

Covenant School of Nursing
Instructional Module 1 Learning Guide
Topic: Gas Exchange and Oxygen Devices

Learning Goals/Outcomes

Upon completion of this lesson, you will be able to:

- Discuss hypoxemia/hypoxia and poor perfusion
- Recognize the impact of gas exchange and identify clinical manifestations of impaired gas exchange
- Discuss care strategies to assist the patient with impaired gas exchange
- Demonstrate the use of various oxygen therapy modalities as they relate to respiratory care in a simulation setting.
- Review options to improve oxygenation.
- Teach about oxygen policies and oxygen safety.

Pre-Class Preparation

Required:

- Review: Gas Exchange and Oxygen Devices PowerPoint prior to class attendance

- Read:
Potter & Perry, Fundamentals of Nursing (10th ed.): Ch 41, Read Respiratory physiology, Factors affecting oxygenation, alterations in respiratory functioning, Nursing knowledge base, Critical thinking, Nursing process, Review figure 41-8 and 41-6. Under Acute Care read Dyspnea management, Airway management, Mobilization of pulmonary secretions, Hydration, Humidification, Nebulization, and Coughing and deep-breathing techniques. Also read Maintenance and promotion of lung expansion: ambulation, positioning, and incentive spirometry. Review Box 41-9 and Table 41-7.

Lewis, Medical-Surgical Nursing (11th ed.): Ch 28, table 28.19 pp. 568-569, Nasal Cannula, Simple Face Mask, Partial and Non-Rebreather Masks, and Venturi Mask

- **Complete: HESI Essentials** – Applying a Nasal Cannula or Face Mask – Read all sections and complete quizzes for self-learning.
An average score of 80% on the test included in the activities is required.
Failure to complete the assignments by the due date may result in an absence – review your syllabus

Learning Activities

Classroom Activities:

- Discuss patients with hypoxia and/or inadequate perfusion & determine the appropriate oxygen device/therapy needed
- Pass around nasal cannula, venturi mask with adapters, non-rebreather mask

Laboratory/Clinical Activities:

- Hands-on use of various oxygenation modalities
- Practice using different oxygen devices in Simulation and teach oxygen therapy with nasal cannula to a patient in the clinical setting

Out-of-class activities:

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| See Required HESI Assignment above | |
| Computer Assisted Activities: | |
| <ul style="list-style-type: none"> None | |
| Evaluation Methods | |
| <ul style="list-style-type: none"> Mock CPE/Skills Practice & clinical performance based on criteria in Professional Nursing Interventions Instructions for IM 1 Unit Exam | |
| Texas DECs | QSEN Competencies |
| Knowledge: II.A.1.a,4; 1B,5,7a,b,c; 2a, b., 3; II.B.2, 4, 5, 6, 7, 8, 11, 12; II.C,2a, 3, 4b, 5, 6, 7, 8; II.D. 1a, 1b, 1c, 3b, 4c,5a; II.E, 1a, 1b, 2, 4a,4b, 5, 6b, 12, 13; II.F, 2; IIG, 2a, 2b, 3a, 3b; IIIC 2a; IV.C, 1, 3, 5, 8; IVE 3 Clinical Judgment: I.A.1, 2, 3a, 3b, I.B.2.a, 2.b, 3.a, 3.b, 3.c, 4.a, 4.b, 5.a, 5.c, 6.a, 6.b, 6.c,8; II.A, 1, 2.a, 2.b, 3, 4; II.B, 1, 2, 3.a, 3.b, 4, 5, 6, 7, 8, 9, II.C.1, 2, 3.a, 4, 5, 6, 7; II.D.1, 2.a, 2.c, 2.d, 3.a, 3.b,3.c; II.E.1, 2.a, 2.b, 2.c, 3.b, 4, 5.a, 6.a, 6.c, 6.d, 9, 10, 11, 12.b; II.F.1.a, 1.b, 1.c, 2.a, 2.b, 5.a, 5.b; II.G.1,2a, 2b, 3, 4, 5a, 5b, 6, 7; II.H.6; III.A., 2, 3, 4, 5a; III.B.1, 2, 3.a, 3.b, 3.c, 4, 5, 8, 9; III.C.2.a, 2.b, III.D.1, 2, 3; III.E.1, 3; III.F.1; IV.A.1, IV.B.1.a, 2; IV.C.1.a, 2.b; IV.D.1.b, 3.b, IV.E.1.b, 1.c, 2.b, 2.c, 4 | Patient-Centered Care, Teamwork and Collaboration, Evidence-Based Practice, Safety |
| Graduate Competencies / Student Learning Outcomes | NCLEX Test Plan |
| 1,2,5,7,8 | Safe & Effective Care Environment: Safety & Infection Control; Safe use of equipment Physiological Integrity: Basic Care & Comfort; Assistive Devices Reduction of Risk Potential; System Specific Assessments |
| Concepts | Faculty |
| Clinical judgment; Communication; Patient Education; Professionalism; Evidence-Based Practice; Patient-Centered Care; Safety; Gas Exchange; Perfusion | Julie Wolfe, MSN, RN, CNE |
| Date originated: 9/9/15 (IM2) | Revision Dates: 4/7/16, 1/24/22 |
| IM 1 Learning Guide Topic: Oxygenation cont'd | |
| CSON Learning Guide (adopted 5-2015 by Faculty vote) - adapted from Smith, R. M. Conquering the Content. San Francisco: Jossey-Bass, 2008. | |