



الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

Critical Respiratory Care



سِرِّهِ مُحَمَّدٍ

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INTRODUCTION

The respiratory care (RC) profession in Saudi Arabia is over 40 years old, and its history can be traced back to the mid-1970s. The notion of incorporating the RC profession into the Saudi healthcare system was stimulated by a realization of the importance of respiratory therapy technicians being on the cardiac surgery team. In 1976, the first cardiac surgery was performed on a 13-year-old girl at the Armed Forces Hospital in Khamis, Mushait, by the Loma Linda University (LLU) heart team in collaboration with Saudi healthcare providers [1]. The LLU heart team consisted of 19 members and included cardiologists, cardiac surgeons, anesthetists, nurses, respiratory technicians, and perfusionists. One of the primary objectives of the LLU heart team was training their counterparts so that the cardiac service would continue after the LLU team had left.

The training was unstructured, and each Saudi trainee accompanied a mentor from the LLU heart team. Within this context, two American respiratory therapists (RTs) were responsible for training Saudi trainees, with basic nursing backgrounds, to prepare them to serve as RC technicians, which could be considered the country's first RC on-the-job training course. Later, some of those Saudi trainees were sent abroad to be formally trained as respiratory technicians. Table 1 is a chronology of the major events in the RC profession in Saudi Arabia.

Table 1. Chronology of the major events in the history of the respiratory care profession in Saudi Arabia

Year	Historical Event
1975	The First RC department is established at King Faisal Specialist Hospital & Research Center, Riyadh.
1987	Inauguration of an RC diploma program by Loma Linda University, School of Allied Health Professions, Extended Campus, Riyadh Military Hospital.
1988	Inauguration of the First National Diploma of Science in RC at Prince Sultan Military College of Health Sciences, Dhahran.
1999	Inauguration of the first bachelor of science program at RC at King Faisal University (renamed University of Dammam).
2002	Establishment of the Saudi Group of Respiratory Care, the first official professional organization for RC practitioners.
2004	Saudi Society for Respiratory Care (SSRC) officially established under the umbrella of the University of Dammam.
2005	Establishment of the Respiratory Care Scientific Committee under the Saudi Commission for Health Specialties (SCFHS).
2006	SSRC officially elects the first members of the society's Board of Directors.
2011	SSRC recognized by the American Association of Respiratory Care (AARC).

2012	Ministry of the Civil Service (MCS) approves adding the job title "respiratory therapist" to other job titles in the healthcare sector.
2013	Establishment of an RC Division under the Ministry of Health (MoH).
2013	Inauguration of a Fellowship in RC under the Saudi Commission for Health Specialties (SCFHS).
2015	SSRC signs a memorandum of agreement with The National Board for Respiratory Care (NBRC) to deliver the board examinations for the Saudi RC program graduates.

Currently, there are several RC programs offering bachelor degrees in RC science. On average, 350 RTs graduate from these programs annually.

Table 2. Respiratory Care programs

School Name	City	Degree	School Type	Year Initiated	Status
Prince Sultan Military College of Health Sciences	Dhahran	Diploma	Government	1988	Phased out 2007
		Bachelor		2007	Current
University of Imam Abdulrahman bin Faisal	Dammam	Bachelor	Government	1999	Current
Umm Alqura University	Makkah	Bachelor	Government	2016	Current
Battarjee Medical College	Jeddah	Bachelor	Private	2016	Current
King Abdulaziz University	Jeddah	Bachelor	Government	2018	Current
King Saudi University	Riyadh	Bachelor	Government	2011	Current
King Saud Bin Abdulaziz University	Riyadh	Bachelor	Government	2009	Current
	Jeddah	Bachelor		2014	Current
	AlHassa	Bachelor		2013	Current
Inaya Medical College	Riyadh	Bachelor	Private	2011	Current
AlMaarefa Colleges	Riyadh	Bachelor	Private	2011	Current
Jazan University	Jizan	Bachelor	Government	2013	Current
Taibah University	AlMadinah	Bachelor	Government	2013	Current

According to the Ministry of Health (MoH) statistical book for 2014, Saudis constitute 72.6% of the allied health professionals [2]. However, this percentage does not represent the RC workforce, which relies heavily on expatriates. The majority of those expatriates work for large specialized hospitals with North American standards. A report published in 2015 indicated a remarkable shortage of Saudi RTs, who constitute only 25% of the total RC workforce [3]. Table 3 shows RC personnel in the different healthcare sectors.

Table 3. Respiratory care personnel in different healthcare sectors

Sector	No	(%)
Ministry of Health	379	25.6
Other government facilities	885	60
Private sector	213	14.4
Total	1477	100

Nationality	n	(%)
Saudi	371	25
Filipino	990	67
North American	88	6
Others	28	2

MoH control over a large portion of the Saudi health system could have an exceptionally positive impact on the RC profession. The MoH has formally recognized the RC profession recently, which means it could be included as a part of the Saudi workforce. Additionally, the Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI) has included RC as one of their hospital accreditation standards [4]. Thus, hospitals will ultimately have to establish RC services to conform to CBAHI requirements.

There is an apparent ongoing process of recognition, expansion, standardization, and advancement of RC education and scope of practice. Therefore, the RC postgraduate diploma will be of great value to sharpen the skills of RTs.

SCOPE OF PRACTICE

RC is a health specialty involving the treatment, management, control, diagnostic evaluation, and care of patients with deficiencies and abnormalities of the cardiopulmonary system. These patients may be found in the newborn nursery, emergency department, outpatient department, surgical and medical units, intensive and critical care units, extended care, and skilled nursing facilities, and at home.

An RT is responsible for setting up and operating the life-saving machines that help people breathe when breathing disorders and difficulties prevent them from adequately doing so unaided. RTs also use a variety of sophisticated equipment and techniques to measure how a patient's lungs and circulatory system are working to evaluate and monitor a patient's respiratory health condition. A healthcare team relies heavily on RTs for specialized knowledge in areas such as medical gases, aerosol therapy, airway management, mechanical ventilation, and respiratory home care.

While intensive care RC is crucial, day-to-day therapeutic RC is equally essential. RC personnel, in consultation with physicians, carry out specific therapeutic measures to assist the patient's respiration. RC professionals must be experts in providing highly specialized and selective therapeutic RC.

Therapists must be competent in areas such as:

- Medical gas administration, including oxygen, nitric oxide, and mixtures of helium and oxygen
- Humidification
- Aerosolization of medications
- Bronchopulmonary drainage and exercises
- Cardiopulmonary resuscitation
- Pulmonary rehabilitation
- Advanced cardiopulmonary life support
- Mechanical ventilation
- Airway management
- Pulmonary function studies
- Arterial blood gas analysis
- Physiologic monitoring
- Sleep studies

Over the last few years, the role of RC professionals has greatly expanded worldwide. In the Middle East and Saudi Arabia, particularly in the Eastern Region, it is evident that the need for RTs in all healthcare settings will grow continuously for the foreseeable future. Therapists are also needed to serve on multidisciplinary teams within the healthcare environment.

An increased need for exceedingly professional RC therapists with broad skills is anticipated for these and many other reasons. That paves the way for the initiation of the Critical Respiratory Care postgraduate diploma, along with the support and recognition of the Saudi Commission for Healthcare Specialties of the respiratory care profession's needs for the first time. The initiation of a Critical Respiratory Care postgraduate diploma will robustly maintain the effectiveness and the importance of this healthcare profession, where its graduates will be a vital part of healthcare teams.

The scope of practice of respiratory therapists and practitioners enrolled in the Critical Respiratory Care postgraduate diploma program includes the use of technology and evidence-based protocols throughout a two-year structured clinical rotation, and an advanced learning program across critical areas caring for patients undergoing surgery, and in general. Preparing for these responsibilities will be supported by carefully selected training sites and qualified supervisory personnel.

Diagnostic modalities include but are not limited to:

- Obtaining and analyzing blood gas specimens
- Interpreting physiological data
- Performing cardiopulmonary system studies

Therapeutic modalities include but are not limited to:

- Application and monitoring of medical gases
- Mechanical ventilation management
- Advanced airway management
- Bronchopulmonary hygiene
- Administration of pharmacological agents
- Cardiopulmonary resuscitation
- Hemodynamic cardiovascular support

The curriculum also includes how to educate patients and their families to promote weaning from mechanical ventilation, therapeutic support, the discharge process, and providing the best possible quality of life for patients who are dependent on cardiopulmonary support. This program's fellows will participate in research activities, train others, and contribute to the overall respiratory therapy practice, literature, and innovation.

OUTCOMES AND COMPETENCIES

Rationale

Over the past ten years, the role of RC professionals has expanded significantly worldwide. An RT is

- a skilled therapist.
- a vital part of the healthcare team, serving within multidisciplinary healthcare teams.
- not only in the hospital but also in the community.
- an expert and vital in critical care.
- a critical care expert, competent communicator, collaborator, manager, health advocate, scholar, and professional.

Overall goals

1. To train senior RTs who competently practice RC independently and apply principles at an advanced level in a clinical critical care role, with the requisite knowledge, skills, and attitudes toward patients.
2. To train senior RTs to become highly qualified and competent with patient care and capable of training other healthcare providers.
3. To proficiently prepare senior RTs who are capable of contributing to health care management, planning, and research in their area of expertise.

Learning outcomes

By the end of this program, an RT should be able to:

- Aptly apply basic and advanced diagnostic and therapeutic respiratory skills for ethical and effective care of critically ill patients in the Adult ICU.
- Efficiently access and apply relevant information to the practice of adult critical care.
- Demonstrate a deep understanding of cardiopulmonary physiology, pathophysiology, and pharmacology as they are essential clinical aspects of managing critically ill patients in the adult ICU.
- Demonstrate effective leadership skills concerning patient care, healthcare providers, and education processes.
- Exhibit both advanced and applied knowledge of invasive and non-invasive mechanical ventilation.
- Demonstrate in-depth knowledge of the principles of radiology assessments and interpretations.
- Demonstrate the necessary expertise for rational use of the principles of “evidence-based medicine” in both clinical and research settings.
- Demonstrate a basic understanding of biostatistics, study design, research methodology, data analysis, protocol writing, and manuscript preparation.
- Adopt the principles of adult learning and helping others learn through constructive feedback.
- Contribute to effective communication and cooperation among patients and colleagues in all aspects of education, service, and research, as they have a high impact on the critical care environment.
- Recognize the multidisciplinary nature of the specialty.

- Demonstrate both in-depth and applied knowledge of the following:
 - a. Respiratory Diseases and Mechanical Ventilation
 - b. Cardiovascular Diseases
 - c. Neuromuscular Diseases
 - d. Radiology
 - e. Cardiac Catheterization
 - f. Pharmacology
 - g. Emergency Care (Ambulance Services, Medivac)
 - h. Rapid Response Team (RRT)
 - i. Mobile Adult ICU
 - j. Nutritional Assessment and Support
 - k. Critically Ill Patient Transport
 - l. Oxygen Therapy
- Manifest proficiency in the following technical skills:
 - a. Advanced Airway Management
 - b. Intubation, Tracheostomy, and Bronchoscopy
 - c. ECG
 - d. Arterial Line Insertion
 - e. Basic and Advanced Mechanical Ventilation (Independent Lung Ventilation, Lung Recruitment, Protective Lung Strategies)
 - f. Non-Invasive Ventilation (NIV)
 - g. High-Frequency Ventilation (HFV) and Nitric Oxide
 - h. Extracorporeal Membrane Oxygenation (ECMO)
 - i. Transport Ventilation
 - j. Airway Clearance Devices
- Demonstrate skills in the principles and performance of RC quality assurance, including protocols and policies.
- Understand and apply evidence-based and research-supported approaches and study designs in RC research.
- Demonstrate administrative and leadership roles during RC clinical rotations.

Core tasks

1. Administration of medical gases
2. Humidification and aerosolization of medications
3. Bronchopulmonary drainage and exercises
4. Pulmonary rehabilitation and home care
5. Mechanical ventilation
6. Airway management
7. Pulmonary function studies
8. Diagnostics and therapeutics modalities
9. Critical care monitoring

Generic competencies

The following competencies are expected, by the end of each training year:

- 1) Clinical Expert
- 2) Communicator
- 3) Collaborator
- 4) Manager

- 5) Health Advocate
- 6) Scholar
- 7) Professional

The characteristics of each competency are outlined below.

CLINICAL EXPERT

Definition

As Clinical Experts, RTs integrate all the CanMEDS roles, applying medical knowledge and clinical skills in their provision of patient-centered care. The trainee should be able to perform the following:

- Function effectively as an RT in Category 1 and some Category 2 procedures.
- Establish and maintain clinical knowledge, skills, and attitudes appropriate to respiratory critical care.
- Perform a complete and appropriate assessment of a critical care patient.
- Use preventive and therapeutic interventions effectively.
- Appropriately use and interpret diagnostic tests relevant to critical care practice.
- Demonstrate proficient and appropriate use of procedural skills.
- Recognize the limits of their expertise and seek appropriate directions from other health professionals.

COMMUNICATOR

Definition

As Communicators, RTs should effectively facilitate the therapist-patient relationship and the exchanges that occur before, during, and after the clinical encounter. The trainee should be able to:

- Develop rapport, trust, and ethical therapeutic relationships with patients and families.
- Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals.
- Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals.
- Develop a common understanding of issues, problems, and plans with patients, families, and other professionals to develop a shared care plan.
- Convey practical oral and written information about a medical encounter, and maintain clear, accurate, and appropriate records (written or electronic) of clinical encounters and plans.

COLLABORATOR

Definition

As Collaborators, RTs should be able to work effectively within a healthcare team to achieve optimal patient critical care. The trainee should be able to:

- Participate effectively and appropriately in a cross-functional healthcare team.
- Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict.
- Demonstrate adequate skills in educating and learning from members of the interdisciplinary team.
- Convey to others the role of the RT as a collaborator

MANAGER

Definition

As Managers, RTs are integral participants in healthcare organizations who organize sustainable practices, make decisions about allocating resources, and contribute to the effectiveness of the healthcare system. The trainee should be able to:

- Participate in activities that contribute to the effectiveness of healthcare organizations and systems.
- Manage their practice and career effectively.
- Allocate limited healthcare resources appropriately.
- Serve in administration and leadership roles.
- Incorporate accepted standards of critical care and evidence-based decision-making into the practice of caring for critical care patients and their families.
- Utilize the specific available resources to assist with the care of critically ill patients.

HEALTH ADVOCATE

Definition

As Health Advocates, RTs use their expertise and influence responsibly to advance the health and well-being of individual patients, communities, and populations. The trainee should be able to:

- Respond to individual patient health needs and issues as part of patient critical care.
- Respond to the health needs of the communities that they serve.
- Identify the determinants of health for the populations served.
- Promote the health of individual patients, communities, and populations.
- Describe the societal and environmental factors relevant to critically ill patients.
- Describe current barriers to providing effective care for critically ill patients.
- Ensure that patients' privacy and dignity are maintained.
- Act as an effective advocate for the rights of patients and their families in clinical situations involving severe ethical considerations.

SCHOLAR

Definition

RTs demonstrate a lifelong commitment to reflective learning, as well as to the creation, dissemination, application, and translation of medical knowledge. The trainee should be able to:

- Maintain and enhance professional activities through continual learning.
- Critically evaluate medical information and its sources and apply this appropriately to practice decisions.
- Facilitate learning for patients, families, students, other health professionals, and the public.
- Contribute to the development, dissemination, and translation of new knowledge and practices.
- Act as a role model for other RTs and senior RTs.
- Access and use the relevant literature to help solve clinical problems.
- Apply critical appraisal skills to the literature in RC.
- Complete at least one scholarly project under the mentorship of an attending senior RT or another faculty supervisor. The project should be presented at either a national or an international scientific event or published in a peer-reviewed journal. Trainees are encouraged to complete the project or make significant progress toward the completion of training before their final examination.

PROFESSIONAL

Definition

As Professionals, RTs are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behavior. The trainee should be able to:

- Demonstrate a commitment to their patients, profession, and society through ethical practice.
- Demonstrate integrity, honesty, and compassion in the care of patients.
- Demonstrate a commitment to patients, their profession, and society through participation in profession-led regulation.
- Demonstrate a commitment to RC health, managing one's stress in dealing with critical care patients, and sustainable practice.
- Demonstrate self-awareness and self-care for critically ill patients.

TIME FRAME FOR PROGRAM COMPLETION

Year	Area of learning	Number of weeks
Modules of First-Year Training	General orientation	1
	Medical Critical Care <ul style="list-style-type: none"> • Radiology • Respiratory diseases • Mechanical ventilation • Clinical training 	13
	Surgical Critical Care <ul style="list-style-type: none"> • Pulmonary bronchoscopy • Mechanical ventilation • Advanced airway management • Intubation, tracheostomy • Respiratory diseases • Clinical training 	12
	Cardiac Critical Care <ul style="list-style-type: none"> • Echo, ECG • Catheterization laboratory • Pharmacology • Clinical training 	12
	Adult Emergency Care <ul style="list-style-type: none"> • Clinical laboratory sciences • Ambulance services, MEDIVAC • Rapid response team • Mobile ICU 	10
	Annual Vacation	4
	Total	52
Modules of Second Year Training	Pediatric Critical Care <ul style="list-style-type: none"> • Cardiac anomalies and surgical procedures • Radiology • Respiratory diseases • Mechanical ventilation • Pharmacology • Clinical training 	16
	Neonatal Critical Care <ul style="list-style-type: none"> • Development and care of the fetus • Prematurity, perinatal respiratory disease, and other cardiorespiratory problems of newborns • Special considerations • Non-invasive ventilation • Advance mechanical ventilation • Clinical training 	16

	Pediatric and Neonatal Emergencies <ul style="list-style-type: none"> • Respiratory diseases • Pediatric and neonatal transport • mechanical ventilation • Ambulance services • Clinical training 	7
	Quality, Research, and Leadership <ul style="list-style-type: none"> • Quality insurance and its principles in RC • Protocols and policies: quality of RC services • Continuous quality improvement • Evidence-based and research-supported approaches • Principles of scientific research and epidemiological study design • Critical appraisal in medical and health research studies • Administrative and leadership roles • Principles and theories of RC management 	9
	Annual Vacation	4
	Total	52

CORE SPECIALTY TOPICS (KNOWLEDGE & SKILLS)

Module I: Medical critical care

Learning Objectives

At the end of this module, the student will be able to:

1. Appraise the functions and responsibilities of the professional RT for medical critical care and select essential criteria for establishing a professional portfolio.
2. Obtain initial subjective and objective data from the critically ill patient.
3. Implement the basic principles of time management in the performance of RC activities to care for critically ill patients. The student will prioritize a care plan according to the changing acuity of a patient.
4. Describe the different methods of therapeutic airway management.
5. Identify all aspects of common pulmonary diseases.
6. Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation in a wide variety of clinical, medical scenarios.
7. Understand and demonstrate skills in using advanced modes of mechanical ventilation.

Module Outline

Roles and responsibilities of the RT in intensive care:

- Scope of practice
 - Professionalism and ethics
 - Accountability
 - Advance practice roles
 - Teamwork
- Tasks to be performed
 - Chest X-ray
 - Computed tomography (CT) scan
 - Magnetic resonance imaging (MRI)
- Pulmonary diseases
 - Pneumonia
 - Bronchiectasis
 - Asthma
 - Chronic obstructive pulmonary disease (COPD)
 - Interstitial lung disease
 - Pleural diseases
 - Pulmonary edema
- Neuromuscular diseases
 - Myopathic disease
 - Myasthenia gravis
 - Guillain-Barré syndrome
 - Acute respiratory distress syndrome (ARDS)
- Advanced mechanical ventilation modes
 - Airway pressure release ventilation (APRV)
 - Proportional assist ventilation (PAV)
 - Neurally adjusted ventilatory assist (NAVA)
 - Open lung tool

- Smart care
- Adaptive support ventilation (ASV)
- Non-invasive mechanical ventilation
 - Bilevel positive airway pressure (BPAP)
 - Continuous positive airway pressure (CPAP)
 - Interfaces

Module II: Surgical critical care

Learning Objectives

At the end of this module, the student will be able to:

1. Appraise the functions and responsibilities of a professional RT for surgical critical care and select essential criteria for establishing a professional portfolio.
2. Obtain initial subjective and objective data from the critically ill patient.
3. Implement basic principles of time management in the performance of RC care for critically ill patients. The student will prioritize a care plan according to the changing acuity of a patient.
4. Describe the different methods of therapeutic airway management.
5. Identify all aspects of common pulmonary diseases and conditions in a surgical ICU.
6. Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation in a wide variety of clinical, surgical scenarios.
7. Identify all aspects of bronchoscopy and ancillary equipment, indication, contraindication, and commonly associated side effects.
8. Exhibit skills in tracheostomy care.

Module Outline

Roles and responsibilities of the RT in intensive care:

- Scope of practice
 - Professionalism and ethics
 - Accountability
 - Advance practice roles
 - Teamwork
- Tasks to be performed
 - Chest X-ray
 - Computed tomography (CT) scan
 - Magnetic resonance imaging (MRI)
 - Pulmonary diseases and other conditions related to surgical care
 - Bronchoscopy
 - Preparation
 - Ancillary equipment
 - Procedures
- Advanced airway management
 - Intubation procedures
- Tracheostomy tube
 - Preparation
 - Equipment
 - Procedures
 - Care

- Mechanical ventilation management for
 - Road traffic accidents and trauma scenarios
 - Head injury
 - Spinal injury
 - Flail chest
 - Pneumo-hemothorax
 - Post major chest and abdominal surgery
 - Other clinical scenarios

Module III: Cardiac critical care

Learning Objectives

At the end of this module, the student will be able to:

1. Appraise the functions and responsibilities of the professional RT for cardiac critical care and select essential criteria for establishing a professional portfolio.
2. Obtain initial subjective and objective data from the critically ill patient.
3. Implement the basic principles of time management in the performance of RC activities to care for critically ill patients. The student will prioritize a care plan according to the changing acuity of a patient.
4. Describe the different methods of therapeutic airway management.
5. Understand, perform, and interpret cardiac procedures (ECG, ECHO, Cardiac stress test, and others).
6. Show good knowledge and clinical competency in extracorporeal membrane oxygenation (ECMO).
7. Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation in a wide variety of clinical cardiac scenarios.

Module Outline

Roles and responsibilities of the RT in intensive care:

- Scope of practice
 - Professionalism and ethics
 - Accountability
 - Advance practice roles
 - Teamwork
- Tasks to be performed
 - Chest X-ray
 - Computed tomography (CT) scan
 - Magnetic resonance imaging (MRI)
- Pulmonary diseases and other conditions related to surgical care
- Cardiac procedures
 - Electrocardiography (ECG)
 - Echocardiography (ECHO)
 - Cardiac stress test
 - Preparation
 - Equipment
 - Procedures
- Cardiac catheterization
- ECMO
 - Preparation
 - Equipment
 - Procedures

- Mechanical ventilation management
 - Non-surgical cardiac patients
 - Heart failure
 - Post myocardial infarction
 - Other relevant scenarios
 - Surgical cardiac patients
 - Post coronary artery bypass grafting
 - Post valve replacement
 - Other relevant scenarios

Module IV: Adult emergency care

Learning Objectives

At the end of this module, the student will be able to:

1. Appraise the functions and responsibilities of the professional RT for adult emergency care and select essential criteria for establishing a professional portfolio.
2. Competently recognize and apply knowledge to compare, differentiate, and evaluate the critical condition factors and clinical manifestations.
3. Apply proper assessment (including recommendation and interpretation of laboratory, diagnostic, and radiological studies and findings) for emergency scenarios.
4. Describe the different methods of therapeutic airway management.
5. Competently apply proper management (including initial stabilization, oxygen therapy, pharmacological and non-pharmacological, patient education, procedural, and prevention measures).
6. Identify and treat conditions requiring immediate resuscitation or stabilization.
7. Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation and transportation of mechanically ventilated patients in a wide variety of clinical, emergency scenarios.

Module Outline

Roles and responsibilities of the RT in intensive care:

- Scope of practice
 - Professionalism and ethics
 - Accountability
 - Advance practice roles
 - Teamwork
 - Patient education
- Tasks to be performed
 - Chest X-ray
 - Lab procedures and results
 - Arterial blood sampling
 - Stabilization techniques
 - Advanced airway management
 - Aerosol therapy
 - Oxygen therapy modalities
- Non-invasive ventilation
 - Bilevel positive airway pressure
 - Continuous Positive Airway Pressure (CPAP)
 - Interfaces

- Mechanical ventilation management
- Transportation for ventilated scenarios

Module V: Pediatric critical care

Learning Objectives

At the end of this module, the student will be able to:

1. Appraise the functions and responsibilities of the professional RT for pediatric critical care and select essential criteria for establishing a professional portfolio.
2. Obtain initial subjective and objective data from the critically ill patient.
3. Implement the basic principles of time management in the performance of RC activities to care for critically ill patients. The student will prioritize a care plan according to the changing acuity of a patient.
4. Describe the different methods of therapeutic airway management.
5. Demonstrate an understanding of the healthy and abnormal cardio physiological differences between pediatric patients compared to neonatal and adult patients.
6. Demonstrate familiarity with diagnostic methods that assist in determining whether a pediatric patient has heart anomalies and identify abnormalities in pediatric chest imaging.
7. Demonstrate understanding and skills related to surgical procedures to provide RC pre and post-surgery.
8. Understand the principle of imaging modalities and technologies of different imaging used for the diagnosis of abnormalities in the cardiovascular and respiratory systems of pediatric patients.
9. Demonstrate familiarity with specific knowledge related to pulmonary pathology and clinical aspects of different pediatric pulmonary diseases, which affect ventilation, gas diffusion, and pulmonary function.
10. Demonstrate examination skills and techniques used in the diagnosis of pulmonary diseases.
11. Demonstrate sound knowledge and clinical competency in the management of pediatric mechanical ventilation in a wide variety of clinical scenarios.
12. Demonstrate knowledge of the underlying principles of the action of drugs on the body and the therapeutic effects of specific drug treatments.

Module Outline

Roles and responsibilities of the RT in intensive care:

- Scope of practice
 - Professionalism and ethics
 - Accountability
 - Advance practice roles
 - Teamwork
- Cardiac anomalies and surgical procedures
 - Physical examination
 - Angiogram, angioplasty
 - Cardiac MRI scan, chest X-rays for children
 - Echocardiogram, electrocardiogram, electrophysiology studies
 - Exercise testing, Holter monitoring
 - Interventional Cardiac Catheterization

- Pre and post-surgery RC care
 - Oxygen therapy
 - Airway care
 - Physiotherapy
 - Mechanical ventilation support
 - Extracorporeal membrane oxygenation (ECMO)
- Radiology
 - Chest X-ray
 - Computed tomography (CT)
 - Magnetic resonance imaging (MRI)
 - Positron emission tomography (PET)
 - Ultrasound
- Respiratory diseases & mechanical ventilation
 - Operating mechanical ventilators
 - Monitoring
 - Mechanical troubleshooting
 - Management strategies of mechanical ventilation according to disease entities
- Pharmacology
 - Drug calculation for pediatric patients
 - Bronchodilators and the factors influencing drug deposition in aerosol form
 - Bland aerosol therapy
 - Selection of aerosol delivery devices: upper airway, parenchyma
 - Humidification and nebulization therapy during mechanical ventilation
 - The small particle aerosol generator

Module VI: Neonatal critical care

Learning Objectives

At the end of this module, the student will be able to:

1. Appraise the functions and responsibilities of the professional RT for neonatal critical care and select essential criteria for establishing a professional portfolio.
2. Obtain initial subjective and objective data from the critically ill patient.
3. Implement the basic principles of time management in the performance of RC activities to care for critically ill patients. The student will prioritize a care plan according to the changing acuity of a patient.
4. Describe the different methods of therapeutic airway management and steps for neonatal cardiopulmonary resuscitation.
5. Demonstrate RC skills in proper handling and dealing with neonatal, infant, and child patients using appropriate equipment.
6. Apply proper assessment and interpretation of Apgar and other scales.
7. Demonstrate knowledge and competent skills in the management of respiratory distress disorders.
8. Operate and work with several different types of neonatal mechanical ventilators. The trainee should be able to assemble, test, and operate these machines safely and effectively.
9. Demonstrate sound knowledge and clinical competency in the management of neonatal mechanical ventilation in a wide variety of clinical scenarios.
10. Demonstrate knowledge of the underlying principles of the action of drugs on the body and the therapeutic effects of specific drug treatments.

Module Outline

Roles and responsibilities of the RT in intensive care:

- Scope of practice
 - Professionalism and ethics
 - Accountability
 - Advance practice roles
 - Teamwork
- Development and care of the fetus
 - Calculating equations related to neonatal and pediatric RC
 - Administering surfactant in the management of premature neonates and the treatment of respiratory distress syndrome
 - Proper handling and management of newborn, infant, and child patients using appropriate equipment
 - Interpreting Apgar score, Silverman-Andersen score
 - Interpreting CBG, ABG values, and umbilical artery sampling
 - Outlining the steps for neonatal cardiopulmonary resuscitation
- Perinatal respiratory disease and other problems of prematurity
 - Pre- and post-natal assessment
 - Meconium aspiration
 - Surfactant replacement therapy
 - Perinatal asphyxia
 - Central line placement
 - ECMO cannulation
 - Invasive mechanical ventilation management
 - Transcutaneous oxygen and carbon dioxide monitoring
 - Nasal catheters
 - Incubators, oxygen hoods
- Mechanical ventilation: invasive and non-invasive
 - Intubation and extubation protocols
 - Volume-cycled and pressure-cycled ventilation
 - Implementation criteria and assessment for invasive and non-invasive mechanical ventilation
 - Modes and settings of invasive and non-invasive mechanical ventilation
 - High-frequency ventilation
 - Neurally adjusted ventilatory assist (NAVA)
 - Types of non-invasive masks and selection criteria
 - Waveform analysis
 - Weaning methods and modes
 - Monitoring protocols
 - Patient's documentation: flow sheet and chart
 - Ventilator circuits
- Special consideration
 - Immunizations
 - Patient identification
 - Medication dosing
 - Growth tracking
 - Fluid resuscitation

Module VII: Pediatric and neonatal emergencies

Learning Objectives

At the end of this module, the student will be able to:

1. Appraise the functions and responsibilities of the professional RT for pediatric and neonatal emergencies and select essential criteria for establishing a professional portfolio.
2. Competently recognize and apply knowledge to compare, differentiate, and evaluate the critical condition factors and clinical manifestations.
3. Apply proper assessment (including recommendation and interpretation of laboratory, diagnostic, and radiological studies and findings) for neonatal and pediatric emergency scenarios.
4. Describe the different methods of therapeutic airway management.
5. Competently apply proper management (including initial stabilization, oxygen therapy, pharmacological and non-pharmacological, patient education, procedural, and prevention measures).
6. Identify and treat conditions requiring immediate resuscitation or stabilization.
7. Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation and transportation of mechanically ventilated patients in a wide variety of clinical, emergency scenarios.
8. Apply knowledge and skill in educating families about lung health. The trainee should show competency in demonstrating to the patient's family how the procedures are correctly performed.

Module Outline

Roles and responsibilities of the RT in intensive care:

- Scope of practice
 - Professionalism and ethics
 - Accountability
 - Advance practice roles
 - Teamwork
- Respiratory diseases
 - Quick patient assessment
 - Resuscitation
 - Airway management: airway obstruction management, naso-oro-pharyngeal airway, laryngeal mask airway (LMA)
 - Oxygenation management
 - Ventilation management: intubation routes
 - Ventilation strategy
- Respiratory emergencies
 - Pneumothorax
 - Respiratory acidosis and alkalosis
 - Aspiration
 - Pulmonary edema
 - Exacerbation of asthma, COPD
 - Hemothorax
 - Upper airway obstruction
 - Pulmonary embolus
 - Atelectasis
 - Pleurisy

- Epiglottitis
- Retropharyngeal abscess
- Peritonsillar abscess
- Respiratory failure
- Pediatric and neonatal transport
 - Portable ventilators
 - Incubator
 - Pumps
 - Bed warmers
 - Monitors (ECG, BP, HR, SPO₂)
 - Safety measures
 - Airway management, portable oxygenation—adult and pediatric
 - Temperature regulation
 - Defibrillator
 - Suction apparatus and catheters
 - Stabilization
- Family education
 - Procedures
 - Cystic Fibrosis
 - Asthma education (prevention and drug delivery techniques)
 - Nebulization
 - Other drug delivery devices or systems

Module VIII: Quality, leadership, and research

Learning Objectives

At the end of this module, the student will be able to:

1. Utilize an evidence-based and research-supported approach in evaluating RC practice within critical care settings.
2. Discuss the basic principles of formulating a scientific idea. Designing a research study and carry it out within the clinical training period.
3. Conduct epidemiological study designs (cohort, cross-sectional, retrospective, and prospective).
4. Critique medical and health research studies.
5. Demonstrate familiarity with statistical terminology and the purpose of statistics.
6. Demonstrate an understanding of the analysis of statistical data within the research context.
7. Identify the elements that constitute quality RC; ensure proper understanding and knowledge of quality assurance and its principles.
8. Explain how RC protocols improve the quality of RC services.
9. Demonstrate awareness of opportunities to participate in clinical quality improvement.
10. Apply leadership concepts in emergencies and among other healthcare providers.
11. Apply knowledge and understanding of principles and theories of RC management.

Module Outline

Roles and responsibilities of the RT in intensive care:

- Research
 - Epidemiology for clinical research
 - Research methodology and study design

- Statistics for scientific research
- Ethical considerations in scientific research
- Assessing the reliability and validity of diagnostic and screening tests
- Bias, confounding, and interaction
- Evidence-based research and application
- Quality
 - Monitoring quality of RC delivery
 - RC quality protocols
 - Disease management
 - Performance improvement
 - Professionalism
 - CIBAH, JCI
- Leadership
 - Leadership skills
 - Interpersonal communication skills
 - Stress and crisis management
 - Recognize and prioritize problems
 - Make decisions
 - Observe the consequences of decisions
 - Staffing system
 - Billing system
 - Evaluation
 - Performance technology

TEACHING AND LEARNING

General principles

1. Teaching and learning will be structured and programmatic with more responsibility for self-directed learning.
2. At least 4-6 hours of formal teaching time should be reserved every week. Formal teaching time is an activity that is planned with an assigned tutor, time slots, and venue. Formal teaching time excludes bedside teaching, rounds discussion, and clinic attendance.
3. The Core Education Program (CEP) includes the following three formal teaching and learning activities:
 - Universal topics: 20-30%
 - Core specialty topics: 40-50%
 - Trainee-selected topics: 20-30%
4. At least 3 hours per week should be allocated to CEP.
5. CEP will be supplemented by other forms of practice-based learning (PBL), such as the following:
 - Morning reports or case presentations
 - Journal clubs, critical appraisal, and evidence-based medicine
 - Interprofessional clinical-simulated sessions
 - Hospital grand rounds and other CMEs
6. Self-directed learning
 - Achieving personal learning goals beyond the essential, core curriculum
 - Maintenance of personal portfolio (self-assessment, reflective learning, personal development plan)
 - Research projects
 - Reading journals
 - Attendance at training programs organized on a regional basis (such as symposia, conferences, and board reviews)
 - E-learning universal topics:

The American Association for Respiratory Care (AARC) has developed an e-learning platform focusing on high value, interdisciplinary topics of utmost importance to trainees. The topics are delivered via the Blackboard learning system. An online formative assessment is conducted at the end of each learning unit. Trainees are encouraged to participate in these topics. The AARC offers topics in the following specialties:

 - Leadership
 - Patient safety
 - Pulmonary function test (PFT), Diagnostics
 - Management
 - Neonatal–pediatric
 - Clinical practice
 - Adult critical care
 - Disaster preparedness

TABLE OF TEACHING AND LEARNING ACTIVITIES LINKED TO CanMEDS

ACTIVITY	OBJECTIVES	CanMED COMPETENCIES	COMMENTS
Case Presentation	<ul style="list-style-type: none"> • Be able to present respiratory-related history and physical examination with details pertinent to a patient's problem. • Create a list of all problems identified in the history and physical examination. • Develop a proper differential diagnosis for each problem. • Formulate a diagnosis and treatment plan for each problem. • Demonstrate a commitment to improving case presentation skills by regularly seeking feedback on presentations. • Trainee should accurately and objectively record and present data. 	<ul style="list-style-type: none"> – Clinical expert – Scholar 	Records of proceedings are kept confidential.
Journal clubs, critical appraisal, and evidence-based medicine	<ul style="list-style-type: none"> • Promoting continuing professional development. • Keeping up-to-date with the literature. • Disseminating information and stimulating debate on good practice. • Ensuring that professional practice is evidence-based. • Learning and practicing critical appraisal skills. • Providing an enjoyable educational and social occasion. 	<ul style="list-style-type: none"> – Clinical expert – Scholar – Health Advocate 	The presenter is a fellow under a senior staff supervisor.
Interprofessional clinical simulation	<ul style="list-style-type: none"> • Understanding how the concepts of healthcare simulation apply to respiratory and critical care. • Utilize clinical simulation as learning and training tools to improve the knowledge and skills of others. 	<ul style="list-style-type: none"> – Clinical expert – Scholar – Professional 	This training takes place in the clinical simulation center and under the supervision of a

	<ul style="list-style-type: none"> • Transfer knowledge attained in clinical simulation experience to the workplace to enhance performance and patient safety. • Demonstrate a critical understanding of the importance of human factors and how they are relevant to clinical simulation. • Explain the different characteristics of Safety I and Safety II. • Apply simulation-based education to help address human factors issues in respiratory and critical care. 		clinical simulation expert.
Self-directed Learning	<ul style="list-style-type: none"> • Achieve personal learning goals beyond the essential and core curriculum. • Maintain a personal portfolio (self-assessment, reflective learning, personal development plan). • Audit and research projects. • Read journals. • Attend training programs organized on a regional basis (such as symposia, conferences, and board reviews). • E-learning of universal topics (modules). 	<ul style="list-style-type: none"> – Clinical expert – Scholar – Manager – Professional 	Trainees should use books, journals, and other materials, including these recommended e-learning modules from the AARC: Leadership, Patient Safety, PFT-Diagnostics, Management, Neonatal–Pediatric, Clinical Practice, Adult Critical Care, and Disaster Preparedness.

Subjects for case discussion and interactive lectures

Subject	Learning Outcomes
Introduction to RC	<p>The trainee should be able to:</p> <ul style="list-style-type: none"> Effectively recognize normal and abnormal findings in physical assessment, laboratory data, diagnostic imaging, audio-visual interfaces (monitors), and graphic forms and prints. Carefully select the required RC equipment to carry out an RC plan. Effectively recognize and apply international and institutionally based standards, policies, guidelines, and protocols to carry out RC management. Accurately perform diagnostic testing procedures, record, and interpret results of chest radiographs, laboratory data, blood gases, cardiopulmonary function studies, polysomnography, and ventilatory mechanics. Proficiently use information technology to obtain information and conduct research.
Ethics in RC	
Advance care planning and goals of care	
Introduction to evidence-based medicine practice in RC	
Mechanical ventilation	
Basic and advanced modes of mechanical ventilation	
Non-invasive mechanical ventilation	
Interactive patient ventilator simulation	
Aerosolization in RC	
Humidification in RC	
Pulmonary function testing	
Pulmonary hygiene	
Oxygen therapy	
Drug delivery systems	
Tracheostomy care	
Basic airway management	
Advanced airway management	
Disease management and care plan	
Tobacco treatment and prevention	
Mass causality ventilation	
Transportation and stabilization in critical care	
Ventilator alarm safety	
Patient safety and the hazards in RC	
Quality and informatics	
Medications and other drugs associated with RC management	
Cardiopulmonary diseases	
Diagnostic imaging	
Acid-base regulation	

Basic cardiopulmonary assessment modalities and procedures	
Advanced cardiopulmonary assessment modalities and procedures	
Blood gas analysis and diagnostics	
Ventilatory mechanics	
Pulmonary rehabilitation and home Care	
Health informatics	
Interdisciplinary team	
Multidisciplinary RC	
Research in RC	

Subjects for simulations and workshops

Subject	Recommended duration (days)	Year
Fundamentals of mechanical ventilation (neonatal, pediatric, and adult): simulation-based learning	2-3	Adult: year 1 Neonatal & pediatric: year 2
Advanced mechanical ventilation (neonatal, pediatric, and adult): simulation-based learning	2-3	Adult: year 1 Neonatal & pediatric: year 2
Non-invasive mechanical ventilation (neonatal, pediatric, and adult): simulation-based learning	2-3	Adult: year 1 Neonatal & pediatric: year 2
Interactive patient ventilator simulation	2	Adult: year 1 Neonatal & pediatric: year 2
Pulmonary function testing: techniques and interpretation (pediatric and adult)	2-3	Adult: year 1 Neonatal & pediatric: year 2
Airway clearance techniques (neonatal, pediatric, and adult): simulation-based learning	3-4	Adult: year 1 Neonatal & pediatric: year 2
Oxygen therapy and aerosolization	1	Year 1
Drug delivery systems	1	Year 1
Tracheostomy care: simulation-based learning	2	Year 1

Extracorporeal membrane oxygenation (ECMO)	1	Adult: year 1 Neonatal & pediatric: year 2
Basic airway management (neonatal, pediatric, and adult): simulation-based learning	3-4	Adult: year 1 Neonatal & pediatric: year 2
Advanced airway management (neonatal, pediatric, and adult): simulation-based learning	3-4	Adult: year 1 Neonatal & pediatric: year 2
Basic and advanced modes of mechanical ventilation	2	Year 1
High-frequency oscillatory ventilator (HFOV)	2	Adult: year 1 Neonatal & pediatric: year 2
Neurally adjusted ventilatory assist (NAVA)	1	Year 1
Lung ultrasound	1	Year 1
Asthma and COPD education	2	Year 1
Tobacco treatment and prevention	3-4	Year 1
Mass casualty ventilation	1	Year 1
Transportation and stabilization of critically ill patients	1	Adult: year 1 Neonatal & pediatric: year 2
Ventilator alarm safety	1	Adult: year 1 Neonatal & pediatric: year 2
Patient safety and the hazards in RC	1	Year 1
Quality and informatics	2	Year 2
Research in RC	2	Year 2

ASSESSMENT

1. Purpose of Assessment

Assessment plays a vital role in the success of postgraduate training. Assessment will guide trainees and trainers to achieve the targeted learning objectives. In addition, a reliable and valid assessment will provide excellent means for training improvement, informing the following aspects: curriculum development, teaching methods, and quality of learning environment. Assessment can serve the following purposes:

- Assessment for learning:** trainers will use information from trainees' performance to inform their learning and aim at their improvement.
- Assessment as learning:** assessment criteria will drive trainees' learning.
- Assessment of learning:** assessment outcomes will represent quality metrics that can improve the learning experience.

For the sake of organization, the assessment will be further classified into two main categories: *Formative* and *Summative*.

2. Formative Assessment Tools

2.1 General Principles

Trainees, as adult students, should strive for feedback throughout their journey from "novice" to "mastery" levels of competence. *Formative assessment* (also referred to as continuous assessment) is the component of assessment that is distributed throughout the academic year, aiming primarily to provide trainees with effective feedback. Input from the overall formative assessment tools will be utilized at the end of the year to inform the decision over whether to promote each trainee from the current to subsequent training level (**Appendix A**). Formative assessment will be defined based on the scientific (council or committee) recommendations (usually updated and announced for each program at the start of the academic year). According to the executive policy on continuous assessment (available online: www.scfhs.org), formative assessment will have the following features:

- Multisource:** minimum of four tools.
- Comprehensive:** covering all learning domains (knowledge, skills, and attitude).
- Relevant:** focusing on workplace-based observations.
- Competency-milestone oriented:** reflecting the trainee's expected competencies to match the trainee's developmental level.

Trainees should play an active role in seeking feedback during their training. On the other hand, trainers are expected to provide timely and formative assessment. SCFHS will provide an e-portfolio system to enhance communication and analysis of data arising from formative assessment.

2.2 Formative Assessment Tools

- Trainees and trainers are advised to check the most updated assessment tools approved by the specialty Scientific Council, as it could be subject to changes in the future.
- For further details regarding the frequency of implementation, please check the statement on this regard from the specialty's Scientific Council.

The Formative Assessment Tools are summarized in the following table:

Learning Aspects	Year 1	Year 2
Knowledge	1-Specific academic tasks 2-End of year written progress test	Specific academic tasks
Skills	1-Objective structured clinical examination (OSCE) 2-Direct observation of procedural skills (DOPS)	DOPS
Attitude	1-Mini-clinical evaluation (Mini-CEX) 2-In-training evaluation reports (ITERS)	1-Mini-CEX 2-ITERS

Score grid defining the expectations from trainees	Assessment scores			
	Clear Fail	Borderlin e Fail	Borderlin e Pass	Clear Pass
Module I: Medical critical care The trainee is expected to: <ul style="list-style-type: none"> Appraise the functions and responsibilities of the professional RT for medical critical care and select essential criteria for establishing a professional portfolio. Obtain initial subjective and objective data from the critically ill patient. Implement the basic principles of time management in the performance of RC activities to care for critically ill patients. The student will prioritize a care plan according to the changing acuity of a patient. Describe the different methods of therapeutic airway management. Identify all aspects of common pulmonary diseases. Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation in a wide variety of clinical, medical scenarios. Understand and demonstrate skills in using advanced modes of mechanical ventilation. 	Less than 50%	50% - 59.4%	60% - 69.4%	More than 70%

Module II: Surgical critical care The trainee is expected to: <ul style="list-style-type: none"> • Appraise the functions and responsibilities of the professional RT for surgical critical care and select essential criteria for establishing a professional portfolio. • Obtain initial subjective and objective data from the critically ill patient. • Implement the basic principles of time management in the performance of RC activities to care for critically ill patients. The student will prioritize a care plan according to the changing acuity of a patient. • Describe the different methods of therapeutic airway management. • Identify all aspects of common pulmonary problems in the surgical ICU. • Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation in a wide variety of clinical, surgical scenarios. • Identify all aspects of bronchoscopy and ancillary equipment, indication, contraindication, and commonly associated side effects. • Exhibit skills in tracheostomy care. 	Less than 50%	50% - 59.4%	60% - 69.4%	More than 70%
Module III: Cardiac critical care The trainee is expected to: <ul style="list-style-type: none"> • Appraise the functions and responsibilities of the professional RT for cardiac critical care and select essential criteria for establishing a professional portfolio. • Obtain initial data from the critically ill patient. • Implement the basic principles of time management with critically ill patients. • Describe the different methods of therapeutic airway management. 	Less than 50%	50% - 59.4%	60% - 69.4%	More than 70%

<ul style="list-style-type: none"> Understand, perform and interpret cardiac procedures (ECG, ECHO, cardiac stress test, and others). Show good knowledge and clinical competency in ECMO. Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation in a wide variety of clinical cardiac scenarios. 				
Module IV: Adult Emergency Care The trainee is expected to: <ul style="list-style-type: none"> Appraise the functions and responsibilities of the professional RT for adult emergency care and select essential criteria for establishing a professional portfolio. Competently recognize and apply knowledge to compare, differentiate, and evaluate the critical condition factors and clinical manifestations. Apply proper assessment for emergency scenarios. Describe the different methods of therapeutic airway management. Competently apply proper management (including initial stabilization, oxygen therapy, pharmacological and non-pharmacological, patient education, procedural, and prevention measures). Identify and treat conditions requiring immediate resuscitation or stabilization. Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation and transportation of mechanically ventilated patients in a wide variety of clinical, emergency scenarios. 	Less than 50%	50% - 59.4%	60% - 69.4%	More than 70%

Module V: Pediatric critical care The trainee is expected to:	Less than 50%	50% - 59.4%	60% - 69.4%	More than 70%
<ul style="list-style-type: none"> • Appraise the functions and responsibilities of the professional RT of pediatric critical care and select essential criteria for establishing a professional portfolio. • Obtain initial subjective and objective data from the critically ill patient. • Implement the basic principles of time management in the performance of respiratory care activities to care for critically ill patients. The student will prioritize a care plan according to the changing acuity of a patient. • Describe the different methods of therapeutic airway management. • Demonstrate an understanding of the healthy and abnormal cardio physiological differences between pediatric patients compared to neonatal and adult patients. • Demonstrate familiarity with diagnostic methods that assist in determining whether a pediatric patient has heart anomalies and identify abnormalities in pediatric chest imaging. • Demonstrate understanding and skills for surgical procedures to provide RC pre and post-surgery. • Understand the principle of imaging modalities and technologies of different imaging used for the diagnosis of abnormalities in the cardiovascular and respiratory systems of pediatric patients. • Demonstrate familiarity with specific knowledge of pulmonary pathology and clinical aspects of different pediatric pulmonary diseases, which affect ventilation, gas diffusion, and pulmonary function. 				

<ul style="list-style-type: none"> • Demonstrate examination skills and techniques used in the diagnosis of pulmonary diseases. • Demonstrate sound knowledge and clinical competency in the management of pediatric mechanical ventilation in a wide variety of clinical scenarios. • Demonstrate knowledge of the underlying principles of the action of drugs on the body and the therapeutic effects of specific drug treatments. 				
Module VI: Neonatal critical care The trainee is expected to: <ul style="list-style-type: none"> • Appraise the functions and responsibilities of the professional RT for neonatal critical care and select essential criteria for establishing a professional portfolio. • Obtain initial subjective and objective data from the critically ill patient. • Implement the basic principles of time management in the performance of RC activities to care for critically ill patients. The student will prioritize a care plan according to the changing acuity of a patient. • Describe the different methods of therapeutic airway management. • Demonstrate RC skills in proper handling and dealing with neonatal, infant, and child patients using appropriate equipment. • Apply proper assessment and interpretation of Apgar and other scales. • Describe the different methods of therapeutic airway management and steps for neonatal cardiopulmonary resuscitation. • Demonstrate knowledge and competent skills in the management of respiratory distress disorders. 	Less than 50%	50% - 59.4%	60% - 69.4%	More than 70%

<ul style="list-style-type: none"> • Operate and work with several different types of neonatal mechanical ventilators. The trainee should be able to assemble, test, and operate these machines safely and effectively. • Demonstrate sound knowledge and clinical competency in the management of neonatal mechanical ventilation in a wide variety of clinical scenarios. • Demonstrate knowledge of the underlying principles of the action of drugs on the body and the therapeutic effects of specific drug treatments. 				
Module VII: Pediatric and neonatal emergencies The trainee is expected to: <ul style="list-style-type: none"> • Appraise the functions and responsibilities of the professional RT for pediatric and neonatal emergencies and select essential criteria for establishing a professional portfolio. • Competently recognize and apply knowledge to compare, differentiate, and evaluate the critical condition factors and clinical manifestations. • Apply proper assessment (including recommendation and interpretation of laboratory, diagnostic, and radiological studies and findings) for neonatal and pediatric emergency scenarios. • Describe the different methods of therapeutic airway management. • Competently apply proper management (including initial stabilization, oxygen therapy, pharmacological and non-pharmacological, patient education, procedural, and prevention measures). 	Less than 50%	50% - 59.4%	60% - 69.4%	More than 70%

<ul style="list-style-type: none"> Identify and treat conditions requiring immediate resuscitation or stabilization. Demonstrate sound knowledge and clinical competency in the management of mechanical ventilation and transportation of mechanically ventilated patients in a wide variety of clinical, emergency scenarios. Apply knowledge and skill in educating families about lung health. The trainee should show competency in demonstrating to the patient's family how the procedures are correctly performed. 				
Module VIII: Quality, leadership, and research The trainee is expected to: <ul style="list-style-type: none"> Utilize an evidence-based and research-supported approach in evaluating RC practice within critical care settings. Discuss the basic principles of formulating a scientific idea. Design a research study and carry it out within the clinical training period. Conduct epidemiological study designs (cohort, cross-sectional, retrospective, and prospective). Critique medical and health research studies. Demonstrate familiarity with statistical terminology and the purpose of statistics. Demonstrate an understanding of the analysis of statistical data. Identify the elements that constitute quality RC; ensure proper understanding and knowledge on quality assurance and its principles. Explain how RC protocols improve quality. Demonstrate awareness of opportunities to participate in clinical quality improvement. 	Less than 50%	50% - 59.4%	60% - 69.4%	More than 70%

<ul style="list-style-type: none"> • Apply leadership concepts in emergencies and among other healthcare providers. • Apply knowledge and understanding of the principles and theories of RC management. 				
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1. Specific Academic Tasks

Teaching and learning will be structured and programmatic, with more responsibility for self-directed learning.

General Principles

The general principles of teaching are to:

- Give all trainees equal attention in class and equal access to advice outside of class.
- Give all trainees equal amounts of helpful and honest support.
- Not prejudge trainees' capabilities.
- Monitor classroom dynamics to ensure that no trainees become isolated.

Mandatory Activities

These are high value, interdisciplinary topics of utmost importance to the trainee. The reason for centrally delivering the topics is to ensure that every trainee receives high-quality teaching and develops essential core knowledge.

Each institution is requested to provide or allow the resident to attend the following educational activities that are arranged by the local committees.

Subject	The educational activity coverage year	
Fundamentals of mechanical ventilation (neonatal, pediatric, and adult): simulation-based learning	Year 1	Year 2
Advanced mechanical ventilation (neonatal, pediatric, and adult): simulation-based learning	Year 1	Year 2
Non-invasive mechanical ventilation (neonatal, pediatric, and adult): simulation-based learning	Year 1	Year 2
Interactive patient ventilator simulation	Year 1	Year 2
Pulmonary function testing: techniques and interpretation (pediatric and adult)	Year 1	Year 2
Airway clearance techniques (neonatal, pediatric, and adult): simulation-based learning	Year 1	Year 2
Oxygen therapy and aerosolization	Year 1	
Drug delivery systems	Year 1	
Tracheostomy care: simulation-based learning	Year 1	

Extracorporeal membrane oxygenation (ECMO)	Year 1	Year 2
Basic airway management (neonatal, pediatric, and adult): simulation-based learning	Year 1	Year 2
Advanced airway management (neonatal, pediatric, and adult): simulation-based learning	Year 1	Year 2
Basic and advanced modes of mechanical ventilation	Year 1	
High-frequency oscillatory ventilator (HFOV)	Year 1	Year 2
Neurally adjusted ventilatory assist (NAVA)	Year 1	
Lung ultrasound	Year 1	
Asthma and COPD education	Year 1	
Tobacco treatment and prevention	Year 1	
Mass casualty ventilation	Year 1	
Transportation and stabilization of critically ill patients	Year 1	Year 2
Ventilator alarm safety	Year 1	Year 2
Patient safety and hazards in RC	Year 1	
Quality and informatics: 1 course		Year 2
Research in RC – 1-2 courses		Year 2

Characteristics of successful journal clubs:

- Presented by trainees and actively supervised by staff
- Attendance is mandatory for trainees
- Meetings last for less than 60 minutes
- Supported and endorsed by Program Director and departmental leaders

Case Presentation

The case presentation is conducted weekly by the assigned trainee under the supervision of their immediate program or rotation supervisor. The presented cases are those with interesting findings, unusual presentation, difficult diagnosis, or management (**Appendix B**). The objectives of the case presentation are as follows:

- To present a case history and physical examination with details pertinent to RC.
- Develop a proper treatment plan for each problem.
- Present a follow-up on a patient's case in a focused, problem-based manner that includes pertinent new findings as well as diagnostic and treatment plans.
- **AARC's Adult Critical Care Specialist Course**
 - The Adult Critical Care Specialist course is a comprehensive course developed to enhance the critical skills necessary for RTs who work in the critical care environment. Trainees must take this course and obtain the certificate via the American Association for Respiratory Care (AARC) website portal. <http://www.aarc.org/education/online-courses/>
- **Active involvement in the leadership program**
 - Complete the leadership and quality improvement program in RC offered by the AARC leadership institute: www.aarc.org/education/

- Trainees must take this program and obtain the certificate via the American Association for Respiratory Care (AARC) website portal.
- **AARC's Neonatal-Pediatric Specialist Course**
 - The neonatal-Pediatric Specialist course is a comprehensive educational activity developed to enhance the critical skills necessary for RTs who work in both neonatal and pediatric acute care environments. Trainees must take this course and obtain the certificate via the American Association for Respiratory Care (AARC) website portal. <http://www.aarc.org/education/online-courses/>
- **Other Activities**
 - The trainee should attend the annual conferences of the Kingdom's professional body for RC and the annual AARC congress.

2. End of Year Written Progress Test

A written examination assesses the trainee's knowledge and cognitive domains in respiratory critical care. It consists of 100 multiple-choice questions. Examination details and a blueprint will be published on the SCFHS's website, www.scfhs.org.sa.

3. Objective Structure Clinical Examination (OSCE)

OSCE assesses a broad range of high-level clinical skills. It consists of 10-12 stations. Each station covers at least one high-level clinical skill and may use a real clinical case or a simulated one. Examination details and a blueprint will be published on the SCFHS Website.

Example of stations

- A. Respiratory failure and the need for mechanical ventilation
- B. Ventilator concepts, ventilator set-up, and ventilator settings
- C. Monitoring patients on mechanical ventilatory support
- D. Chest X-ray interpretation
- E. Initializing and adjusting ventilatory support settings
- F. Ventilatory graphics
- G. Hemodynamic monitoring
- H. Adjunctive therapy during mechanical ventilation and other clinical issues
- I. Weaning mechanical ventilatory support
- J. Patient safety
- K. Teamwork

First annual examination:

The first annual examination takes place by the end of the first year. Trainees should sit for a continuous assessment examination, which consists of two parts, and trainees must pass both parts independently.

4. Mini-Clinical Evaluation (mini-CEX)

Mini-CEX describes an observed, interactive communication on a real-time basis. It may take up to 20 minutes, and feedback is provided instantly.

Mini-CEX aims to highlight and examine clinical knowledge and skills, attitudes, and behaviors of the trainee. This can be conducted in a real or simulated clinical situation. The trainer shall provide the training committee with a written evaluation of the trainee's performance three times each rotation (after 25%, 50%, and at the end of each rotation). See Appendix **C** for an overview of mini-CEX. Electronic records endorsed by SCFHS (e.g., One45) should be used to implement mini-CEX.

5. Direct Observation of Procedural Skills (DOPS)

DOPS is an assessment tool which aims to assess the trainee's performance while doing therapeutic or diagnostic practical procedures against a structured checklist. Feedback will be provided instantly. The trainee should acknowledge their areas of weakness. The structured checklist is weighted based on the importance and value of the step. See Appendix **D** for an overview of DOPS. Electronic records endorsed by SCFHS (e.g., One45) should be used to implement DOPS.

6. In-Training Evaluation Reports (ITERS)

ITER is a generic tool that covers competency roles (e.g., CanMEDS). Trainers are required to evaluate trainees at the end of each rotation. ITER provides a mix of checklists (assessed on a Likert scale) and free-text responses to provide narrative feedback. See Appendix **E** for an overview of ITER. Electronic records endorsed by SCFHS (e.g., One45) should be used to implement ITER.

7. Portfolio

A portfolio is a collection of products prepared by the trainee that provides evidence of achievement related to the curriculum and demonstrates performance, growth, and effort. It may include written documents or video/audio-recordings, photographs, and the like, see Appendix F. In clinical practice, this can include computer slide case presentations (case conferences), written materials prepared for the journal club, materials generated for morning reports, and in particular, clinical procedures that the trainee has written, revised, or reviewed. It may also contain copies of anonymized patient reports, chart notes, and other clinical interpretations. A portfolio is more than a trainee scrapbook—it is most potent when coupled with trainee self-reflection. It is a tool to promote self-knowledge and self-esteem, and at the same time, it can be used to identify areas of strength and areas that require improvement.

The portfolio should include the following:

- Curriculum vitae
- Professional development plan
- Records of educational training events
- Reports from educational supervisors
- E-Logbook
- Case management write-ups (selected)
- Reflection

8. E-Logbook

All trainees will have a logbook for continuous evaluation and attendance, which will be signed by the instructor and students regularly.

The E-Logbook will be part of the portfolio. The purposes of the logbook are as follows:

- Monitor trainees' clinical performance and exposure continually.
- Document and record cases treated and managed by the trainees.
- Maintain a record of the procedures and technical interventions performed.
- Enable both the trainee and supervisor to determine learning gaps.
- Provide a basis for feedback to the trainee.

9. Research (scholarly project)

All the trainees are required to conduct a research project during training. Trainees must select a research project within four months of joining and submit protocol and obtain approval within six months. The research project must be submitted two months before the final exam.

Summative Assessment

3.1 General Principles

Summative assessment is the component of assessment that aims primarily to make informed decisions on trainees' competency. In contrast to the formative assessment, the *summative assessment* does not aim to provide constructive feedback. For further details on this section, please refer to the general bylaws and executive policy of assessment (available online: www.scfhs.org). To be eligible to sit for the final exams, a trainee should be granted a "Certification of Training-Completion."

3.2 Certification of Training-Completion

To be eligible to sit for final specialty examinations, each trainee is required to obtain a "Certification of Training-Completion." Based on the training bylaws and executive policy (please refer to www.scfhs.org), trainees will be granted a "Certification of Training-Completion" once the following criteria are fulfilled:

- a. Successful completion of all training rotations.
- b. Completion of training requirements as outlined by the specialty's scientific committee.
- c. Clearance from SCFHS training affairs that ensure compliance with tuitions payment and completion of universal topics.

The "Certification of Training-Completion" will be issued and approved by the local supervisory committee or its equivalent according to SCFHS policies.

3.3 Final Specialty Certification Examinations

The final specialty examination is the summative assessment component that grants trainees certification in the specialty. The trainee is considered to have accomplished the program once they pass the final certification examination. Trainees are required to have a "Certification of Training-Completion" to be eligible for this exam. The final examinations consist of two parts:

- a. Final written exam: please refer to SCFHS general bylaws in assessment to learn about the structure of this exam. Trainees are advised to check with the Scientific Committee for an exam blueprint, which will be accessible on www.scfhs.org.sa.
- b. Final clinical and practical exam: This is a case-based exam that allows for assessment of the problem-solving abilities of the trainee. Trainees are advised to check with the Scientific Committee for an exam blueprint, which will be accessible on www.scfhs.org.sa.

Policies and Procedures:

This program will follow SCFHS training bylaws for the following policies and procedures:

- A. Annual leave
- B. Public holiday
- C. Absenteeism
- D. Withdrawal and interruption
- E. Appeal mechanism
- F. Harassment, intimidation, and discrimination.

All the above policies and procedures are available on the SCFHS website.

APPENDICES

APPENDIX A: CONTINUOUS COMPETENCY EVALUATION FORM


Continuous Competency Evaluation by Staff Supervisor					
Trainee Name: _____					
Rotation: _____					
Staff Supervisor: _____					
Date: _____					
Topic: _____					
Evaluation Scale:	Very Weak	Weak	Acceptable	Good	Very Good
	1	2	3	4	5
Procedure / tasks:	1	2	3	4	5
Check order					
Review chart					
Maintain asepsis					
Obtain equipment					
Assemble and test equipment					
Confirm patient condition					
Inform patient					
Assess and monitor patient					
Implement procedure					
Conclude procedure					
Record results					
Report observations					
Additional comments					
Trainee's signature _____			Evaluator's signature _____		

Appendix B: Trainee Presentation Evaluation Form

Trainee Presentation Evaluation by Staff Supervisor					
Trainee Name: _____					
Rotation: _____					
Staff Supervisor: _____					
Date of Presentation: _____					
Topic: _____					
Evaluation Scale:	Very Weak	Weak	Acceptable	Good	Very Good
	1	2	3	4	5
Medical Expert	1	2	3	4	5
Demonstrated thorough knowledge of the topic					
Presented at an appropriate level and with adequate detail					
Communicator					
Provided objectives and an outline					
The Presentation was clear and organized.					
Used clear, concise, and legible materials					
Used an effective method and style of presentation					
Established good rapport with the audience					
Collaborator					
Invited comments from students and led the discussion					
Worked effectively with staff supervisor in preparing the session					

Health advocate					
Managed time effectively					
Addressed preventive aspects of care, if relevant.					
Scholar					
Posed an appropriate learning question					
Accessed and interpreted the relevant literature					
Professional					
Maintained patient confidentiality, if clinical material was used					
Identified and managed relevant conflicts of interest					
TOTAL SCORE					
Additional comments					
Trainee's signature _____ Evaluator's signature _____					

Appendix C: Mini-Clinical Elevation Exercise (mini-CEX)

	Saudi Commission for Health Specialties *SCFHS – Respiratory Therapy and Critical Care	Evaluated By: Trainee Name: Start date:	End date:

* indicates a mandatory response Trainee's Name:

Trainee's level:

Date of Assessment

Brief Summary of Case:

	Below expectations (1)	Borderline (2)	Meets expectations (3)	Above expectation (4)	Unable to comment
1) Client interview and information gathering skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) Physical examination skills and Interpretation of findings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3) Counseling and communication skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) Clinical judgment and evidence-based approach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5) Consideration for patient and professionalism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6) Ability to develop a working hypothesis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7) Establish care plans and prognosis tasks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8) Review patient outcome and referral	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9) Understanding and reporting limitations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10) Overall clinical competence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments:

Which aspects of the encounter were done well?

Suggested areas for improvement / development?

Agreed action and learning plan:

Trainee's reflections on patient and areas of learning:

	Consultant	Senior Therapist	Therapist
Assessor's position:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Others (specify):

Time taken for observation & feedback (in minutes): Assessor's Surname:

Assessor's Signature:

The following will be displayed on forms where feedback is enabled...
(for the evaluator to answer...)

*Did you have an opportunity to meet with this trainee to discuss their performance?

☐ Yes

☐ No

(for the trainee to answer...)


*Are you in agreement with this assessment?

☐ Yes

☐ No

Please enter any comments you have (if any) on this evaluation.

Appendix D: Direct Observation of Procedural Skills (DOPS)

	Saudi Commission for Health Specialties *SCFHS - Respiratory Therapy and Critical Care	Evaluated By: Trainee Name: Start date:	End date:
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* indicates a mandatory response

Direct Observation of Procedural Skills – DOPS Assessment

*Procedure:

	Below expectations 1	Borderline 2	Meets expectations 3	Above expectation 4	Unable to comment
1) Domain & comments: Professional approach (to include communication, consent, and consideration of the patient)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) Knowledge (indication, anatomy, technique)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3) Demonstrate appropriate pre-procedure preparation including equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) Prophylactic safety measures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5) Technical ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6) Aseptic technique	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7) Post-procedure management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8) Documentation skills and implementing a care plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments:

	Competent to perform Unsupervised	May need supervision if complications arise	Needs more practice
9) Overall ability to perform procedure:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comments:

10) Assessor's position:

- ☐ Consultant
☐ Senior therapist
☐ Therapist

11) Others (specify):

12) Complexity of the procedure:

- ☐ Low
☐ Average
☐ High

13) Time is taken for feedback & observation (in minutes):

14) Assessor's surname:

15) Assessor's signature:

The following will be displayed on forms where feedback is enabled...
(for the evaluator to answer...)

16) Did you have an opportunity to meet with this trainee to discuss their performance?

- ☐ Yes
☐ No


(for the trainee to answer...)

17) Are you in agreement with this assessment?

- ☐ Yes
☐ No

Please enter any comments you have (if any) on this evaluation.

Appendix E: In-Training Evaluation Report (ITER)

	Saudi Commission for Health Specialties *SCFHS - Respiratory Therapy and Critical Care	Evaluated By: Trainee Name: Start date:	End date:

* indicates a mandatory response

	Unsatisfactory (1)	Below Average (2)	Average (3)	Above Average (4)	Outstanding (5)	Not Applicable (0)
A. Knowledge:						
1) Basic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) Clinical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B. Clinical skills:						
3) History and physical examination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) Clinical judgment and decision-making	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5) Consultation skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6) Performance in emergencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7) Appropriate utilization of investigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8) Records and reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9) Participation in scientific activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10) Participation in research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C. Diagnostic and procedural skills:						
11) Indications and judgment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12) Technical Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D. Personality and ethics:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13) Punctuality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14) Discipline and reliability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15) Attitude toward patients and relatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16) Attitude toward co-workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17) Ability to supervise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(Total Score / No. of Evaluated Items) * 20 =

The following will be displayed on forms where feedback is enabled...
(for the evaluator to answer...)

- 18) Did you have an opportunity to meet with this trainee to discuss their performance?
- ☐ Yes
- ☐ No

(for the trainee to answer...)

- 19) Are you in agreement with this assessment?
- ☐ Yes
- ☐ No

Please enter any comments you have (if any) on this evaluation.

Appendix F: Respiratory Care Competency Logbook

Respiratory Care Competency Logbook (Supervisor and trainee signatures)					
<ul style="list-style-type: none"> • Medical Critical Care • Surgical Critical Care • Cardiac Critical Care • Adult Emergency Care • Pediatric Critical Care • Neonatal Critical Care • Pediatric and Neonatal Emergency • Quality, Leadership, and Research 					
Student name					
Student ID number					
Training Center					
	Satisfactory (S)		Unsatisfactory (Un)		
Rating:					
Year 1	Observe	Performed		Supervisor	
#		Under supervision	Independently	Rating	Signature
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					

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