unfortunately, revascularization could not be achieved to the left ventricle with a coronary stent. You may have cared for her, because after the cardiac catheterization, she was sent to your floor for 3 days prior to her surgery.

On 7/21, Jacklyn underwent "off-pump" cardiac surgery where the heart lung bypass machine was not used in efforts to minimize total blood loss during surgery. I forgot to mention this earlier, but Jacklyn is a Jehovah's Witness. The 4-hour surgery went ok. They took the saphenous vein from her left leg and used it as the vessel to bypass the obstructed vessel to the left ventricle. Some blood loss was noted during the surgery and post-operatively. Her hemoglobin level prior to surgery was 12.3 and this morning it was 10. She was extubated 1.5 hours after surgery and is on 3 L NC.

Her labs looked good this morning, she has an IV in her left hand that is patent and works well. She had a central line in her right internal jugular vein, but that was taken out at 0645 this morning. The site is covered, dressing is clean/dry/intact. She has one JP that is at the bottom of her midsternal incision with minimal drainage. Midsternal incision and left leg incisions are glued with no swelling or drainage noted. Ventricular pacing wires are secured, and no rhythm issues have been noted since surgery. She ate breakfast this morning and got up and walked about 25 feet down the hallway."

Smuth, Jacklyn M.	Age: 46 years	Weight: 156 lb	Provider: Henry Jenson
Allergies: NKA	Code Status: Full	Height: 67"	Encounter #: 00067896005

HISTORY	NURSING NOTES	VITAL SIGNS	LABS & DIAGNOSTICS	MEDICATION RECORD	FLOW SHEETS	ORDERS

7/23/XX 0900	**MEDICAL HISTORY**
	Coronary artery disease, anxiety, depression
	SURGICAL HISTORY
	Cardiac catheterization (stent placed to RCA) (this hospital stay) Coronary artery bypass graft surgery (off-pump) (this hospital stay)
	SOCIAL HISTORY
	Lives in a rural area of the state next to a cattle lot, where the client and her son work. Widowed 2 years ago after her husband was in a tragic car accident. Went into a state of major depression where she sought therapy and moved in with her son and his wife 1 ½ years ago. Occasional alcohol and tobacco use. Prior to surgery, had not been to healthcare provider for over 7 years.

QUESTION: Drop-Down Cloze
Scoring Rule: 0/1

The telemetry nurse reviews notes taken from the phone report and reviews the client's history. Choose the most likely options for the information missing in the statements below by selecting from the list of options/cues provided.

The nurse recognizes the client's [*Dropdown 1*] can impact healthcare approaches.

The nurse will closely monitor the client's [*Dropdown 2*] , [*Dropdown 3*] , and [*Dropdown 4*] while on the telemetry floor during post-operative recovery and in preparation for discharge.

Dropdown 1 Options	Dropdown 2 Options	Dropdown 3 Options	Dropdown 4 Options
Recent surgery	Hemoglobin	JP drain	Pulses
Cultural and religious beliefs	Oxygenation	Midsternal incision	Alcohol withdrawal
Social determinants of health	Heart rate	Mental capacity	Left leg incision
Medical history	Blood pressure	Lab values	Motivation

Putting It All Together

DEBRIEF

It is important for the nurse to recognize cultural and religious beliefs of a client due to the possible impact on healthcare approaches. The basic principle of Jehovah's Witnesses' belief is the refusal of both blood transfusions and blood products. This includes whole blood and primary blood components (platelets, white blood cells, plasma, or packed red blood cells). It is essential to discuss blood alternatives with such clients to assess their position, including their right to refuse treatment, especially in situations that would result in loss of life or limb. In emergency situations, most Jehovah's Witnesses carry a durable power of attorney (DPA) card expressing their wishes in emergencies. If no such card is present, and the client's religious belief is known, every effort should be made to avoid the use of blood and blood products (Chambault et al., 2020).

The nurse must also recognize that the surgical approach for this client was chosen in effort to reduce the amount of blood loss during surgery and avoid pulling blood from the body and putting it back into the body through the cardio-pulmonary bypass machine used in traditional open-heart surgery. Additionally, low hemoglobin levels will result in low energy, tiredness, decreased SpO2, and prolonged recovery due to the body's inability to circulate oxygen to cells, tissues, and organs. Finally, the nurse must recognize the fear, guilt, and lifestyle modifications that may come with major surgery and the impact on the client. Therefore, Jacklyn's history of depression should also be addressed and monitored.

What Do You Think About?

1. What approaches should healthcare personnel take to ensure cultural and religious beliefs of clients are being met?
2. How might a client's past mental health history impact their current hospitalization?
3. When reflecting on this client, what biases might impact the care that is provided?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

This case study focuses on the cultural/religious beliefs and mental stability of clients undergoing major surgery and addresses three of the five social determinants of health: *Health Care Access and Quality, Social and Community Context,* and *Economic Stability*. SDOH has a significant impact on cardiovascular disease (CVD) risk and outcomes, particularly among marginalized communities. The domain, *Health Care Access and Quality* include related objectives such as increasing the proportion of adults whose health care providers involve them in decisions (HC/HIT-03), decreasing the proportion of adults who report poor communication with their health care provider (HC/HIT-02), and increasing the number of community organizations that provide prevention services (ECBP-D07).

Jacklyn is committed to her religious beliefs and values and should be involved in decisions regarding her health care. The provider should accommodate her wishes, even if these wishes are not consistent with their own beliefs and values. Furthermore, the members of Jacklyn's Kingdom Hall could possibly assist with her recovery and prevention services, such as meal planning, exercise groups, walking, and emotionally supportive home visits.

Jacklyn is transported to the telemetry unit via wheelchair. The admitting telemetry nurse completes the initial assessment and notices the client is not very talkative, has low energy, and is in low spirits. Jacklyn states she is one step closer to going home and is scared. The telemetry nurse provides emotional support by utilizing empathetic communication. After a conversation with Jacklyn, the nurse states they are going to chart her assessment, review orders and labs, and will be back in the room shortly.

Smuth, Jacklyn M. | Age: 46 years | Weight: 156 lb | Provider: Henry Jenson

Allergies: NKA | Code Status: Full | Height: 67" | Encounter #: 00067896005

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

7/23/XX 0930	**Nursing Admit Note:** Client arrived to unit via wheelchair from CSICU status post-op off-pump CABG two days ago. Client quiet, reserved, and only answers questions they are asked. Client appeared to be in low spirits and stated she is scared to go home. Nurse and client further discussed concerns, fears, and support. **Admit Assessment:** Alert and oriented x4, flat affect. PERRLA present. Diminished breath sounds bilaterally, unlabored, shallow respiratory effort. Heart tones normal, S1 and S2 present. 1+ pedal and post-tibial pulses, 2+ radial pulses bilaterally. Abdomen soft and non-tender, no distension. Bowel sounds hypoactive in all 4 quadrants, last bowel movement prior to surgery. Voiding concentrated, clear urine. Grips weak bilaterally, push/pull weak bilaterally in lower extremities. Capillary refill greater than 3 seconds bilateral upper and lower extremities. Midsternal incision closed with glue, reddened borders, no swelling, or drainage noted, open to air. Left leg incision closed with glue, reddened borders, no swelling, or drainage noted, open to air. Ventricular pacing wires present, insertion sites clean and dry, secured with tape. JP present, scant amount of serosanguinous fluid present in bulb, dressing clean/dry/intact.

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry	Pain
7/23 0730	99.0°F	83	105/72	12	92% (3 L NC)	2
7/23 0932	99.1°F	95	108/78	14	91% (3 L NC)	2

Smuth, Jacklyn M.	Age: 46 years	Weight: 156 lb	Provider: Henry Jenson
Allergies: NKA	Code Status: Full	Height: 67"	Encounter #: 00067896005

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

DATE / TIME	PROVIDER ORDERS
7/23/XX 0910	Transfer to telemetry floor for post-op recovery
	Obtain vital signs q4hr x2; then q8hr. Titrate oxygen to maintain SpO2 above 92%, call if more than 5L NC
	Monitor JP drainage. Call if more than 75 mL in one hour or signs of bleeding
	Strict I&O
	Ambulate QID; Incentive spirometer hourly while awake; Sternal support when coughing
	Sternal precautions and care; no lifting, pulling, pushing
	Keep incisions clean and dry. Call with change of status
	Alert phlebotomy to use only pediatric lab tubes for all lab draws
	Medications: Metoprolol 25 mg PO BID, Erythropoietin 21,300 u IV daily, Ferrous sulfate 610 mg IV daily, Vitamin B12 1000µg PO daily, Folic acid 800 mcg PO daily, Acetaminophen 650 mg q4hr, Senna PO BID

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

LAB	REFERENCE RANGE	7/20 1600 (Pre-op)	7/22 0600 (Post-op Day 1)	7/23 0600 (Post-op Day 2)
Sodium	136-145 mEq/L	138	132	137
Potassium	3.5-5.0 mEq/L	4.2	4.9	4.6
Magnesium	1.5-2.4 mEq/L	1.3	2	2.2
Chloride	98-106 mEq/L	101	99	105
Calcium	9-10.5 g/dL	9.9	10	10.1
Glucose	70-100 mg/dL	83	133	127
WBC	4,000-10,000 uL	5,948	9,678	9,034
Hemoglobin	12-17 g/dL	12.3	9.8	10
Hematocrit	36-51%	34	31	33
RBC	4.2-5.9 cells/L	4	3.3	3.7
Platelets	150,000-350,000 uL	227,003	198,372	202,617
BUN	8-20 mg/dL	17	25	20
Creatinine	0.7-1.3 mg/dL	0.8	1.4	1.2
PT	11-12.5 seconds	11.4	12.4	11.9
INR	0.8-1.1	1	1.6	1.2
aPTT	25-35 seconds	24	42	33

QUESTION: Matrix Multiple Choice
Scoring Rule: 0/1

After reviewing the client information, determine the cues that are relevant or irrelevant to the client's status. Each row should include a single choice.

Finding	Relevant	Irrelevant
Client flat affect and low-spirits		
Diminished breath sounds		
Bowel sounds hypoactive		
Weakness		
Reddened wound borders		
Heart rate		
Temperature		
Pulse oximetry readings (Sp02)		
WBC value		
Hemoglobin value		
Red blood cell value		
Occasional alcohol use		
Occupation		
History of depression		

Putting It All Together

DEBRIEF

Relevant cues include the client's clinical presentation, including diminished breath sounds, lower Sp02 reading, weakness, hemoglobin, and red blood cell values. These clinical presentation cues indicate to the nurse how well oxygen is transported around the body and to the cells. The client's occupation may affect her ability to return to work after her surgery due to physical stressors and lifestyle modifications that will need to be made. Additionally, the client's flat affect, low spirits, and history of depression are relevant to the client's current situation and condition because of the high risk of postoperative depression and the client showing signs of a slower recovery. Feelings of hopelessness and adjustments to an individual's lifestyle after a major surgery are relevant in postoperative cares.

The nurse must recognize and analyze cues from the client to provide holistic care. Utilizing therapeutic and empathetic communication styles allows the nurse to effectively communicate and listen to advocate clients' needs and wishes. Nursing empathy is characterized by the nurses' ability to understand their clients' feelings, experiences, or psychosocial abilities (Wu, 2021). Empathy plays an important role in establishing a positive nurse-client relationship, resulting in favorable nursing care.

What Do You Think About?

1. Relate each of the clinical assessment cues with the client's low hemoglobin level and further investigate the pathophysiology of oxygenation at the cellular level.
2. Compare and contrast empathetic and therapeutic communication styles.
3. What are the benefits for Jacklyn to have an Advanced Health Care Directive?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

The second SDOH domain addressed in this case study is *Social and Community Context.* Recognizing SDOH are the social conditions in which people are born, live and work, play, worship, and go to school establishes a fundamental understanding into rationalizing health concerns and outcomes of clients. Additionally, SDOH offers a more inclusive view of how one's geographic location, neighborhood, and access to health care play a critical role in morbidity and mortality. It is expected that SDOH will continue to increase in relevance and integration of client management in acute and community health settings, especially as healthcare organizations seek to achieve equity and decrease health disparities among different populations (Brandt et al., 2023).

The goal of the domain, *Social and Community Context,* is to increase social and community support. Jacklyn's commitment to her religious beliefs and relationship with her church can positively impact her recovery and ongoing health and well-being. Jacklyn is experiencing depressive symptoms and may find solace in fellowship with Kingdom Hall members and prayer. This interaction would meet the *Social and Community Context* objective, increase the proportion of adults who talk with friends and family about their health (HC/HIT-04).

It is post-op day 3, and Jacklyn has had trouble walking down the hallway without needing to take a break and becoming short of breath. Jacklyn refused her walk this morning as she told the nurse, "I feel like I am not making any progress, I'm worse off now than I was before my surgery. I wish my son never brought me to the hospital." Jacklyn then requests the lights be turned down and left alone.

Smuth, Jacklyn M. | Age: 46 years | Weight: 156 lb | Provider: Henry Jenson

Allergies: NKA | Code Status: Full | Height: 67" | Encounter #: 00067896005

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

7/24/XX 1045	**Nursing Note:** Client walked to end of hallway and back to room with 1 assist. Client had to take 3 breaks due to shortness of breath. Sp02 checked during walk at was 89%, increased oxygen to 4L NC to help client recover. Client is disappointed in her progress and states she wishes her "son never brought me to the hospital." Client refused breakfast this morning and requests lights to be turned down and "to be left alone." Nurse discussed the importance of ambulation and deep breathing for post-op recovery and to help get the oxygen off. Client appears frustrated, angry, and depressed in both verbal and non-verbal actions.

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry	Pain
7/23 0730	99.0°F	83	106/72	12	92% (3 L NC)	2
7/23 0932	99.1°F	95	108/78	14	91% (3 L NC)	2
7/23 1330	99.2°F	89	110/76	14	90% (3 L NC)	3
7/23 1730	99.0°F	91	128/82	16	90% (3 L NC)	4
7/23 2200	98.8°F	85	104/70	14	91% (3 L NC)	2
7/24 0630	98.6°F	83	126/76	14	89% (3 L NC)	4
7/24 1040		102		22	87% (4 L NC)	

Smuth, Jacklyn M. | Age: 46 years | Weight: 156 lb | Provider: Henry Jenson

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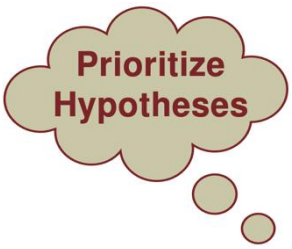
HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

LAB	REFERENCE RANGE	7/20 1600 (Pre-op)	7/22 0600 (Post-op Day 1)	7/23 0600 (Post-op Day 2)
Sodium	136-145 mEq/L	138	132	137
Potassium	3.5-5.0 mEq/L	4.2	4.9	4.6
Magnesium	1.5-2.4 mEq/L	1.3	2	2.2
Chloride	98-106 mEq/L	101	99	105
Calcium	9-10.5 g/dL	9.9	10	10.1
Glucose	70-100 mg/dL	83	133	127
WBC	4,000-10,000 uL	5,948	9,678	9,034
Hemoglobin	12-17 g/dL	12.3	9.8	10
Hematocrit	36-51%	34	31	33
RBC	4.2-5.9 cells/L	4	3.3	3.7
Platelets	150,000-350,000 uL	227,003	198,372	202,617
BUN	8-20 mg/dL	17	25	20
Creatinine	0.7-1.3 mg/dL	0.8	1.4	1.2
PT	11-12.5 seconds	11.4	12.4	11.9
INR	0.8-1.1	1	1.6	1.2
aPTT	25-35 seconds	24	42	33



QUESTION: Drop Down Cloze

Scoring Rule: 0/1

The nurse is concerned about the client's inability to ambulate very far, increasing oxygen needs, and lack of motivation. Choose the most likely options for the information missing from the statement(s) by selecting from the list of options provided.

The client's delayed post-operative recovery is multifaceted. The nurse recognizes the most likely underlying cause of the client's delayed progress is caused by [*Dropdown 1*] as evidenced by [*Dropdown 2*] , [*Dropdown 3*] , and [*Dropdown 4*] .

Dropdown 1 Options	Dropdown 2 Options	Dropdown 3 Options	Dropdown 4 Options
Depression	Turning lights down	Client anger	Low energy
Decrease in blood pressure	Decreased SpO2	Wanting to be alone	Client frustration
Low hemoglobin level	+1 pedal pulses	Weak grips	Increased heart rate
Decreased motivation	Refusing walks	SOB with ambulation	Refusing breakfast

Putting It All Together

DEBRIEF

While the client appears to be frustrated and withdrawn, it is important for the nurse to hypothesize logical underlying causes. This client is experiencing shortness of breath with ambulation, increasing oxygenation needs, and a lack of energy and motivation. Postoperative anemia or low hemoglobin after major surgery is associated with poor outcomes, including infections, increased length of stay, and mortality. Anemia is a very common complication in the postoperative period, with a prevalence of 80-90% after major surgery. Since 2005, the concept of patient blood management has been introduced and utilized in healthcare to focus on treating pre-operative anemia, reducing peri-operative blood loss, and optimizing patient-specific physiological reserves post-operatively (Kalra et al., 2021).

It is important for the nurse to also address the client's mental status since the client has a recent history of depression where she sought treatment. Fixing the underlying cause and helping the client to understand and educate them on processes occurring in their body will be essential in supporting the client's mental state and continuing to progress through postoperative recovery.

What Do You Think About?

1. What is the significance of hemoglobin and how does it apply to other disease processes?
2. Identify the significance of the client's medications and how they relate to her post-operative anemia.
3. Provide at least three examples that contribute to economic stability?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Economic stability is a person's ability to possess, maintain, or acquire the necessary resources for a healthy life. Income and financial health are the strongest and most well-studied factors. Other factors include employment and work environment. Lower household income has been associated with purchasing fewer healthy foods, engaging in less physical activity, and higher prevalence of cardiovascular disease (CVD) (Brandt et al., 2022).

Individuals with disabilities, injuries, or conditions like CVD may be limited in their ability to work. Jacklyn works on a cattle lot with her son, which may be too strenuous for her to continue working, leading to economic concerns. Objectives associated with *Economic Stability* is to increase suitable employment in working-aged people (SDOH-02) and to decrease injuries resulting in missed days of work (OSH-02). *Economic Stability* is also influenced by insurance coverage or lack of insurance to cover required procedures and/or post-operative therapies. Healthcare expenses not covered by insurance and high deductible costs can create a financial burden for individuals and families. Another contributing SDOH for Jacklyn is that she lives in a rural community that generally has fewer employment opportunities. Jacklyn does not drive, adding an additional barrier to employment and adherence to post-operative therapies.

The unlicensed nursing assistant personnel (UAP) approaches the nurse with concerns about a statement made by Jacklyn while getting assistance to the restroom. The UAP states the client mentioned herself as a failure and would have "been better off dead." The nurse recognizes the significance of this statement and relates Jacklyn's history of depression after the loss of her husband. The nurse understands the severity of the statement and approaches Jacklyn in her room. Upon entering the client's room, the nurse finds Jacklyn sitting on the edge of her bed with tears in her eyes. The nurse listens as the client shares thoughts, fears, and concerns she has about her hospital stay, the stability of her job, lack of insurance, and uncertainty about the future.

After a thorough conversation with the client, the nurse has the Jacklyn complete a depression screening tool used in the nursing unit, the Patient Health Questionnaire™ (PHQ-9).

Jacklyn completes and returns the document to the nurse →

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

ID #: Jacklyn Smith DATE: July 24

Over the last 2 *weeks*, how often have you been bothered by any of the following problems?
(use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	✓ 2	3
2. Feeling down, depressed, or hopeless	0	1	2	✓ 3
3. Trouble falling or staying asleep, or sleeping too much	0	✓ 1	2	3
4. Feeling tired or having little energy	0	1	2	✓ 3
5. Poor appetite or overeating	0	1	2	✓ 3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	✓ 2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	✓ 1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite — being so figety or restless that you have been moving around a lot more than usual	0	1	2	✓ 3
9. Thoughts that you would be better off dead, or of hurting yourself	0	1	2	✓ 3
		add columns	2 + 4 + 15	

(Healthcare professional: For interpretation of TOTAL, please refer to accompanying scoring card). TOTAL: 21

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QUESTION: Matrix Multiple Choice
Scoring Rule: 0/1

The nurse reviews the PHQ-9™ form filled out by the client. For each potential intervention, specify whether the intervention is indicated or not indicated for the client status.

Potential Intervention	Indicated	Not Indicated
Implement suicide precautions		
Inquire about spiritual care and support		
Ask the client to elaborate on question 9 of the survey		
Screen visitors		
Provide supportive resources		
Contact primary provider		
Have the UAP stay with the client until the end of the shift		
Minimize the number of interruptions at night		

Putting It All Together

DEBRIEF

Depression does not typically occur in isolation and is a major risk factor for heart disease. Given the client's previous history and understanding that depression after major surgery is common and affects millions of people each year, it is essential for the nurse to generate solutions to achieve a desirable outcome. Undergoing a major surgery leaves individuals left to manage many details in life differently than normal. Most people do not stop to think about how they can help themselves feel good emotionally during their surgical recovery (AHA, 2020). Therefore, asking the client to elaborate on her answers to the questionnaire, especially focused on question 9, would be indicated in this situation. Additionally, the nurse would want to provide supportive resources and try to minimize the number of interruptions at night to help promote healthy sleeping patterns for the client. Lastly, the nurse would want to communicate this information and the questionnaire results to the provider to ensure a collaborative approach is taken.

Healthcare clinicians are encouraged to routinely assess clients for depressive symptoms before surgery and continue screening after surgery. The PHQ-9™ is an example of a depression screening that takes the client less than 10 minutes to complete.

You can access this screen by clicking **HERE**.

What Do You Think About?

1. What risk factors are exhibited by Jacklyn early on in her hospital stay for depression?
2. Explain what supportive guidance might look like for Jacklyn in her current situation.
3. Identify two policy, two community and two individual interventions that can be incorporated into Jacklyn's care to decrease adverse SDOH.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Implicit bias, discrimination, and stigma create a framework that disentangles structural health equity determinants into key constructs, which allows a focus on their roles in the lived personal experiences of vulnerable populations. Nurses must allow for the exploration of broader sociopolitical, cultural, and economic factors and intermediary health determinants on social position. Adverse SDOH can chronically stress the biology of disadvantaged groups, impact cardiovascular health factors, and promote disparities in CVD outcomes (Powell-Wiley et al., 2022).

Additional considerations must relate the client's SDOH with stress hormones and their negative impact on post-operative recovery and rehabilitation. The immune system responds to chronic stress that can be induced by psychological stress, such as discrimination, loneliness, job strain, violence, food insecurity, and financial instability (Powell-Wiley et al., 2022).

The nurse demonstrated effective communication by addressing Jacklyn's statements with her. Effective health communication is critical to health and well-being. Healthy People 2030 focuses on improving health communication (HC/HIT-02) so people can easily understand (HC/HIT-01) and act on health information.

It is post-op day 5, and Jacklyn has made great progress in her physical, emotional, and mental post-operative recovery. Two days ago, Jacklyn started in-patient Cardiac Rehab where she met other individuals who have also recently undergone cardiac surgeries and procedures. Jacklyn has completed one day at Cardiac Rehab and has quickly formed a bond with one of the cardiac nurses who lost their spouse just 6 months ago. The telemetry nurse caring for Jacklyn today is reviewing her chart before giving morning medications.

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HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

7/24/XX 1045	**Nursing Note:** Client walked to end of hallway and back to room with 1 assist. Client had to take 3 breaks due to shortness of breath. Pulse ox checked during walk at was 89%, increased oxygen to 4L NC to help client recover. Client is disappointed in her progress and states she wishes her "son never brought me to the hospital." Client refused breakfast this morning and requests lights to be turned down and "to be left alone." Nurse discussed the importance of ambulation and deep breathing for post-op recovery and to help get the oxygen off. Client appears frustrated, angry, and depressed in both verbal and non-verbal actions.
1150	**Nursing Note:** Approached client after a safety concern from UAP about a statement the client made. Through conversation with client, concerns of post-op depression and decreased motivation were noted. Client completed the PHQ-9 screen and returned to nurse. Primary provider notified. Will consult cardiac rehab for additional physical, emotional, and mental support for client.
1450	**Nursing Note:** Cardiac rehabilitation nurse visited client in her room for about 45 minutes. Plan is for client to join tomorrow morning's session at 0930. Client in agreement to start and states, "guess I will try; I'm not getting any better laying in my bed being angry about everything." Client expressed concerns about her slow recovery, cardiac rehabilitation nurse reassured client and provided education and educational material to client to review prior to the morning session. Questions encouraged and answered.
7/26/XX 0600	**Nursing Note:** Client had a good night. No acute events overnight, client slept with minimal disturbance. Prior to bed, client walked down the hallway and back to room with 1 assist. Client took 2 breaks due to shortness of breath. Pulse ox checked during walk and maintained 89-91%. Client mentioned she was looking forward to cardiac rehab in the morning and had looked through the material provided by the cardiac rehab nurse.

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HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

CARDIAC REHAB	
7/25/XX 0930	**Session 1:** Introduction to rehab program provided to client with an estimate of 36 total sessions over 12 weeks. Medical evaluation completed to assess client needs and limitations. Progress journal given to client with focus on positive journey recovery. Client able to begin goal setting, participated in activities, and walked in the hallway with 1 needed break due to shortness of breath. Pulse ox remained 92% or greater during ambulation.

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Date / Time	Temperature	Heart Rate	Blood Pressure	Respiratory Rate	Pulse Oximetry	Pain
7/24 0630	98.6°F	83	126/76	14	89% (3 L NC)	4
7/24 1040		102		22	87% (4 L NC)	
7/24 1500	98.9°F	89	114/72	16	90% (4 L NC)	2
7/24 2300	98.7°F	76	110/74	14	92% (4 L NC)	1
7/25 0745	98.9°F	85	124/82	18	95% (4 L NC)	3
7/25 1515	99.0°F	89	118/80	16	92 (3 L NC)	4
7/25 2330	98.6°F	78	108/76	12	93% (3 L NC)	2
7/26 0700	98.8°F	91	120/82	14	96% (3 L NC)	3

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

LAB	REFERENCE RANGE	7/23 0600 (Post-op Day 2)	7/24 0615 (Post-op Day 3)	7/25 0600 (Post-op Day 4)	7/26 0640 (Post-op Day 5)
Sodium	136-145 mEq/L	137	138	145	141
Potassium	3.5-5.0 mEq/L	4.6	4.9	4.3	4.1
Magnesium	1.5-2.4 mEq/L	2.2	2.5	2	2.1
Chloride	98-106 mEq/L	105	101	99	102
Calcium	9-10.5 g/dL	10.1	9.9	10	9.8
Glucose	70-100 mg/dL	127	83	133	116
WBC	4,000-10,000 uL	9,034	9,948	8,678	8,034
Hemoglobin	12-17 g/dL	10	10.6	11.2	11.9
Hematocrit	36-51%	33	34	36	40
RBC	4.2-5.9 cells/L	3.7	3.8	3.9	4
Platelets	150,000-350,000 uL	202,617	227,003	198,372	202,675
BUN	8-20 mg/dL	20	17	15	13
Creatinine	0.7-1.3 mg/dL	1.2	1.2	1.1	0.9

QUESTION: Multiple Choice
Scoring Rule: 0/1

The nurse enters the client's room to see Jacklyn sitting in the chair, eating breakfast. The nurse sees Jacklyn's nasal cannula laying on the bed next to her. The nurse asks Jacklyn how she is feeling this morning, and she states, "I'm feeling better each day, it is just so hard to eat with that thing stuck up your nose, so I took it off…I hope that is okay."

What action will nurse take next?

a. Put the nasal canula back on the client
b. Tell Jacklyn if she becomes short of breath to put it back on
c. Check Sp02
d. Educate Jacklyn on the importance of keeping things on until the nurse says it is okay to take off

Putting It All Together

DEBRIEF

Cardiac rehab is a specific type of therapy focused on clients who have had a recent heart attack, heart conditions such as coronary artery disease (CAD), heart failure (HF), peripheral artery disease (PAD), or recent heart procedures/surgeries. Additionally, there are many other types of therapies to promote better health outcomes for clients after major surgery. These therapies include a multidisciplinary team that may include providers, nurses, exercise specialists, dieticians, nutritionists, and many others. Rehabilitation measures focus on holistic approaches to promoting independence and healthy living. This includes clients' physical, mental, and emotional support as they recover. It is evident that Jacklyn is already seeing a positive impact from cardiac rehab, especially from a mental and emotional supportive aspect. Developing a sense of community for clients to ensure they are not alone can provide significant positive and forward progression in their recovery.

The client's chart, including nursing notes, lab values, and vital signs, all indicate improvement in Jacklyn's oxygenation and breathing status. Therefore, it would be appropriate for the nurse's next action to see what the client's Sp02 is to assess the client's ability to oxygenate without supplemental oxygen. If the SpO2 is adequate and the client is not showing signs of distress, keeping the oxygen off the client would be appropriate. Additionally, this forward progress will help support Jacklyn's mental and emotional states as it will bring positive thoughts forward as she is not reliant on medical therapies as much.

What Do You Think About?

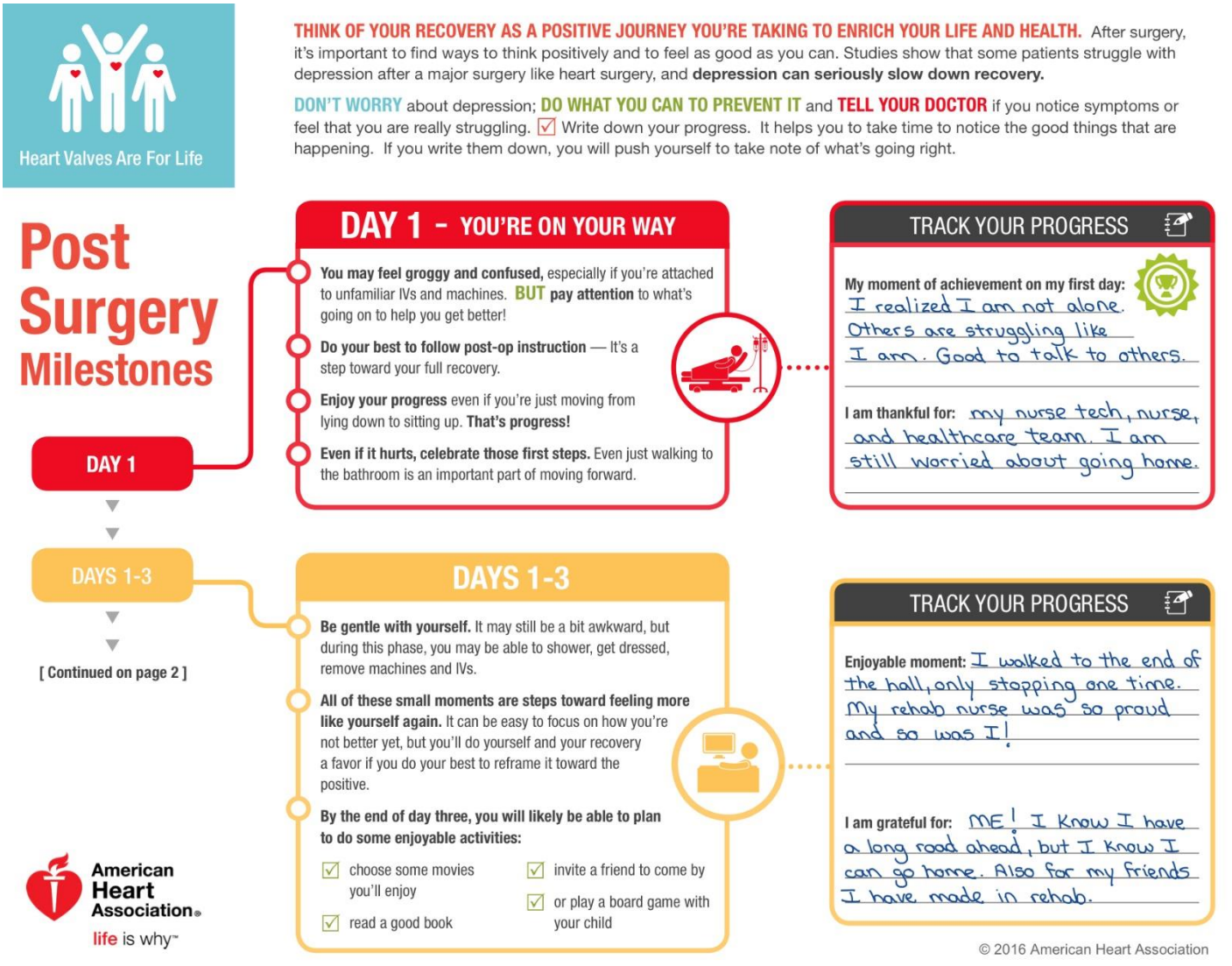
1. What other measurements or assessment pieces would the nurse look for to identify forward/positive progression from cardiac rehab?
2. Identify resources in the community that may provide transportation to prescribed therapies in your local community.
3. Identify 5 primary factors that may limit Jacklyn's ability to be adherent to her cardiac rehab schedule.

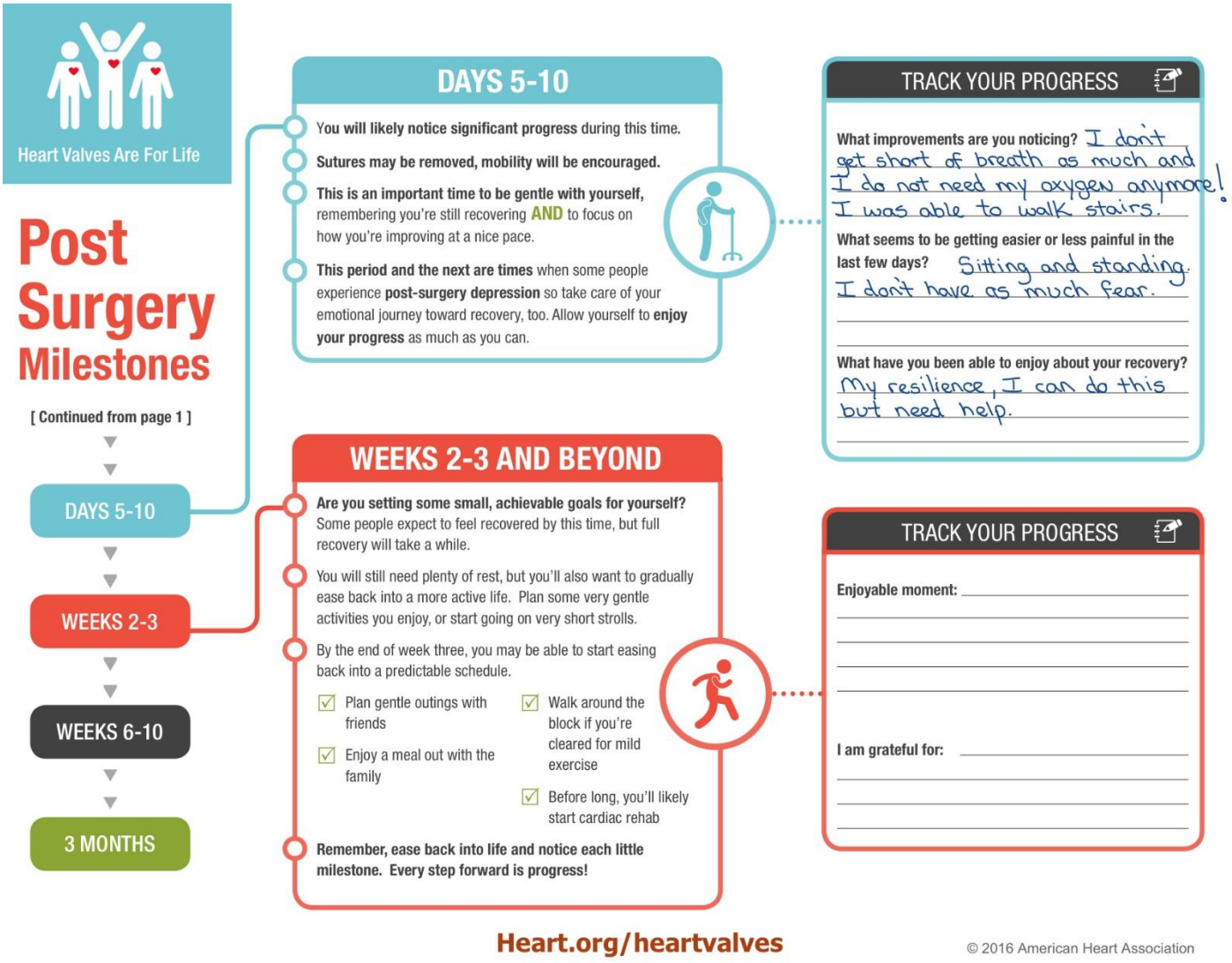
RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Transportation is an important SDOH in rural communities. The availability of reliable transportation impacts an individual's ability to access appropriate and well-coordinated healthcare, purchase nutritious food, and otherwise care for themselves. Rural populations have a greater need for transportation services to maintain their health and well-being. Populations most at risk include older adults, people with disabilities, low-income individuals and families, veterans, and people with special healthcare needs who require additional assistance to access healthcare. Communities that provide transportation services to support access to rural healthcare benefit healthcare providers by decreasing inappropriate use of EMS services, improving utilization of healthcare services, decreasing no-show rates, and increasing access to health-supporting services. Transportation as a community-based service can allow the elderly and people with disabilities to live successfully in a community rather than entering a long-term care facility or leaving the community (Rural Health Information Hub, 2022).

It is post-op day 7, and Jacklyn is being discharged. She has made significant progress over the past 3 days and is able to ambulate without needing breaks or becoming short of breath. She is actively participating in cardiac rehab daily and plans to continue as an outpatient. Jacklyn's mental status has improved, and she has utilized resources provided to her during the hospital stay. Jacklyn is sharing her milestones journal and discussing short- and long-term goals with the telemetry nurse prior to discharge.

MILESTONE JOURNAL





Evaluate Outcomes

QUESTION: Multiple Response Select All That Apply

Scoring Rule: +/-

The nurse is pleased to review Jacklyn's journal and goals. As the nurse, determine which of the goals created by the client demonstrates a lack of understanding and needs follow-up.

	Goal Statement
❑	Discuss cardiac rehab schedule with son for transportation needs.
❑	Try to make it to every session
❑	Talk to my boss about job responsibilities, see if there is another position that does not require as much lifting and pulling
❑	Try to find support outside of my son. Join the support group of fellow patients and caregivers who have recovered from heart-related events
❑	Walk 2 miles by the end of the month

Putting It All Together

DEBRIEF

Comparing observed outcomes against expected outcomes is an essential nursing action prior to discharge. This will help the nurse collaborate with the client to identify improving/declining/unchanged status and evaluate the client's knowledge of their disease process, recovery, medications, and restrictions before discharge. As the nurse reviews Jacklyn's Milestone Journal, it is evident that the client is in a better mental and emotional state than she was a few days ago. Jacklyn articulates signs of hope and continued progress for the future. The nurse would want to further discuss the timeframe for Jacklyn's goal of walking 2 miles by the end of the month, knowing Jacklyn is being discharged on July 28.

It is also important for the nurse to realize that when clients are discharged, they are leaving a controlled environment and entering a more uncontrolled environment that is heavily influenced by SDOH. Allowing the client to identify barriers they will face upon discharge will assist the nurse in identifying possible resources, guidance, and tools to support the client's forward post-op progression and avoid readmission to the hospital. The nurse can use varied teaching strategies when assessing the client's understanding. Spending valuable time assessing the effectiveness of the education will help the nurse understand ways to improve health literacy and client understanding before discharge to avoid readmission back to the hospital.

What Do You Think About?

1. What SDOH will impact Jacklyn as she goes back home and is discharged from the hospital?
2. What resources could be given or shared with Jacklyn prior to discharge?
3. Describe actions a nurse can take to addressed SDOH and related mental health outcomes?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Depression in the United States is increasing across all races and ethnicities and is attributed to multiple SDOHs (Yelton et al., 2022). Healthy People 2030 aims to ensure "healthy, thriving lives and well-being free of preventable disease, disability, injury, and premature death" and acknowledges the need to achieve health equity through structural and behavioral intervention. Health People 2030 categorized SDOH into five domains *Economic Stability, Education Access and Quality, Health Care Access and Quality, Neighborhood and Built Environment*, and *Social and Community Context*. Within these domains are several potential risks and protective factors for mental health outcomes relating to access, quality, and safety of material, social, educational, occupational, civic, and health-related resources (Yelton et al., 2022). Systemic racism, implicit bias, reluctance to refer, segregation, and inequity for protective factors for specific groups or communities can contribute to adverse SDOH outcomes and depression/depressive symptoms.

Social change and action to increase equity and provide a voice to populations whose otherwise voices are not heard can be influenced by the nurse's advocacy, engagement in the legislative process, and participatory research promoting dialogue that shares stories about important issues affecting rural and other marginalized individuals or groups.

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CASE STUDY: Khloe

CONCEPTS

- Health Promotion
- Development
- Health Policy

EXEMPLAR

- Early Childhood Health Promotion

SPHERE OF CARE

- Wellness, Disease Prevention

SDOH DOMAIN

- Education Access & Quality
- Neighborhood & Built Environment
- Social & Community Context
- Health Care Access & Quality

STUDENT LEARNING OUTCOMES

1. Differentiate health promotion activities from preventive care measures.
2. Identify milestones for a 5-year-old for each developmental domain; social/emotional, language, cognitive, and gross and fine motor movement.
3. Identify ways parents can help their children be developmentally ready for school.
4. Discuss three ways the nurse can advocate for health policy change.

SCENARIO SUMMARY

Khloe Seng is a 5-year-old who is planning to start kindergarten in the fall. She lives in a multigenerational home in a rural community. Khloe and her parents are attending a kindergarten orientation this afternoon at the local public elementary school.

NURSING ROLE

School Nurse

Khloe Seng is a 5-year-old who is planning to start kindergarten in the fall. She is an only child and lives in a multigenerational home with her parents and her grandmother in a rural community. Khloe's parents both work full-time, and she attends a daycare center Monday through Friday that integrates a pre-K curriculum. Khloe and her parents are attending a kindergarten orientation this afternoon at the local public elementary school 3 miles from their home. It is requested they bring copies of Khloe's immunization and dental screening records. Khloe's parents enthusiastically informed Khloe that she gets to go to school today and will be able to see the bus that will pick her up and take her to school every day. Khloe states, "I am scared I won't know when to get off the bus." Her parents read her the book, *Bee's First School Bus Ride,* before going to her kindergarten orientation. The book is about Bee, like Khloe, who is nervous about taking the bus for the first time and the adventures that come with new experiences. Khloe asks if she can take "Bee" with her when she gets on the bus at kindergarten orientation.

Seng, Khloe A.	Age: 5 years	Weight: 42 lb	Provider: Linda Folten
Allergies: NKA	Code Status: Full	Height: 37"	Encounter #: 96426905331

HISTORY	NURSING NOTES	VITAL SIGNS	LABS & DIAGNOSTICS	MEDICATION RECORD	FLOW SHEETS	ORDERS

8/01/XX

MEDICAL HISTORY

- Born at 38 weeks gestation, her mom had an uneventful pregnancy and a spontaneous vaginal delivery
- Khloe has had regular scheduled appointments with her pediatrician
- She is up-to-date with recommended immunizations and has had dental screening and fluoride treatments
- She has no allergies or food intolerances
- She has had two ear infections, treated with antibiotics

SURGICAL HISTORY

- None

SOCIAL HISTORY

- Khloe lives in a multigenerational single-family home with her parents in a modest neighborhood
- Both parents work full time
- Khloe attends a pre-K program at the day center that she attends Monday through Friday

Review Khloe's immunization record below. Additionally, review CDC 2023 recommended immunizations for children from birth through 6 years old by clicking **HERE.**

Link resource: https://www.cdc.gov/vaccines/parents/downloads/parent-ver-sch-0-6yrs.pdf

Seng, Khloe A.	Age: 5 years	Weight: 42 lb	Provider: Linda Folten
Allergies: NKA	Code Status: Full	Height: 37”	Encounter #: 96426905331

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

Immunization Record

Vaccine	Birth to 6 months			12-18 months		At Kindergarten
Hepatitis B	5-17-XX	6-30-XX			9-12-XX	
Rotavirus (RV)	7-15-XX	9-20-XX	11-21-XX			
Diphtheria, Tetanus, Pertussis (DTaP, DT, Td)	7-15-XX	9-20-XX	11-21-XX		9-12-XX	7-8-XX
Haemophilus influenzae type b (Hib)	7-15-XX	9-20-XX	11-21-XX		9-12-XX	
Pneumococcal (PCV13, PCV 15)	7-15-XX	9-20-XX	11-21-XX		9-12-XX	
Polio (IPV)	7-15-XX	9-20-XX	11-21-XX			7-8-XX
Covid-19						
Flu Influenza (1-2 doses yearly)						
Measles, Mumps, Rubella (MMR)				5-19-XX		7-8-XX
Chickenpox (Varicella)				5-19-XX		7-8-XX
Hepatitis A				5-19	9-12-xx	
Tetanus, Diphtheria, Pertussis (Tdap)						
Meningococcal (MCV4)						
Human Papilloma Virus (HPV)						

QUESTION: Multiple Response Select All That Apply
Scoring Rule: +/-

Which of the following statements from Khloe’s history are preventive care measures? Select all that apply

- ☐ She attends a daycare center Monday through Friday that integrates a pre-K curriculum
- ☐ Khloe and her parents are attending a kindergarten orientation this afternoon at the local public elementary school
- ☐ Khloe has had regular scheduled appointments with her pediatrician
- ☐ Khloe is up-to-date with recommended immunizations
- ☐ Khloe has had dental screening
- ☐ Khloe has had fluoride treatments
- ☐ Khloe has no allergies or food intolerances
- ☐ Khloe has had two ear infections, treated with antibiotics

Putting It All Together

DEBRIEF

Establishing healthy behaviors to prevent chronic disease is easier and more effective during childhood and adolescence than trying to change unhealthy behaviors during adulthood (CDC, 2023). Preventive care is defined as routine health care that includes screenings, check-ups, and patient counseling to prevent illnesses, diseases, or other health problems. Khloe participants in health promotion/illness prevention measures indicated by up-to-date immunizations, regular milestone visits with the pediatrician, and dental screenings.

The Centers for Disease Control and Prevention (CDC) published new immunization guidelines for birth to 6-year-olds in 2023. The updated immunization recommendations include COVID-19 vaccination.

Dental caries in early childhood are associated with pain, loss of teeth, impaired growth, decreased weight gain, negative effects on quality of life, poor school performance, and future dental caries. Higher prevalence and severity of dental caries are found among specific racial and ethnic (e.g., Black and Mexican American) populations (Chou et al., 2021). According to the U.S. Preventive Services Task Force (USPSTF), social determinants of health associated with increased caries risk include lack of access to dental care, low socioeconomic status, personal and family oral health history, dietary habits (especially frequent intake of dietary sugars in foods and beverages), fluoride exposure, and oral hygiene practices (USPSTF, 2021). The Community Preventive Services Task Force (CPSTF) recommends Fluoridation of community water sources to reduce dental caries and school-based sealant delivery programs to prevent caries in children.

What Do You Think About?

1. Identify three childhood conditions and other factors that increase the risk for invasive pneumococcal disease.
2. What are two primary dental considerations for children living in rural communities?
3. List three additional preventive care measures recommended for elementary aged children.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

This case study focuses on disease prevention/promotion of health and well-being of a 5-year-old child and addresses four of the five SDOH domains: *Education Access and Quality, Neighborhood and Built Environment, Social and Community Context,* and *Health care Access and Quality.*

The goal for the SDOH domain, *Neighborhood and Built Environment*, is to create neighborhoods and environments that promote health and safety. One of the objectives for this domain is to increase the proportion of schools with policies and practices that promote health and safety (EH-D01). Assessing immunizations, dental screening, fluoride supplementation, and topical fluoride varnish to primary teeth in kindergarten screening support this objective. The second relevant objective related to *Neighborhood and Built Environment* for rural water sources is to increase the proportion of people whose water systems meet the Safe Drinking Water Act regulations (EH-03).

Khloe has adjusted well to the first weeks of school. She rides the bus to and from school. After school, her grandma meets her at the bus stop, and they talk about her day. Khloe is meeting her developmental milestones. She enjoys coloring, singing songs, riding her tricycle, and playing soccer with her friends.

QUESTION: Multiple Response Grouping
Scoring Rule: +/-

For each developmental domain below, click to specify the expected milestones for a 5-year-old. Each domain may support more than 1 expected milestone.

Developmental Domain	Expected Milestone
Social/Emotional	❑ Follows simple rules while playing a game
	❑ Does simple chores at home
	❑ Sings, dances, or acts for you
	❑ Start to think about the future
Language	❑ Answers simple questions about a book after it is read to them
	❑ Have well-developed speech and uses correct grammar most of the time
	❑ Uses or recognizes simple rhymes
	❑ Tells a story they heard or made up with at least two events
Cognitive	❑ Count to 50
	❑ Names numbers between 1 and 5 when you point to them
	❑ Writes some letters in their name
	❑ Pays attention for 5-10 minutes during activities
Gross and Fine Motor Movement	❑ Hops on one foot
	❑ Buttons some buttons
	❑ Tie their shoelaces
	❑ Successfully throw a ball at a target

(Adapted from CDC, 2021)

Putting It All Together

DEBRIEF

Milestones are categorized into social/emotional, language, cognitive, and gross and fine motor movement. Developmental milestones are a set of goals or markers that a child is expected to achieve during maturation. They help determine if a child is undergoing typical development versus if a child has delayed in a given area or over multiple areas during aging development (Misirliyan et al., 2023). The assessment of developmental orders is guided by surveillance and screening. Surveillance is the process by which children who are at risk or who have developmental delays are identified. Surveillance is done at every well-child visit and can be performed using an age-appropriate checklist of milestone records. Special attention must be had at the 4 to 5-year-old visit prior to the start of school. Screening, by comparison, is the process by which asymptomatic children who may be at risk of developing a disorder are identified via standardized testing. If a child screens positive, they should undergo a subsequent developmental-behavioral evaluation to identify the etiology of the delay (Misirliyan et al., 2023). Referral to intervention programs as early as possible is pertinent in assuring positive outcomes.

Childhood educational programs, parents and other adults can provide opportunities to help children meet their developmental milestones. Reading with children, practicing recognizing colors, numbers, and letters, and helping them to write their names all contribute to meeting milestones and being developmentally ready for school.

What Do You Think About?

1. Provide two more examples for each of the developmental milestone categories.
2. What is a primary assessment for a child with a language delay?
3. Identify five ways parents can help their children be developmentally ready for school.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

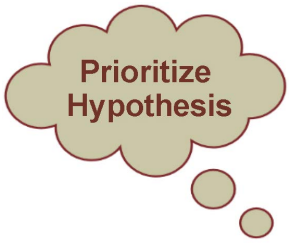
The SDOH domain, *Education Access and Quality*, aims to increase educational opportunities and help children and adolescents do well in school. Two objectives to meet this goal are to increase the proportion of developmentally ready children for school (EMC-D01) and to increase the proportion of children who participate in high-quality early childhood education programs (EMC-D03).

Children from low-income families, children with disabilities, and children who routinely experience forms of social discrimination are more likely to struggle with math and reading. They are also less likely to graduate from high school or go to college. This means they are less likely to get safe, high-paying jobs and more likely to have health problems like heart disease, diabetes, and depression (Healthy People 2030).

In addition, some children live in places with poorly performing schools, and many families cannot afford to send their children to college. The stress of living in poverty can also affect children's brain development, making it harder for them to do well in school (Healthy People 2030).

FRAME 3: Prioritize Hypothesis

Khloe was developmentally ready for school. Her parents, grandmother, and the preschool curriculum helped Khloe to develop independence by giving her simple tasks to complete at home and preschool, they developed routines, so Khloe would know what to anticipate, especially in the morning when getting ready for school. The morning schedule allowed time for breakfast, getting herself dressed, and ensuring she had her backpack ready for school. Khloe's parents read to her every evening and enjoyed reading the books Khloe brought home from the school library.



QUESTION: Multiple Response Select N
Scoring Rule: 0/1

Select three responses below that would be health promotion activities for Khloe.

- ☐ Promote access to and participation in school breakfast and lunch
- ☐ Offer physical education to increase students' knowledge, skills, and confidence to be physically active
- ☐ Promote better sleep patterns
- ☐ Support social and emotional learning
- ☐ Vision screening
- ☐ Hearing screening
- ☐ Receiving recommended vaccinations

Putting It All Together

DEBRIEF

Health promotion is multifaceted and includes upstream factors. The set of factors that impact health beyond individual-level characteristics are often referred to as "upstream factors" and are also referred to as SDOH. Upstream factors are looking at factors that contribute to health disparities in the first place. SDOH are the conditions in the places where people live, learn, work, worship, go to school, and play that can affect a wide range of health risks and outcomes. Some examples of upstream factors include access to healthy foods, access to quality health care, reliable transportation, stable housing, economic stability, and access to quality education. Societal or macro-level influences, including structural racism, discrimination, and certain policies, can result in inequities observed in these determinants (National Institute of Health, 2020).

It is important that children get timely developmental screenings and recommended healthcare services, which is key to finding health problems early when they are usually easier to treat. Positive health behaviors can help prevent diseases and injuries in children. However, there are important racial/ethnic and income disparities in these healthy behaviors and related health outcomes (Healthy People 2030). Safe, stable, and supportive relationships are critical for children's health, development, and well-being. Family-level interventions can help keep children safe and healthy. Strategies focused on children's health and safety in early childhood education programs, at school, and in their neighborhoods can also help improve health outcomes for children (Healthy People 2030).

What Do You Think About?

1. List three additional health promotion/illness prevention activities that can be encouraged at home.
2. Identify the benefits of children following the 2023 CDC immunization recommendations.
3. List three strategies that foster positive communication patterns between children and their parents.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

The goal for the SDOH domain, *Social and Community Context*, is to increase social and community support. Three of the goals for the domain, *Social and Community Context* is to increase the proportion of children whose family read to them at least four days per week (EMC-02); increase the proportion of children and adolescents who show resilience to challenges and stress (EMC-D07) and increase the proportion of children who communicate positively with their parents (EMC-01). Khloe's parents read the book *Bee's First School Bus Ride* to decrease Khloe's fear about riding the bus. Khloe's bedtime routine includes reading books and reinforcing different literary sources from the library. Khloe's grandmother meets Khloe at the bus stop, and they talk about her day. This interaction fosters positive communication patterns. Positive communication between parents and children includes discussing beliefs, experiences, and feelings. This type of communication is key to healthy relationships, and it can protect children from health risks and help them do better in school. Behavioral parenting and family interventions can increase positive communication between parents and children, including children with behavior disorders (Healthy People, 2030).

Khloe was on the playground at school and walked in front of her friend who was swinging on the swings and got a bloody nose. The teacher accompanied Khloe to the school nurse's office for assessment. During the assessment, the nurse asked Khloe what the images were on the poster located on the back of the door. The nurse noticed Khloe walked closer to the poster to see images.

Seng, Khloe A.	Age: 5 years	Weight: 42 lb	Provider: Linda Folten
Allergies: NKA	Code Status: Full	Height: 37"	Encounter #: 96426905331

HISTORY | NURSING NOTES | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

8/27/XX 1235	**Nursing Note:** Khloe accidentally walked in front of a swing on the playground and got a bloody nose. She was accompanied by Mr. Carlisle to my office. The nosebleed was easily controlled without incident. Khloe denied pain in her face, neck, or jaw. No report of a headache. When asked to describe the image on the Kindergarten Snellen Eye Chart, she measured 20/40 vision. Mother was notified of accident and vision measurement. Mother was encouraged to have Khloe seen by an ophthalmologist for further evaluation. Student picked up at 1:15 pm by her mother.

QUESTION: Multiple Response Select All That Apply
Scoring Rule: +/-

What social factors play an important role in vision loss?

- ☐ Education
- ☐ Food insecurity
- ☐ Access to quality health care
- ☐ Neighborhood Safety
- ☐ Heredity

Putting It All Together

DEBRIEF

Schools and school nurses play a significant role in health promotion/disease prevention. The school nurse role is one of the broadest nursing roles, and school nursing is one of the few subspecialties responsible for the direct care of individuals as well as care of the school community and environment. School nurses provide hearing and vision screening and can apply topical fluoride varnish to primary teeth.

Schools help decrease health disparities by fostering learning, enhancing health literacy, providing health screening, nutritional lunches, opportunities for physical education, counseling, social support, and mental health promotion (WHO, n.d.). Furthermore, schools strive to improve the health of school personnel, families, and community members as well as students; and work with community leaders to help them understand how the community contributes to or undermines health and education (WHO, n.d.).

The Snellen Chart uses a geometric scale to measure visual acuity, with normal vision at a distance set at 20/20. The numerator represents the distance the client is standing from the chart (in feet), while the denominator represents the distance from which a person with perfect eyesight can still read the smallest line the individual can visualize. For example, a client standing 20 feet away from the chart who can clearly read until the line of font that a person with normal visual acuity can read from 40 feet away would be measured as 20/40 vision (Azzam et al., 2023).

What Do You Think About?

1. Identify three ways school nurses engage in health promotion/disease prevention efforts.
2. What activity at school can adversely affect a child well-being?
3. What exam could the school nurse conduct to assess the second cranial nerve (optic nerve)?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Health Care Access and Quality is one of the Healthy People 2030 objectives. This domain aims to prevent sensory and communication disorders and improve the quality of life for those with them. Healthy People 2030 affirm that many people in the United States will have a sensory or communication disorder in their lifetime. This includes problems with vision, hearing, balance, smell, taste, voice, speech, or language.

Healthy People 2030 focuses on preventing, diagnosing, and treating these disorders in people of all ages. Many vision problems start before children enter first grade (Healthy People 2030). Sensory or communication disorders can have a major impact on social, emotional, and physical well-being. Individuals diagnosed or treated later in life often have poorer outcomes (Healthy People 2030).

The school nurse is interested in becoming more involved with advocating for legislative support for childhood immunizations, funding for school nurses, and maintaining health promotion activities for children and youth. The nurse collaborates with the state nurses association and the American Nurses Association (ANA) to identify ways to advocate for health policy changes for issues related to school nurses, children, and youth. The school nurse recognizes the ANA works to advance the nursing profession and improve health and health care for all in part by educating and forging relationships with members of Congress and congressional staff on both sides of the aisle (ANA, n.d.) compared with state nurses associations that advocate and support nurses and engages in public policy on a state level.

QUESTION: Drop-Down Cloze

Scoring Rule: 0/1

The nurse can advocate for health policy changes by *Word Choice 1* , *Word Choice 2* , and *Word Choice 3* .

Word Choices
Talking with or writing letter to elected officials
Becoming active with state and national nursing associations
Choosing to not be active unless it involves your own child
Attend public policy conferences to increase awareness of legislative priorities
Post your perspective on health policies on social media

Putting It All Together

DEBRIEF

The National Education Association (NEA) sets legislative priorities and advocates in Congress for federal laws that support public K-12 schools, post-secondary institutions, student learning, and educators. Goals for federal legislation are grouped into four main areas:

1. High-Quality Public Education
2. Supporting Student Success
3. A Voice in the Workplace
4. Good Public (NEA, 2023)

In addition to the NEA, state and national nursing associations legislate for school nursing. The American Nurses Association (ANA) has developed and co-published with the National Association of School Nurses, *School Nursing: Scope & Standards of Practice, 3rd Edition.* This text covers the full extent of nurse practice at all levels and in all settings and roles, including professional competencies, scope of practice, interprofessional collaborations, special needs and environmental health needs and code of ethics specific to school nursing, and a culturally congruent and holistic approach to the nursing process (ANA, 2023). The National Association of School Nurses (NASN) vision is that all students are healthy, safe, and ready to learn.

What Do You Think About?

1. Assess legislation in your state regarding the school nurse role and responsibilities.
2. What percentage of elementary or high schools in your jurisdiction have a nurse on site all day, every day?
3. Why is it important to have a nurse on site at every school, all day, every day?
4. What are the educational requirements for a school nurse in your state?

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

In the United States, more than 40% of school-aged children and adolescents have at least one chronic health condition, such as asthma, obesity, other physical conditions, and behavior/learning problems. The healthcare needs of children with chronic illness can be complex and continuous, including daily management and addressing potential emergencies (CDC, 2021). Further, millions of children and teens are uninsured and could qualify for health insurance (CDC, 2017). With the number of students with chronic health disorders, schools, and school nurses can assist these students in a number of ways:

- Identify whether a student has health insurance and if they have a chronic health condition. Update existing school health records or enrollment forms to note this information.
- School nurses or other school personnel play a direct role in linking children to health insurance. School nurses can advocate for training (themselves and staff) that includes guidance on insurance eligibility, how to enroll families in eligible plans, and up-to-date local, state, and federal resources.
- Advocate for school health services and community providers who accept Medicaid and offer other low-income assistance, such as providing care at reduced rates based on income level.
- Understand the referral protocols for students with chronic health conditions such as asthma, diabetes, epilepsy or seizure disorder, food allergies, poor oral health, or obesity.

Khloe saw the optometrist, was diagnosed with myopia, and received a prescription for glasses. Myopia (nearsightedness) describes the condition where individuals can see objects that are near well but have trouble seeing objects at a distance.

Seng, Khloe A.	Age: 5 years	Weight: 42 lb	Provider: Linda Folten
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HISTORY | **NURSING NOTES** | VITAL SIGNS | LABS & DIAGNOSTICS | MEDICATION RECORD | FLOW SHEETS | ORDERS

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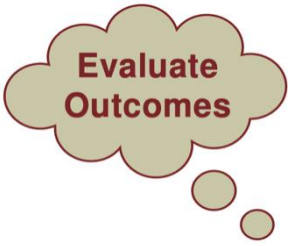
9/14/XX 0830	**Nursing Note:** Khloe came to the nurse's office to show her new glasses. Khloe was excited to read the Snellen kindergarten eye vision poster. She said, "I can see the bottom line now."



QUESTION: Multiple Response Select All That Apply
Scoring Rule: +/-

The nurse assisted Khloe with her bloody nose and screening that contributed to her diagnosis and obtaining corrective lenses. Select additional ways the school nurse impacts positive student outcomes.

- ☐ Acute and emergency care
- ☐ Managing chronic health conditions
- ☐ Providing service in lunchroom
- ☐ Assist with disciplinary actions for students
- ☐ Care coordination
- ☐ Family engagement
- ☐ Health Screening

Putting It All Together

DEBRIEF

Khloe was diagnosed with myopia. Myopia (nearsightedness) describes the condition where a person can see objects that are near but have trouble seeing objects at a distance. This was demonstrated by her Snellen eye chart measurement of 20/40.

Visual health can have a great influence on students' academic performance. An interprofessional care team of nurses, allied health professionals, and physicians must maintain a collaborative and communicative environment to achieve positive patient outcomes. In the case of Khloe, the school nurse recognized a potential concern with Khloe and referred her to the appropriate source for a comprehensive eye exam resulting in corrective lenses. Visual health can have a great influence on students' academic performance. An interprofessional care team of nurses, allied health professionals, and physicians must maintain a collaborative and communicative environment to achieve positive patient outcomes. In the case of Khloe, the school nurse recognized a potential concern with Khloe and referred her to the appropriate source for a comprehensive eye exam resulting in corrective lenses.

What Do You Think About?

1. Describe the role of the school nurse.
2. How is the Snellen Vision chart interpreted. Practice with a nursing student peer.
3. Describe how poor vision can adversely affect a child's academic performance.

RECOGNIZING SOCIAL DETERMINANTS OF HEALTH (SDOH)

Health Care Access and Quality is an important part of school nurses' referral network. By connecting students to health insurance and community resources, the parents, school staff, and community can work together to help meet the healthcare needs of students with chronic health conditions and those for whom the nurse's assessment in the school requires further evaluation (CDC, 2021). The American Association of Colleges of Nursing (AACN) established a cooperative agreement titled *Academic Partnerships to Improve Health* (APIH) with the CDC. APIH focuses on improving the health of individuals and communities through alliances among academic associations and CDC. The APIH drives the improvement of health outcomes by:

- Working within the educational systems for nursing, public health, and medical students to enhance teaching of population health concepts.
- Aligning academic approaches (curricula, teaching materials, or methods) and field experiences with ground-level public health priorities and practice needs.
- Fostering inter-professional collaboration and learning in health professional education.
- Strengthening academia's linkages to public health practice.
- Providing opportunities for hands-on experience for students working with communities and public health partners (AACN, 2023).

Recognition of the importance of population health is essential to decrease health disparities and improve the health of our nation.

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