

COLLEGEWIDE COURSE OUTLINE OF RECORD

RESP 102, ADVANCED ASSESSMENT AND CARE OF A CARDIOPULMONARY PATIENT

COURSE TITLE: Advanced Assessment and Care of a Cardiopulmonary Patient

COURSE NUMBER: RESP 102

PREREQUISITES: RESP 101 Assessment and Caring for a Respiratory Care Patient

SCHOOL: Health Sciences

PROGRAM: Respiratory Therapy

CREDIT HOURS: 3

CONTACT HOURS: Lecture: 2 Lab: 2

DATE OF LAST REVISION: Fall, 2019

EFFECTIVE DATE OF THIS REVISION: Spring, 2020

CATALOG DESCRIPTION: Presents respiratory pharmacology, applying concepts to the nervous system and its receptors. Students will be taught pulmonary function testing screening techniques, pulmonary mechanics, 12-Lead EKGs, advanced lung expansion techniques, and bronchial hygiene therapies. An introduction to non-invasive ventilation (NPPV), oxygenation (CPAP) and beside capnography will also be done. Students will perform tracheostomy care and arterial blood gas collection. Assembly and troubleshooting respiratory equipment will be required.

MAJOR COURSE LEARNING OBJECTIVES FROM 2020 NBRC MATRIX: Upon successful completion of this course the student will be expected to:

1. Retained knowledge, skills, and competency from RESP 101 Assessment and Caring for a Respiratory Care Patient.
2. Evaluate data in the patient record:
 - a. Lines, drains and airways (artificial airways)
 - b. Laboratory results (CBC, electrolytes, coagulation studies, Sputum C&S)
 - c. Blood gas analysis and/or hemoximetry (co-oximetry) results
 - d. PFT results (spirometry, lung volumes, DLCO)
 - e. Trends in monitoring results (pulmonary mechanics and capnography)
3. Perform clinical assessment by auscultation to obtain heart sounds and rhythm.
4. Perform procedure to gather clinical information to include indications, hazards, contraindications and equipment gathering:
 - a. 12 lead ECG
 - b. Noninvasive monitoring (capnography)
 - c. Mechanics of spontaneous ventilation (VT, minute volume, maximal inspiratory pressure and vital capacity)
 - d. Blood gas sample collection
 - e. Cuff management
 - f. Spirometry outside or inside a pulmonary function laboratory
 - g. Test of respiratory muscle strength (MIP/MEP)
5. Evaluate procedure results:

- a. 12 lead ECG
 - b. Noninvasive monitoring (capnography)
 - c. Mechanics of spontaneous ventilation (VT, minute volume, maximal inspiratory pressure and vital capacity)
 - d. Blood gas sample collection
 - e. Cuff management
 - f. Spirometry outside or inside a pulmonary function laboratory
 - g. Test of respiratory muscle strength (MIP/MEP)
6. Recommend diagnostic procedures:
 - a. Pulmonary function testing
 - b. Noninvasive monitoring (capnography)
 - c. Blood gas and/or hemoximetry (co-oximetry)
 - d. ECG
 7. Assemble and troubleshoot equipment:
 - a. CPAP/NPPV with patient interfaces
 - b. Patient breathing devices
 - c. Hyperinflation devices
 - d. Secretion clearance devices
 - e. Portable spirometer
 - f. Noninvasive monitoring devices (capnometer)
 8. Perform quality control procedures:
 - a. Spirometry results
 - b. Lung volume results
 - c. Noninvasive monitors
 9. Maintain a patent airway including the care of artificial airways:
 - a. Proper positioning of a patient
 - b. Establishes and manages a patient's airway (Tracheostomy tube, laryngectomy tube, exchanging artificial airways)
 10. Performs airway clearance and lung expansion:
 - a. Postural drainage, percussion, or vibration
 - b. Mechanical devices (high frequency chest wall oscillation, intrapulmonary percussive ventilation, vibratory PEP, insufflation/exsufflation).
 - c. Hyperinflation therapy
 11. Support oxygenation and ventilation:
 - a. Initiating and adjusting oxygen therapy
 - b. Minimizing hypoxemia (patient positioning, secretion removal)
 - c. Initiating and adjusting mask or nasal CPAP and noninvasive through mechanical ventilator settings
 12. Administer aerosolized medications to include consideration of indications, hazards and contraindications:
 - a. Bronchodilators
 - b. Mucolytics/proteolytics
 - c. Steroids
 13. Ensure modifications are made to the respiratory care plan modalities (pharmacology, lung expansion, bronchial hygiene, and artificial airways)
 - a. Treatment termination for life threatening adverse events

- b. Recommend starting treatment based on patient response
 - c. Discontinuing treatment based on patient response
- 14. Make recommendations for changes based on patient assessment:
 - a. Patient position
 - b. Airway clearance
 - c. Hyperinflation
- 15. Make recommendations for pharmacological interventions based on patient assessment:
 - a. Bronchodilators
 - b. Anti-inflammatory
 - c. Mucolytics and proteolytics
 - d. Changes to drug, dosage, administration frequency, mode, or concentration
- 16. Provide respiratory care in high-risk situations for cardiopulmonary emergencies (e.g., rapid response team, obstructed/lost airway, etc...)
- 17. Assist a physician/provided in performing tracheostomy.

COURSE CONTENT: Topical areas of study include –

Review aerosol therapy

Pharmacology

Hyperinflation Therapy (IPPB, PEP, PAP)

CPAP, NPPV

Arterial Blood Gas

Bronchial hygiene therapy (CPT, Flutter, HFCWO, PAP, Acapella, percussors and Autogenic Drainage)

Introduction to pulmonary function testing and quality control

Tracheostomy tube change

Capnography

Assist Physician with tracheostomy procedure

12-Lead EKG

Evaluations

Procedures:

1. Hyperinflation
 - a. EzPAP
 - b. CPAP
2. Bronchial Hygiene
 - a. CPT
 - b. Vibratory Pep
 - c. MetaNeb (as determined by campus location)
3. Spirometry
4. Weaning Parameters
5. 12 Lead EKG
6. Radial Artery Blood Gas Puncture
7. Tracheostomy Tube Change
8. CPAP/NPPV
9. Sputum inductions

10. Capnography (nasal)
TOTAL PROCEDURES: 13

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The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement.

Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

ATTENDANCE:

Students are expected to attend and participate regularly in class meetings, online learning activities and other activities assigned as a part of a course of instruction. Faculty are required to report student participation in compliance with institutional policies and federal financial aid guidelines. Faculty and staff shall be sensitive to students' religious beliefs and observances, including an expectation that instructors make reasonable arrangements when a student must miss an exam or other academic exercise due to their religious observance. When notified in advance, and when possible, faculty will make allowances for students to make up missed work.

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If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classroom.

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If students write or speak about having survived sexual violence, including rape, sexual assault, dating violence, domestic violence, or stalking, federal law and Ivy Tech policies require that instructors share this information with the Campus Title IX Coordinator. The Campus Title IX Coordinator will contact students to let them know about accommodations and support services at the College and in the community as well as options for holding accountable the person who harmed them. When contacted, students are not required to speak with the Campus Title IX Coordinator.

If students do not want the Title IX Coordinator notified, instead of disclosing this information to their instructor, students can speak confidentially with certain individuals at the College or in the community. A list of these individuals can be found at <https://www.ivytech.edu/prevent-sexual-violence/index.html> under Confidential Employees and/or Community Resources.