**RNSG 1170 & 2371**

**Concept-Based Transition to Professional Nursing Practice**

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| **Concept- GAS EXCHANGE**  |
| **Concept Definition**The process by which oxygen is transported to cells and carbon dioxide is transported from cells. |
| **Exemplars**AsthmaChronic Obstructive Pulmonary Disease (COPD)Pneumonia-AspirationRespiratory Syncytial Virus (RSV)/Bronchiolitis |
| **Objectives**1. Explain the concept of gas exchange (including definition, antecedents, and attributes).
2. Analyze conditions which place a patient at risk for gas exchange imbalance.
3. Identify when gas exchange imbalance (negative consequence) is developing or has developed.
4. Apply the nursing process (including collaborative interventions) for individuals experiencing gas exchange imbalance.
5. Explain the correlation between *Asthma, Chronic Obstructive Pulmonary Disease*

*(COPD), Pneumonia-Aspiration,* and *RSV/Bronchiolitis* to the concept of Gas Exchange (including compromised antecedents, deficit measurement in attributes, a list of negative consequences, and the interrelated concepts which may be involved).1. Identify conditions that place an individual at risk for imbalance leading to a

compromised concept(s) resulting in *Asthma, Chronic Obstructive Pulmonary Disease (COPD), Pneumonia-Aspiration,* and *RSV/Bronchiolitis*.1. Apply the nursing process with collaborative interventions for individuals

experiencing *Asthma, Chronic Obstructive Pulmonary Disease (COPD), Pneumonia-Aspiration,* and *RSV/Bronchiolitis.* |
| **Concept Analysis Diagram**Note: Diagram is on separate page.Explanation of Gas Exchange Diagram:This Gas Exchange concept diagram shows the antecedents (conditional events) that must occur before positive outcomes of Gas Exchange can occur. The attributes show which factors make up adequate Gas Exchange. If adequate Gas Exchange occurs, then the patient will have positive outcomes. If inadequate Gas Exchange occurs, then the patient will have negative outcomes. Whether positive or negative, the interrelated concepts have an impact on the outcomes depending on the individual patient conditions. Without the influence of adequate circulation, oxygen carrying capacity, and the process of ventilation, which are all critical sub-concepts, Gas Exchange will be impaired.The nursing care is directed toward the attributes and the antecedents for a normal healthy outcome of the concept of Gas Exchange. |
| **Assignments****Prior to class:** 1. Review definitions of inter-rated concepts on concept analysis diagram. 2. Review concept analysis diagram. 3. Review anatomy and physiology of the respiratory system. 4. Assigned reading:* Berman, A. & Snyder, S. (2012). *Kozier & Erb’s Fundamentals of Nursing*.

 Boston: Pearson. * Chapter 50: Oxygenation
* Giddens, J.F. (2013). *Concepts for nursing practice.* St. Louis. MO: Mosby

 Elsevier.* Chapter 16: Concept Gas Exchange
* Lewis, S.L., Heitkemper, M.M., Dirksen, S.R., O’Brien, P.G., & Bucher, L.

 (2011). *Medical surgical nursing* (8th ed). St. Louis: Mosby Elsevier.* Chapter 26: Nursing Assessment of the Respiratory System
* Chapter 28: Lower Respiratory Problems; Pneumonia; pg. 546-553.
* Chapter 29: Obstructive Pulmonary Diseases; pg. 587-631
* McKinney, E, James, S., Murray, S., Nelson, K., & Ashwill, J. (2013).

 *Maternal-child nursing(4th ed)*. St. Louis: Elsevier Saunders.* Chapter 45: Children with a Respiratory Alteration; pg. 1165-1171.

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| 5. Internet resources to review:* The Respiratory System

 <http://mcom.alexanderstreet.com.proxy.tvcc.edu:2048/view/2063520>* Cardiovascular, Respiratory and musculoskeletal systems <http://mcom.alexanderstreet.com.proxy.tvcc.edu:2048/view/1941085>
* Normal Breath Sounds

<http://mcom.alexanderstreet.com.proxy.tvcc.edu:2048/view/1772724> * Assessment of Respiratory Distress in the Pediatric Patient

<http://mcom.alexanderstreet.com.proxy.tvcc.edu:2048/view/1665661>* Respiratory System Song

<http://www.youtube.com/watch?v=p4zOXOM6wgE> |

 6. Review the following Nursing Diagnoses *Asthma** Ineffective airway clearance
* Ineffective breathing pattern
* Impaired gas exchange
* Activity intolerance
* Anxiety
* Ineffective Therapeutic Regimen Management

 *Chronic Obstructive Pulmonary Disease (COPD)** Ineffective airway clearance
* Ineffective breathing pattern
* Impaired gas exchange
* Activity intolerance
* Anxiety
* Ineffective Therapeutic Regimen Management
* Ineffective coping
* Imbalanced nutrition

 *Pneumonia-Aspiration** Ineffective airway clearance
* Ineffective breathing pattern
* Impaired gas exchange
* Inadequate tissue perfusion
* Activity intolerance
* Altered immunity
* Impaired swallowing
* Impaired nutrition

 *SV/Bronchiolitis** Ineffective airway clearance
* Ineffective breathing pattern
* Impaired gas exchange
* Inadequate tissue perfusion
* Ineffective coping
* Imbalanced nutrition
* Deficient fluid volume

**Concept Content Outline:**Concept: **Gas Exchange**Sub Concepts: Inhalation and Exhalation Oxygen carrying capacity CirculationRisk Factors: Modifiable**:**Non-Modifiable: Age Additional RisksAssessment: Comprehensive history Physical assessment Cultural, behavioral, social assessment Physical and psychological clinical manifestations Diagnostic testsPositive Outcomes:  Eupnea Age appropriate mobility Capillary refill <2 seconds Age appropriate response to environment  Negative Outcomes: Physiological PsychologicalClinical Management: Nursing interventions Collaborative interventions Pharmacological therapy Non Pharmacological therapy Diagnostic studiesExemplars: * *Asthma*
* Pathophysiology
* Risks Factors
* Clinical Manifestations
* Clinical Assessment
* Pharmacologic Therapy
* Nursing Interventions
* *Chronic Obstructive Pulmonary Disease (COPD)*
* Pathology
* Risk factors
* Clinical Assessment
* Clinical Manifestations
* Nursing Interventions
* Pharmacologic Therapy
* *Pneumonia-Aspiration*
* Pathology
* Risk factors
* Clinical Assessment
* Clinical Manifestations
* Nursing Interventions
* Pharmacologic Therapy
* *RSV/Bronchiolitis*
* Pathophysiology
* Risks Factors
* Clinical Manifestations
* Clinical Assessment
* Pharmacologic Therapy
* Nursing Interventions
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