NBRC Therapist Multiple Choice Detailed Content Outline Comparison with Proposed Curriculum (Program #)	List Course Number(s)
I. PATIENT DATA EVALUATION AND RECOMMENDATIONS	
A. Evaluate Data in the Patient Record	
1. Patient history e.g., • admission data • orders • medications • progress notes • DNR status / advance directives • social history	
2. Physical examination relative to the cardiopulmonary system	
3. Drainage and access devices e.g., • chest tube • artificial airway	
4. Laboratory results e.g., • CBC • electrolytes • coagulation studies • culture and sensitivities • sputum Gram stain • cardiac enzymes	
5. Blood gas analysis results	
6. Pulmonary function testing results	
7. 6-minute walk test results	
8. Cardiopulmonary stress testing results	
9. Imaging study results e.g., • chest radiograph • CT • ultrasonography • MRI • PET • ventilation / perfusion scan	
10. Maternal and perinatal / neonatal history e.g., • APGAR scores • gestational age • L / S ratio • social history	
11. Metabolic study results e.g., • O_2 consumption / CO_2 production • respiratory quotient • energy expenditure	
12. Sleep study results	
13. Trends in monitoring results	
a. fluid balance	
b. vital signs	
c. intracranial pressure	
d. weaning parameters	

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e. pulmonary compliance, airways resistance, work of breathing	
f. noninvasive e.g., • pulse oximetry • capnography • transcutaneous O_2 / CO_2	
14. Trends in cardiac monitoring results	
a. ECG	
b. hemodynamic parameters	
c. cardiac catheterization	
d. echocardiography	
B. Gather Clinical Information	
1. Interviewing a patient to assess	
a. level of consciousness and orientation, emotional state, and ability to cooperate	
b. level of pain	
c. presence of dyspnea, sputum production, and exercise tolerance	
d. smoking history	
e. environmental exposures	
f. activities of daily living	
g. learning needs, e.g., • literacy • culture • preferred learning style	
2. Performing inspection to assess	
a. general appearance	
b. characteristics of the airway, e.g., • patency	
c. cough, sputum amount and character	

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d. status of a neonate, e.g., • Apgar score • gestational age	
3. Palpating to assess	
a. pulse, rhythm, force	
b. accessory muscle activity	
c. asymmetrical chest movements, tactile fremitus, crepitus, tenderness, secretions in the airway, and tracheal deviation	
4. Performing diagnostic chest percussion	
5. Auscultating to assess	
a. breath sounds	
b. heart sounds and rhythm	
c. blood pressure	
6. Reviewing lateral neck radiographs	
7. Reviewing a chest radiograph to assess	
a. quality of imaging e.g., • patient positioning • penetration	
b. presence and position of tubes and catheters	
c. presence of foreign bodies	
d. heart size and position	
e. presence of, or change in	
(i) cardiopulmonary abnormalities e.g., • pneumothorax • pleural effusion • consolidation • pulmonary edema	
(ii) hemidiaphragms, mediastinum, or trachea	

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C. Perform Procedures to Gather Clinical Information	
1. 12-lead ECG	
2. Noninvasive monitoring, e.g., • pulse oximetry • capnography • transcutaneous	
3. Peak flow	
4. Tidal volume, minute volume, and vital capacity	
5. Screening spirometry	
6. Blood gas sample collection	
7. Blood gas analysis / hemoximetry	
8. 6-minute walk test	
9. Oxygen titration with exercise	
10. Cardiopulmonary calculations, e.g., • $P(A\text{-}a)O_2$ • V_D / V_T • P / F • oxygenation index	
11. Hemodynamic monitoring	
12. Pulmonary compliance and airways resistance	
13. Maximum inspiratory and expiratory pressures	
14. Plateau pressure	
15. Auto-PEEP determination	
16. Spontaneous breathing trial	
17. Apnea monitoring	
18. Overnight pulse oximetry	
19. CPAP / NPPV titration during sleep	
20. Tracheal tube cuff pressure and / or volume	

NBRC Therapist Multiple Choice Detailed Content Outline Comparison with Proposed Curriculum (Program #)	List Course Number(s)
21. Sputum induction	
22. Cardiopulmonary stress testing	
23. Pulmonary function testing	
D. Evaluate Procedure Results	
1. 12-lead ECG	
2. Noninvasive monitoring, e.g., • pulse oximetry • capnography • transcutaneous	
3. Peak flow	
4. Tidal volume, minute volume, and vital capacity	
5. Screening spirometry	
6. Blood gas sample collection	
7. 6-minute walk test	
8. Oxygen titration with exercise	
9. Cardiopulmonary calculations, e.g., • $P(A\text{-}a)O_2$ • V_D / V_T • P / F • oxygenation index	
10. Hemodynamic monitoring	
11. Pulmonary compliance and airways resistance	
12. Maximum inspiratory and expiratory pressures	
13. Plateau pressure	
14. Auto-PEEP determination	
15. Spontaneous breathing trial	
16. Apnea monitoring	
17. Overnight pulse oximetry	

NBRC Therapist Multiple Choice Detailed Content Outline Comparison with Proposed Curriculum (Program #)	List Course Number(s)
18. CPAP / NPPV titration during sleep	
19. Tracheal tube cuff pressure and / or volume	
20. Sputum induction	
21. Cardiopulmonary stress testing	
22. Pulmonary function testing	
E. Recommend Diagnostic Procedures	
1. Skin testing e.g., • TB • allergy	
2. Blood tests e.g., • electrolytes • CBC	
3. Imaging studies	
4. Bronchoscopy	
5. Bronchoalveolar lavage (BAL)	
6. Sputum Gram stain, culture and sensitivities	
7. Pulmonary function testing	
8. Noninvasive monitoring e.g., • pulse oximetry • capnography • transcutaneous	
9. Blood gas analysis	
10. ECG	
11. Exhaled gas analysis e.g., • CO_2 • CO • NO (F_ENO)	
12. Hemodynamic monitoring	
13. Sleep studies	
14. Thoracentesis	

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II. TROUBLESHOOTING AND QUALITY CONTROL OF EQUIPMENT AND INFECTION CONTROL	
A. Assemble and Troubleshoot Equipment	
1. Oxygen administration devices	
2. CPAP devices	
3. Humidifiers	
4. Nebulizers	
5. Metered-dose inhalers (MDI), spacers, and valved holding chambers	
6. Dry powder inhalers	
7. Resuscitation devices	
8. Mechanical ventilators	
9. Intubation equipment	
10. Artificial airways	
11. Suctioning equipment e.g., • regulator • canister • tubing • catheter	
12. Gas delivery, metering, and clinical analyzing devices e.g., • concentrator • liquid system • flow meter • regulator • gas cylinder • blender • air compressor	
13. Blood analyzer e.g., • hemoximetry • point-of-care • blood gas	
14. Patient breathing circuits	
15. Incentive breathing devices	
16. Airway clearance devices e.g., • high-frequency chest wall oscillation • vibratory PEP • intrapulmonary percussive ventilation • insufflation / exsufflation device	
17. Heliox delivery device	

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18. Nitric oxide (NO) delivery device	
19. Spirometers – hand-held and screening	
20. Pleural drainage devices	
21. Noninvasive monitoring devices e.g., • pulse oximeter • capnometer • transcutaneous	
22. Gas analyzers	
23. Bronchoscopes and light sources	
24. Hemodynamic monitoring devices	
a. pressure transducers	
b. catheters e.g., • arterial • pulmonary artery	
B. Ensure Infection Control	
1. Using high-level disinfection techniques	
2. Selection of appropriate agent and technique for surface disinfection	
3. Monitoring effectiveness of sterilization procedures	
4. Proper handling of biohazardous materials	
5. Adhere to infection control policies and procedures e.g., • Standard Precautions • isolation	
C. Perform Quality Control Procedures	
1. Gas analyzers	
2. Blood gas analyzers and hemoximeters	
3. Point-of-care analyzers	
4. Pulmonary function equipment	

NBRC Therapist Multiple Choice Detailed Content Outline Comparison with Proposed Curriculum (Program #)	List Course Number(s)
5. Mechanical ventilators	
6. Gas metering devices e.g., • flowmeter	
7. Noninvasive monitors e.g., • transcutaneous	
III. INITIATION AND MODIFICATION OF INTERVENTIONS	
A. Maintain a Patient Airway Including the Care of Artificial Airways	
1. Proper positioning of a patient	
2. Recognition of a difficult airway	
3. Establishing and managing a patient's airway	
a) nasopharyngeal airway	
b) oropharyngeal airway	
c) laryngeal mask airway	
d) esophageal-tracheal tubes / supraglottic airways e.g., • Combitube® • King®	
e) endotracheal tube	
f) tracheostomy tube	
g) laryngectomy tube	
h) speaking valves	
4. Performing tracheostomy care	
5. Exchanging artificial airways	
6. Maintaining adequate humidification	
7. Initiating protocols to prevent ventilator associated pneumonia (VAP)	

NBRC Therapist Multiple Choice Detailed Content Outline Comparison with Proposed Curriculum (Program #)	List Course Number(s)
8. Performing extubation	
B. Perform Airway Clearance and Lung Expansion Techniques	
1. Postural drainage, percussion, or vibration	
2. Suctioning e.g., • nasotracheal • oropharyngeal	
3. Mechanical devices e.g., • high-frequency chest wall oscillation • vibratory PEP • intrapulmonary percussive ventilation • insufflation / exsufflation device	
4. Assisted cough e.g., • huff • quad	
5. Hyperinflation e.g., • incentive spirometry • IPPB	
6. Inspiratory muscle training techniques	
C. Support Oxygenation and Ventilation	
1. Initiating and adjusting oxygen therapy e.g., • low-flow • high-flow	
2. Minimizing hypoxemia e.g., • patient positioning • suctioning	
3. Initiating and adjusting mask or nasal CPAP	
4. Initiating and adjusting mechanical ventilation settings	
a) continuous mechanical ventilation	
b) noninvasive ventilation	
c) high-frequency ventilation	
d) alarms	
5. Correcting patient-ventilator dyssynchrony	
6. Utilizing ventilator graphics e.g., • waveforms • scales	

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7. Performing lung recruitment maneuvers	
8. Liberating patient from mechanical ventilation (weaning)	
D. Administer Medications and Specialty Gases	
1. Aerosolized preparations e.g., • MDI • SVN	
2. Dry powder preparations	
3. Endotracheal instillation	
4. Specialty gases e.g., • heliox • NO	
E. Ensure Modifications are Made to the Respiratory Care Plan	
1. Treatment termination e.g., • life-threatening adverse event	
2. Recommendations	
a. starting treatment based on patient response	
b. treatment of pneumothorax	
c. adjustment of fluid balance	
d. adjustment of electrolyte therapy	
e. insertion or change of artificial airway	
f. liberating from mechanical ventilation	
g. extubation	
h. discontinuing treatment based on patient response	
3. Recommendations for changes	
a. patient position	

NBRC Therapist Multiple Choice Detailed Content Outline Comparison with Proposed Curriculum (Program #)	List Course Number(s)
b. oxygen therapy	
c. humidification	
d. airway clearance	
e. hyperinflation	
f. mechanical ventilation parameters and settings	
4. Recommendations for pharmacologic interventions	
a. pulmonary vasodilators e.g., • sildenafil • prostacyclin • inhaled NO	
b. bronchodilators	
c. anti-inflammatory drugs	
d. mucolytics and proteolytics	
e. cardiovascular drugs	
f. antimicrobials	
g. sedatives and hypnotics	
h. analgesics	
i. neuromuscular blocking agents	
j. diuretics	
k. surfactants	
l. vaccines	
m. changes to drug, dosage, or concentration	
F. Utilize Evidence-Based Medicine Principles	
1. Determination of a patient's pathophysiological state	

NBRC Therapist Multiple Choice Detailed Content Outline Comparison with Proposed Curriculum (Program #)	List Course Number(s)
2. Recommendations for changes in a therapeutic plan when indicated	
3. Application of evidence-based or clinical practice guidelines e.g., • ARDSNet • NAEPP	
G. Provide Respiratory Care Techniques in High-Risk Situations	
1. Emergency	
a. cardiopulmonary emergencies e.g., • cardiac arrest • tension pneumothorax • obstructed / lost airway	
b. disaster management	
c. medical emergency team (MET) / rapid response team	
2. Patient transport	
a. land / air between hospitals	
b. within a hospital	
H. Assist a Physician / Provider in Performing Procedures	
1. Intubation	
2. Bronchoscopy	
3. Thoracentesis	
4. Tracheostomy	
5. Chest tube insertion	
6. Insertion of arterial or venous catheters	
7. Moderate (conscious) sedation	
8. Cardioversion	
9. Cardiopulmonary exercise testing	
10. Withdrawal of life support	

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I. Initiate and Conduct Patient and Family Education	
1. Safety and infection control	
2. Home care and equipment	
3. Smoking cessation	
4. Pulmonary rehabilitation	
5. Disease management	
a. asthma	
b. COPD	
c. sleep disorders	