COLLEGEWIDE COURSE OUTLINE OF RECORD

RESP 205, ADVANCED RESPIRATORY CARE AND COMPREHENSIVE REVIEW

COURSE TITLE: Advanced Respiratory Care and Comprehensive Review
COURSE NUMBER: RESP 205
PREREQUISITES: RESP 105, Cardiopulmonary Pathophysiology, and RESP 201, Advanced Concepts in Cardiopulmonary Diagnostic Procedures and Program Chair Approval
SCHOOL: Health Sciences
PROGRAM: Respiratory Therapy
CREDIT HOURS: 3
CONTACT HOURS: Lecture: 3
DATE OF LAST REVISION: Fall 2020
EFFECTIVE DATE OF THIS REVISION: Spring, 2021

CATALOG DESCRIPTION: Applies concepts taught throughout the program to be used on their national board credentialing examinations (Therapist Multiple Choice and Clinical Simulation). Patient conditions will be discussed in regards to etiology, symptomatology, diagnosis, therapeutics, and prognosis of disease conditions related to respiratory care.

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

1. Evaluate data in the patient record
    a. Patient history (history of present illness, orders, medication reconciliation, progress notes, DNR status/advance directors, and social, family, and medical history)
    b. Physical exam relative to the cardiopulmonary system (vitals, physical findings)
    c. Lab data (CBC, electrolytes, coagulation, C&S, Sputum, cardiac biomarkers)
    d. Blood gas analysis and/or hemoximetry (co-oximetry)
    e. PFT results (spirometry, lung volumes, DLCO)
    f. Imaging studies (chest radiographs, CT, PET, V/Q, Ultrasound/Echocardiography)
    g. Maternal and perinatal/neonatal history (Apgar, gestational age, LS ratio)
    h. Trends in monitoring:
        i. Fluid balance
        ii. Vital signs
        iii. Ventilation liberation parameters
        iv. Pulmonary compliance, airway resistance, work of breathing
    i. Cardiac evaluation/monitoring results (ECG and hemodynamic parameters)
    j. Determination of a patient's pathophysiological state
2. Perform clinical assessment by interviewing to assess environmental exposures
3. Perform clinical assessment by inspection:
    a. General appearance
    b. Characteristics of the airway (patency, Mallampati, tracheal shift)
    c. Cough, sputum amount, and character
    d. Status of a neonate (APGAR, gestational age)

e. Skin integrity (pressure ulcers, stoma site)

4. Perform clinical assessment by palpating
    a. Pulse, rhythm and intensity
    b. Accessory muscle activity
    c. Asymmetrical chest movements, tactile fremitus, crepitus, tenderness, tactile rhonchi, and tracheal deviation
5. Perform clinical assessment by performing diagnostic chest percussion
6. Perform clinical assessment by auscultation to assess:
    a. Breath sounds,
    b. Heart rate and rhythm
    c. Blood pressure
7. Perform clinical assessment by reviewing a chest radiograph to assess:
    a. Quality of imaging (patient position, penetration, lung inflation)
    b. Presence and position of airways, lines, and drains
    c. Presence of foreign bodies
    d. Heart size and position
    e. Changes in cardiopulmonary abnormalities (pneumothorax, pleural effusion, consolidation, pulmonary edema, pulmonary artery size)
    f. Presence or change in diaphragm, mediastinum or trachea
8. Perform procedures to gather clinical information:
    a. 12 lead ECG
    b. Mechanics of spontaneous respiration (tidal volume, minute volume, MIP, and vital capacity)
    c. Blood gas collection
    d. Blood gas analysis or hemoximetry (co-oximetry)
    e. Hemodynamic monitoring
    f. Pulmonary compliance and airway resistance
    g. Plateau pressures
    h. Spirometry inside or outside a pulmonary function laboratory
    i. Lung volumes inside of a pulmonary function laboratory
    j. Test of respiratory muscle strength (MIP, NIF)
9. Evaluate procedure results:
    a. 12 lead ECG
    b. Mechanics of spontaneous respiration (tidal volume, minute volume, MIP, and vital capacity)
    c. Blood gas analysis or hemoximetry
    d. Hemodynamic monitoring
    e. Pulmonary compliance and airway resistance
    f. Cuff management (tracheal and laryngeal cuff pressure and/or volume)
    g. Spirometry inside or outside a pulmonary function laboratory
    h. Lung volumes inside of a pulmonary function laboratory
10. Recommend diagnostic procedures:
    a. Laboratory tests (Electrolytes, CBC, coagulation studies, sputum culture, C&S, cardiac biomarkers)
    b. Imaging studies
    c. Blood gas or hemoximetry (co-oximetry)

d. ECG
e. Hemodynamic monitoring

11. Assemble and troubleshoot equipment
    a. Medical gas delivery interfaces (masks, cannula, heated high flow nasal cannula)
    b. CPAP/NPPV with patient interfaces
    c. Mechanical ventilators
    d. Artificial airways
    e. Blood analyzers (hemoximetry (co-oximetry), blood gas, point of care)
12. Supports oxygenation and ventilation
    a. Initiates and adjusts continuous mechanical ventilation
        i. Continuous mechanical ventilation
        ii. Noninvasive ventilation
    b. Utilizes ventilator graphics (waveforms, scales)
    c. Liberates patient from mechanical ventilation
13. Ensures modification in respiratory care plan by terminating therapy based on life threatening responses
14. Ensures modification in the respiratory care plan by recommending:
    a. Starting therapy based on patient response
    b. Treatment of pneumothorax
    c. Liberating from mechanical ventilation
    d. Extubation
    e. Discontinuing therapy based on patient responses
    f. Changing patient position
    g. Changing oxygen therapy
    h. Changing humidification
    i. Changes airway clearance techniques
    j. Hyperinflation
    k. Changes mechanical ventilation parameters and settings
15. Ensure modifications are made to the care plan by recommending pharmacological interventions
    a. Bronchodilators
    b. Anti-inflammatory drugs
    c. Mucolytics
    d. Proteolytics
    e. Cardiovascular drugs,
    f. Surfactants
    g. Changes drugs, dosages, administration frequency, mode, or concentration
16. Utilize evidence-based medical principles or clinical practice guidelines in the determination of pathophysiological state, treatment of disease conditions, and recommending changes to care plan
17. Successfully complete Therapist Multiple Choice Assessment Examination with a cut score of 66%
18. Must complete Clinical Simulation Self-Assessment Examination

REMEDIATION:

All exams must be completed as scheduled. If a student fails to meet the cut score, they must review their individual exam with faculty members to determine the areas of weakness. Students will be allowed one additional week of study, then they must re-attempt the self-assessment exam. Students are responsible for all expenses during the re-attempts. This process will be continued until the student meets the cut score for each examination.

COURSE CONTENT: Topical areas of study include –

Selected Respiratory Care Review
1. Respiratory Pharmacology
2. Mechanical Ventilation
3. Infection Control
4. PFTs

Cardiopulmonary Pathology
Evaluations (Therapist Multiple Choice Exam, Clinical Simulation)

HOW TO ACCESS THE IVY TECH COMMUNITY COLLEGE LIBRARY:

The Ivy Tech Library is available to students' on- and off-campus, offering full text journals and books and other resources essential for course assignments. Go to http://www.ivytech.edu/library/ and choose the link for your campus.

ACADEMIC HONESTY STATEMENT:

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.

COPYRIGHT STATEMENT:

Students shall adhere to the laws governing the use of copyrighted materials. They must ensure that their activities comply with fair use and in no way infringe on the copyright or other proprietary rights of others and that the materials used and developed at Ivy Tech Community College contain nothing unlawful, unethical, or libelous and do not constitute any violation of any right of privacy.

ADA STATEMENT:

Ivy Tech Community College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services.

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

TITLE IX STATEMENT:

Ivy Tech Community College is committed to providing all members of the College community with a learning and work environment free from sexual harassment and assault. Ivy Tech students have options for getting help if they have experienced sexual assault, relationship violence, sexual harassment or stalking. This information can be found at https://www.ivytech.edu/prevent-sexual-violence/index.html.

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.