

RT201: Clinical Medicine I Syllabus

Course Information:

RT201: **Clinical Medicine I**
Credit Hours: **10.00**
Prerequisites: **Successful completion of RT101**
 (Introduction to Applied Respiratory Therapeutics)

Required Texts:

The following is an alphabetical list of some of the abbreviations used in the Reading Syllabus

CARC -	Clinical Assessment in Respiratory Care 5 th Edition
Compman -	Lab Competency Manual 4 th Edition
White -	Respiratory Care Equipment 4 th Edition
Egans 9th Edition -	Fundamentals of Respiratory Care

Course Description:

As a Future Respiratory Therapist, you will learn to acquire, perform, and sharpen your critical patient assessment skills. These skills are what make us a vital part of the patient care continuum and they include but are not limited to: assessing the need for medical gas therapy, bronchodilator therapy, hyperinflation therapy, emergency airway intervention and management (pulmonary hygiene, maintenance and management of an artificial airway).

You will explore the physiology of blood gases and learn the techniques for obtaining, analyzing and interpreting arterial blood samples, correctly identify acid-base disorders and to safely make appropriate ventilator parameter changes. You will learn how to assess and provide appropriate medical intervention on a patient as they present to you on the basis of their symptoms, chief complaints and past medical history. You will know the indications, contraindications and hazards of the various respiratory treatment modalities that we provide.

You will be able to recognize common side effects and life threatening adverse reactions and possess ability to respond to these situations accordingly and effectively. You will examine the etiology of respiratory diseases, learn to identify common pathogenic organisms and explore various isolations and sterilization techniques.

As a Respiratory Therapist, you will study the various types of mechanical ventilators and learn identification and need of continuous mechanical ventilation. A large portion of this course will be spent in a clinical externship practicing the skills related to what has been learned to identify, perform and assess the results of various diagnostic tests.

John Ynamí, RRT

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Course Objectives:

Isolation and Sterilization

The Future Respiratory Therapist will be able to:

1. Define the following terms:
 - a. Asepsis
 - b. Sterile
 - c. Nosocomial
 - d. Cross-contamination
 - e. Infection
 - f. Microorganism
 - g. Pathogen
2. Explain the following mechanisms of microorganism transmission:
 - a. Direct Contact
 - b. Airborne
 - c. Vehicle
 - d. Vector
3. Identify common gram + organisms
4. Identify common gram – organisms
5. Identify types of pathogens
6. List possible causes of disease
7. List predisposing factors of disease
8. Describe identification of bacteria by gram staining and acid-fast tests
9. Describe normal flora of the skin and respiratory tract
10. Differentiate between the following bacterial shapes:
 - a. Cocci
 - b. Bacilli
 - c. Spirilla
11. Differentiate between the cell wall structure of gram positive and gram negative bacteria
12. Describe the structural characteristics of viruses
13. Define the following terms:
 - a. Sterilization
 - b. Disinfection
 - c. Antisepsis
14. Differentiate between the following processing methods and how they kill microorganisms:
 - a. Steam autoclave
 - b. Pasteurization
 - c. Ethylene oxide
 - d. Glutaraldehyde
 - e. Quaternary ammonium compounds
 - f. Gamma radiation
15. Explain the purpose of a bacteriologic surveillance program
16. Explain the importance of hand washing and when it should be performed
17. Explain the purpose of gloving and gowning

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18. Understand the concept and purpose of Standard Precautions and Body Fluid Precautions:
 - a. Body fluids requiring precautions
 - b. Precaution measures recommended
 - c. Precautions to be taken when drawing blood
 - d. Safe practices of syringe handling
19. Explain the purpose and indication for each of the following types of isolation.
20. Describe the precautions and what procedures are required:
 - a. Strict
 - b. Contact
 - c. Enteric
 - d. Respiratory
 - e. Tuberculosis Isolation
 - f. Drainage/Secretions
 - g. Blood/Body Fluid
21. Explain what procedures may be used in the care of severely compromised patients and burn patients.

Patient Assessment, Observation and Medical History

The Future Respiratory Therapist will be able to clinically:

1. Assess and relate by observation:
 - a. General appearance
 - b. Chest shape
 - c. Accessory muscle use
 - d. Symmetrical and asymmetrical chest movement
 - e. Intracostal and sternal retractions
 - f. Breathing patterns
 - g. Cyanosis
 - h. Flushing
 - i. Diaphoresis
 - j. Peripheral edema
 - k. Clubbing of the digits
 - l. Atrophy
 - m. Venous return
 - n. Capillary refill
 - o. Character of cough
 - p. Sputum production
2. Assess and relate by palpation:
 - a. Pulse (heart rate, rhythm and force)
 - b. Symmetrical and asymmetrical chest movement
 - c. Rhonchi
 - d. Tactile fremitus
 - e. Tracheal deviation
 - f. Crepitations
 - g. Tenderness

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3. Assess and relate by percussion:
 - a. Hyperresonance/tympany
 - b. Hyporesonance/dull
 - c. Diaphragmatic excursion
4. Assess by chest auscultation (Breath Sounds)
Listen To Lung Sounds CD
5. Assess and relate by interview:
 - a. Orthopnea
 - b. Dyspnea
 - c. Cooperation
 - d. Orientation
6. Identify a patient's chief complaint from interview and chart
7. Identify a patient's chief complaint from interview and chart
8. Obtain family, social and occupational histories
9. Review past medical history
10. Review a chest X-ray
11. Determine degree of hypoxemia

Airway Management and Secretion Removal

The Future Respiratory Therapist will be able to:

1. Describe the components of an effective cough
2. Describe indications for suctioning
3. Describe equipment necessary for suctioning
4. Review procedures for suctioning
5. Determine hazards of suctioning

Emergency Airways and Artificial Airways

The Future Respiratory Therapist will be able to:

1. List indications, hazards and physiological effects of oral and nasal intubation and tracheostomy
2. Describe methods of preventing hazards
3. Describe cuff management
4. Describe use of naso and oropharyngeal airways

ABG Puncture and Procedure

The Future Respiratory Therapist will be able to:

1. Describe equipment needed for ABG puncture
2. Describe puncture procedure
3. List complications and methods to minimize hazards
4. Prepare equipment properly
5. List sources of sampling error and erroneous results
6. Describe arterial and pulmonary artery lines
7. Describe venipuncture
8. Describe capillary sampling

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Physiological Causes of ABG's

The Future Respiratory Therapist will be able to:

1. Give disease cause for respiratory acidemia, respiratory alkalemia, metabolic acidemia and metabolic alkalemia.
2. Discuss effects of VA on respiratory alkalemia and acidemia
3. Recognize increased VA's effect to compensate for respiratory acidemia
4. Give possible causes, given ABG
5. Discuss electrolytes role in ABG changes and/or results

Classification of Ventilators

The Future Respiratory Therapist will be able to:

1. Classify various ventilator powering mechanisms, modes of ventilation, controls (cycling parameters), flow and pressure patterns, auxiliary maneuvers, alarms, limits and manipulation of ventilator parameters in order to manipulate, normalize and optimize arterial blood gas values. Ventilators that will be used includes but is not limited to:
 - a. Bear 1 and Bear 3
 - b. Puritan Bennett 7200
 - c. Servo 900, 300 and Servo I
 - d. Vision BiPAP
 - e. Respiroics CPAP/BiPAP machine
2. Explain what each of the 12 points of classification indicate

Midterm Concepts Advancement Week

The student will review all materials and objectives from RTA101 and RTA201

***** NOTE *****

Each RT Module builds on top of each other in order prepare you for the National Licensing Board Exams and your future career as Respiratory Therapists. It is for this reason that all my exams are comprehensive, they are based on current lessons all they way back to RT 101.

Schedule days, times and lessons are all subject to change according to class progress.