Professional Master's Degree

Pulmonary Nursing

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Professional Master's Degree

Pulmonary Nursing

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Credits: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/nursing/professional-master-degree/master-pulmonary-nursing

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01

Introduction

The field of respiratory therapies is currently in high demand due to the high incidence and prevalence of respiratory pathologies, and nursing plays a very important role in the training and monitoring of patients with this type of pathologies. Unfortunately, there is little specific training in respiratory therapies for nursing professionals, and it is precisely for this reason that we have created a program designed and focused on those graduates or diploma-holders in nursing who wish to specialize in this field.

Improve your knowledge of Pulmonary Nursing through this program, where you will find the best teaching material with real cases. Learn with us about the latest advances in the specialty to be able to perform quality nursing practice"

The objective of this Professional Master's Degree in Pulmonary Nursing is to update the knowledge of those nurses interested in respiratory therapies currently available, so that they can acquire new therapeutic skills and abilities, apply them in their usual clinical practice, and in turn contribute to the future development of new research.

Patients undergoing respiratory treatment require proper therapeutic compliance and the nursing staff is responsible for empowering these patients and providing them with individualized care, tools that this Professional Master's Degree provides to achieve excellence in care.

Throughout the program, students will be shown the most prevalent respiratory pathologies, they will perform anatomo-physiological overviews and consider the different alternatives for respiratory therapies in adult patients. Furthermore, it provides up-to-date and innovative information on aerosol therapy, oxygen therapy, sleep disorders treatments, non-invasive and invasive mechanical ventilation for intubated patients. It also provides detailed information about patients with specific characteristics, such as tracheostomized patients, pediatric patients and lung transplant patients, all of whom require specific treatment and care. Lastly, the program opens the door to new avenues of research, providing possible fields of action in terms of respiratory patient education, innovation, telemedicine, gamification and the dissemination of research results.

The program design consists of an online methodology with a total of 1,500 study hours. The whole program is presented through high quality multimedia content. There will be clinical case analyses elaborated by experts in respiratory therapies, explanatory videos for the different therapies, photos of the materials used for the different techniques, and the most recent developments and innovations in the field will be provided.

This **Professional Master's Degree in Pulmonary Nursing** contains the most complete and up-to-date scientific program on the market. The most important features include:

- More than 75 clinical cases presented by experts in Pulmonary Nursing.
- The graphic, schematic, and practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- The latest information on care and intervention in Pulmonary Nursing.
- Contains practical exercises where the self-assessment process can be carried out to improve learning.
- Algorithm-based interactive learning system for decision-making in the situations that are presented to the student.
- With special emphasis on evidence-based nursing and research methodologies in Pulmonary Nursing.
- All of this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments.
- Content that is accessible from any fixed or portable device with an Internet connection

Update your knowledge through this Professional Master's Degree in Pulmonary Nursing.

This Professional Master's Degree may be the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge of Pulmonary Nursing, you will obtain a degree endorsed by TECH Global University.

Increase your decision-making confidence by updating your knowledge through this Professional Master's Degree.

Take the opportunity to learn about the latest advances in Pulmonary Nursing and improve patient care.

Its teaching staff includes professionals in the field of respiratory therapies, who bring to this training the experience of their work, in addition to recognized specialists belonging to leading scientific societies.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive training program designed to train in real situations.

This program is designed around Problem-Based Learning, whereby the nurses must try to solve the different professional practice situations that arise throughout the program. For this reason, nurses will be assisted by an innovative, interactive video system created by renowned and experienced experts in the field of respiratory therapies with extensive teaching experience.

02

Objectives

This Pulmonary Nursing program is designed to facilitate nursing performance in patient care, especially those with respiratory problems or those at risk of suffering them.

This Professional Master's Degree is designed to help you update your knowledge of Pulmonary Nursing with the use of the latest educational technology to contribute quality and safety to decision-making, diagnosis, treatment, and patient support"

General Objectives

- Acquire up-to-date knowledge of existing respiratory therapies in which nursing staff is involved
- Promote strategies to provide individualized quality care for respiratory patients and to serve as a basis for achieving excellence in care
- Favor the acquisition of technical skills in respiratory therapies through audiovisual means and the presentation of quality clinical cases
- Encourage professional stimulation through specialized continued education and research

Make the most of the opportunity and take the step to get up to date on the latest developments in Pulmonary Nursing"

Specific Objectives

Module 1. Anatomo-Physiology of the Respiratory System and Assessment of Pulmonary Function

- Update nursing knowledge of respiratory system anatomy
- Know the physiology of pulmonary ventilation
- Understand how gas diffusion takes place
- Understand how oxygen and carbon dioxide are transported through the blood
- Understand how respiration regulation is carried out
- Analyze the different characteristics of normal breathing to be able to recognize breathing disorders
- Know the different tests to analyze pulmonary function, as well as how to interpret the results
- Learn how to recognize respiratory failure and the nursing care to apply

Module 2. Common Respiratory Pathologies in Adults

- Know the different acute respiratory infections that can occur in adult patients, as well as their main characteristics
- Learn to distinguish the different respiratory pathologies with obstructive origin and the main characteristics of each of them
- Learn to recognize respiratory diseases of restrictive origin and their main characteristics
- Learn the different techniques to perform pleural drainage and other existing treatments for pleural pathologies
- Learn to recognize tumor pathologies and to apply appropriate nursing care for lung cancer cases

Module 3. Aerosol Therapy

- Know the basics of aerosol therapy and when to apply them as treatment
- Learn to apply mechanical ventilation combined with aerosol therapy or oxygen therapy
- Delve deeper into the techniques to apply aerosol therapy, oxygen therapy or mechanical ventilation in tracheostomized patients

Module 4. Oxygen Therapy

- Expand your knowledge about chronic home oxygen therapy
- Know the existing devices used to administer oxygen, both static and portable
- Delve deeper into the different expendable materials currently available for oxygen therapy
- Deepen your understanding of the drugs used in aerosol therapies
- Update on nebulized treatment delivery systems
- Update on inhalation devices
- Learn to apply a nursing care plan for patients undergoing aerosol treatment
- Know the different techniques to determine blood oxygen levels
- Know the complementary materials for oxygen treatment that help improve treatment quality
- Describe the procedures for oxygen administration
- Know the safety and prevention measures necessary to safely administer oxygen without putting the patient at risk
- Know how to apply a nursing care plan to patients undergoing oxygen treatment

Module 5. Sleep Disorders and Mechanical Ventilation

- Explain the sleep and breathing physiology to understand possible disturbances
- Know the different diagnostic methods to detect alterations in sleep patterns
- Gain in-depth knowledge of sleep apnea, their different types and the health risks associated with them
- Know the different treatment alternatives for sleep apnea
- Know the existing techniques to perform CPAP titrations and to adjust the pressure according to patient needs
- Educate sleep apnea patients to improve environmental factors and sleep hygiene to reduce apnea incidence
- Learn to apply a nursing care plan for patients with sleep apnea

Module 6. Non-Invasive Mechanical Ventilation

- Identify physiological ventilation in healthy patients to understand the physiology of non-invasive mechanical ventilation
- Describe the different methods for non-invasive mechanical ventilation
- Gain a deeper understanding of the basic concepts necessary to individualize treatments with non-invasive mechanical ventilation according to patient needs
- Describe the different ventilatory modes to adjust for patient needs
- Update on the different devices used in non-invasive mechanical ventilation
- Recognize the consumables and complementary equipment necessary to provide quality and individualized treatment
- Know the main implementation problems for non-invasive mechanical ventilation and how to apply the best solutions for each case
- Describe a nursing care plan for patients on non-invasive mechanical ventilation

Module 7. Invasive Mechanical Ventilation

- Know the fundamentals of invasive mechanical ventilation, indications, contraindications and possible complications
- Update on invasive mechanical ventilation devices
- Know the different modalities of invasive mechanical ventilation
- Learn the endotracheal intubation technique, as well as the care and maintenance it requires
- Describe the different phases in discontinuing mechanical ventilation
- Know the nursing care plan to be applied in invasive mechanical ventilation
- Describe care tips
- Describe the procedure for installing mechanical ventilation equipment in a patient's home

Module 8. Tracheostomized Patient

- Explain how to carry out correct monitoring of ventilated patients
- Describe tracheostomy procedures, as well as indications, contraindications and complications of tracheostomy
- Know the different types of tracheostomy cannulae, their components and the criteria for selecting the appropriate size for each patient
- Increase your knowledge about required care for tracheotomized patients
- Master the technique for cleaning and changing tracheostomy cannula
- Learn to perform the secretion aspiration technique for tracheostomized patients
- Describe the educational needs of tracheostomized patients. Describe the procedure for decannulation in tracheostomized patients
- Know the nursing care plan for tracheostomized patients

Module 9. Respiratory Therapies in Pediatric Patients

- Gain in-depth knowledge of the anatomo-physiological characteristics in pediatric patients
- Know the different respiratory pathologies that pediatric patients may present
- Explain the correct method of applying respiratory therapies in pediatric patients
- Know the different supportive therapies that pediatric patients may need in conjunction with other therapies
- Describe the various devices for monitoring vital signs in pediatric patients

Module 10. Lung Transplant Patients

- Explain the characteristics of lung transplant patients and the indications for transplantation
- Master the nursing monitoring to be performed after lung transplantation to maintain lung function and improve tolerance to stress, quality of life and survival
- Know the pulmonary function tests to be performed after lung transplantation
- Describe the nursing assessment methods for lung transplant patients
- Describe nursing care plans for lung transplant patients

Module 11. Health Education in Respiratory Patients

- Update on the knowledge of the different methods to assess respiratory health in patients through nursing procedures
- Analyze the different areas of nursing care for respiratory patients
- Know the existing techniques to ensure correct airway hygiene
- Know the manual and instrumental secretion drainage techniques for the management of hypersecretory patients
- Explain ergonomic techniques to improve quality of life in respiratory patients

Module 12. Research and Innovation in Respiratory Therapy

- Understand the necessary knowledge to develop quality research articles
- Understand the different tips in health education for ventilated patients to achieve better compliance
- Know the techniques to educate patients about their own pathology and improve their self-care
- Understand the importance and effectiveness of treatment adherence programs in patients with respiratory therapies
- Describe the contents of a smoking cessation program for respiratory patients
- Understand the importance of nutrition and diet improvement programs in patients with respiratory pathology
- Know the benefits of physical activity and the different types of exercises to improve symptoms and quality of life in respiratory patients
- Analyze the care required for caregivers of respiratory dependent patients
- Describe the contents to be addressed in psychosocial approach programs for tracheostomized patients and/or patients with chronic home oxygen therapy
- Update on telemedicine and its application to monitor patients with respiratory pathologies
- Delve deeper into telemonitoring techniques for the home monitoring of respiratory patients
- Describe innovative gamification methodologies to improve therapeutic adherence in patients with respiratory disease

Module 13. Update on Coronavirus Infections

- Provide training and practical theoretical improvement that will enable a reliable clinical diagnosis supported by the efficient use of diagnostic methods to indicate an effective integral treatment
- Assess and interpret the epidemiological, climatological, social, cultural, and sanitary characteristics and conditions of countries that are conducive to the emergence and development of SARS-CoV-2
- Explain the complex interrelationships between etiological germs and risk factors for the acquisition of these infections
- Address the fundamental role of microbiology, epidemiology, and all healthcare personnel in SARS-CoV-2 infection control
- Explain the pathogenic mechanisms and pathophysiology of SARS-CoV-2 infections
- Describe the clinical, diagnostic and treatment features of SARS-CoV-2 infections
- In-depth and detailed study of latest scientific evidence on the development and expansion of SARS-CoV-2
- Justify the importance of controlling coronavirus diseases to reduce global morbidity and mortality
- Highlight the role of immunity in SARS-CoV-2 infections and their complications
- Highlight the development of vaccines for the prevention of coronavirus infections
- Emphasize the development of future antivirals and other therapeutic modalities for coronavirus infections

03

Skills

After passing the assessments of this Professional Master's Degree in Pulmonary Nursing, nurses will have acquired the professional competencies necessary for a quality and updated praxis based on the latest scientific evidence.

With this program you will be able to master new therapeutic procedures and apply the best care for respiratory therapies"

General Skills

- Possess knowledge that provides a basis to be original in the development and/or application of ideas in a research or clinical context
- Know how to apply the acquired knowledge to everyday practice situations or even in new environments related to the area of study
- Know how to communicate their knowledge and conclusions to specialized and non-specialized audiences in a clear and unambiguous way
- Develop techniques which allow the student to obtain and analyze the necessary information, evaluate its relevance and validity and adapt it to the context
- Know and use Information and Communication Technology, applying it to the field of respiratory therapies
- Understand and be able to apply the basic tools of research in the field of respiratory therapies

Specific Skills

- Detail anatomic and physiologic characteristics of the respiratory apparatus in adult patients
- Describe the most prevalent respiratory pathologies in adults and gain a detailed understanding of their characteristics
- Apply and adapt knowledge in respiratory therapy to routine nursing practice in the treatment of respiratory patients through continuous assessment
- Describe aerosol respiratory therapy techniques in patients with respiratory disease for application in routine practice
- Perfect skills in oxygen therapy treatment and incorporate them into the management of the respiratory patients
- Perform a comprehensive approach to sleep disorders with respiratory involvement that allows for a therapeutic approach with these types of patients
- Describe the different modalities, techniques and equipment used in non-invasive mechanical ventilation and apply them in routine clinical practice
- Learn how to use the different invasive mechanical ventilation devices and their main characteristics in order to incorporate them into routine practice
- Describe the main characteristics of tracheostomized patients in order to individualize treatment
- Recognize the anatomical, physiological and pathological characteristics of pediatric patients and differentiate them from those of adults
- Perform an in-depth approach to nursing care in the lung transplant patient
- Design health education intervention plans for the treatment of patients with respiratory pathologies
- Incorporate new technologies into daily practice knowing their limitations and future potential

04

Course Management

The program includes in its teaching staff renowned experts in respiratory therapy who contribute to this academic program with their work experience. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.

Learn the latest advances in procedures in the field of Pulmonary Nursing from leading professionals"

Guest Director

Dr. Amado Canillas, Javier

- Nursing Supervisor at 12 de Octubre Hospital Hospitalization of Pulomonology, Endocrinology and Rheumatology
- Associate Professor of Health Sciences at the Complutense University of Madrid: Associate Clinician of Medical-Surgical Nursing
- Evaluator of teaching activities for the Technical Secretariat of the Directorate General of Planning, Research and Training of the Community of Madrid
- PhD Cum-Laude, Complutense University of Madrid, 2014
- Degree in Nursing and Master's Degree in Research in Care from the Complutense University of Madrid
- Degree in Information Sciences from the Complutense University of Madrid
- Currently studying a PhD in Audiovisual Communication at Complutense University
- More than 10,000 accredited teaching hours as professor of specialized care for different organizations, in particular for the Nursing College of Madrid and FUDEN

Management

Ms. Santamarina López, Ana

- Nurse with extensive experience in home respiratory therapy
- Degree in Nursing from the University of León., Spain
- University Expert in Digital Teaching in Nursing, by CEU Cardenal Herrera University
- Master's Degree in Social and Health Sciences Research in the University of León

Professors

Ms. Almeida Calderero, Cristina

- Pulmonology, Endocrinology and Rheumatology Service at 12 de Octubre Hospital, Madrid
- University Diploma in Nursing. University of Salamanca
- University Diploma in Occupational Therapy. University of Salamanca
- Collaborator of the Faculty of Nursing, Physiotherapy and Podiatry of the Complutense University of Madrid
- Children's Surgical Unit. Gregorio Marañón Maternity and Children's Hospital, Madrid
- Intensive Care Unit. Clinical University Hospital. Salamanca
- Surgical Resuscitation Unit. Clinical University Hospital. Salamanca
- Primary Care Nurse at Salamanca Health Center

Mr. Amado Durán, Alfredo

- Diploma in Physiotherapy from the European University
- Móstoles Hospital in Madrid. Clinical Training: treatment of the cervical spine
- Traditional Thai Massage Training at Wat Po School of Traditional Medicine Bangkok, Thailand
- Degree in Nursing in the European University
- Master's Degree in Osteopathy, Belgian College of Osteopathy, FBO First, Structural
- Consultations in Chembenyoumba, Mayotte
- Consultations in Sainte Suzanne. Reunion Island
- Consultations at Frejus-Saint-Raphael Hospital. Frejus, France

Ms. Castaño Menéndez, Alba

- IRCU (Intermediate Respiratory Care Unit) at the University Hospital de 12 Octubre
- Nursing Degree, Complutense University of Madrid
- University Expert in Respiratory Patient Care, FUDEN Postgraduate School
- Nurse in home respiratory therapies, MMNI, MMI. Completing TRD at the 12 de Octubre University Hospital
- Emergency Department and Internal Medicine at San Carlos University Hospital

Ms. De Prado de Cima, Silvia

- Degree in Physiotherapy from the University of Valladolid, Spain
- Master's Degree in Thoracic Physiotherapy by the Gimbernat University School and Tomás Cerdà (Campus Sant Cugat)
- Physiotherapist in home respiratory therapies

Ms. García Vañes, Cristina

- Degree in Nursing from the University of Cantabria, Spain
- Nurse in home respiratory therapies

Ms. Rojo Rojo, Angélica

- Degree in Nursing from the University of Valladolid, Spain
- University Expert in Nursing in the Integral Care of the Respiratory Patient
- Nurse in home respiratory therapies

Ms. García Pérez, Silvia

- Pulmonology, Endocrinology and Rheumatology Service at 12 de Octubre Hospital, Madrid
- Higher Technician in Dietetics and Nutrition. San Roque High School Madrid
- University Diploma in Nursing at Complutense University of Madrid
- Internal Medicine Department, 12 de Octubre University Hospital, Madrid, Spain
- Emergency Department, 12 de Octubre University Hospital, Madrid
- ICU and Pediatrics Services, 12 de Octubre University Hospital, Madrid
- Collaborator of the Faculty of Nursing, Physiotherapy and Podiatry of the Complutense University of Madrid, for the teaching of clinical practices of the Nursing Degree

05

Structure and Content

The structure of the contents has been designed by a team of professionals from the best hospitals and universities, aware of the relevance of current training to be able to intervene in the prevention, care and monitoring of respiratory problems in our patients, and committed to quality teaching through new educational technologies.

This Professional Master's Degree in Pulmonary Nursing contains the most complete and up-to-date scientific program on the market"

Module 1. Anatomo-Physiology of the Respiratory System and Assessment of Pulmonary Function

1.1. Respiratory Apparatus Anatomy
- 1.1.1. Upper Airway Anatomy
- 1.1.2. Lower Airway Anatomy
- 1.1.3. Lungs and Respiratory Unit
- 1.1.4. Accessory Structures: Pleura and Respiratory Musculature
- 1.1.5. Mediastinum
- 1.1.6. Pulmonary Perfusion

1.2. Pulmonary Ventilation
- 1.2.1. Respiratory Mechanism
- 1.2.2. Airway Resistance
- 1.2.3. Breathing Work
- 1.2.4. Lung Volume and Capacity

1.3. Gas Diffusion
- 1.3.1. Partial Pressure
- 1.3.2. Diffusion Rate
- 1.3.3. Relationship between Ventilation and Perfusion

1.4. Gas Transportation
- 1.4.1. Blood Oxygen Transport
- 1.4.2. Hemoglobin Dissociation Curve
- 1.4.3. Blood Coal Transport

1.5. Breathing Regulation
- 1.5.1. Respiratory Control Centers
- 1.5.2. Chemical Breathing Control
- 1.5.3. Non-Chemical Breathing Control

1.6. Breathing Characteristics
- 1.6.1. Frequency
- 1.6.2. Rhythm
- 1.6.3. Depth
- 1.6.4. Adventitious Sounds
- 1.6.5. Breathing Patterns

1.7. Functional Respiratory Examination. Pulmonary Function Tests
- 1.7.1. Spirometry. Interpretation of Results
- 1.7.2. Bronchial Provocation Tests
- 1.7.3. Static Pulmonary Volumes. Body Plethysmography
- 1.7.4. Pulmonary Resistance Study
- 1.7.5. Pulmonary Elasticity and Distensibility. Compliance
- 1.7.6. Study of Respiratory Muscle Function
- 1.7.7. Pulmonary Diffusion Tests. DLCO
- 1.7.8. Gas Exchange: Arterial Gasometry. Acid-base Equilibrium
- 1.7.9. Stress Tests. 6-Minute Walk and Shuttle Test
- 1.7.10. Pulse Oximetry
- 1.7.11. Bronchoscopy.
- 1.7.12. X-Ray Tests

1.8. Respiratory Patient Assessment
- 1.8.1. Quality of Life of the Respiratory Patient: Saint George Questionnaire
- 1.8.2. Nursing Assessment of the Respiratory Patient by Functional Patterns

Module 2. Common Respiratory Pathologies in Adults

2.1. Respiratory Insufficiency
- 2.1.1. Acute Respiratory Insufficiency
- 2.1.2. Chronic Respiratory Insufficiency

2.2. Acute Respiratory Infections in Adults
- 2.2.1. Common Cold
- 2.2.2. Influenza
- 2.2.3. Pharyngitis and Tonsillitis
- 2.2.4. Acute Bronchitis
- 2.2.5. Nursing Process in Respiratory Infections

2.3. Respiratory Diseases of Obstructive Origin
- 2.3.1. Chronic Obstructive Pulmonary Disease
- 2.3.2. Emphysema
- 2.3.3. Asthma in Adults
- 2.3.4. Cystic Fibrosis in Adults
- 2.3.5. Chronic Bronchitis
- 2.3.6. Bronchiectasis

2.4. Respiratory Diseases of Restrictive Origin
- 2.4.1. Restrictive Lung Diseases: Atelectasis, Pulmonary Edema, Pulmonary Fibrosis, Pneumonia, Sarcoidosis, ARDS, Tuberculosis
- 2.4.2. Pleural Restrictive Diseases: Pleural Effusion, Empyema, Hemothorax, Pneumothorax, Chylothorax
- 2.4.3. Thoracic-Skeletal Pathologies: Thoracic Alterations, Obesity, Scoliosis, Kyphosis, Kyphoscoliosis
- 2.4.4. Neuromuscular Disorders: Myasthenia Gravis, Guillain-Barré Syndrome, ALS, Muscular Dystrophies

2.5. Pleural Drainage
- 2.5.1. Pleural Drainage Systems
- 2.5.2. Thoracentesis
- 2.5.3. Pleural Biopsy
- 2.5.4. Pharmacological Treatments in Pleural Pathology: Pleurodesis and Fibrinolytics

2.6. Tumoral Process
- 2.6.1. Lung Cancer
- 2.6.2. Nursing Care of the Patient with Lung Cancer

2.7. Areas of Nursing Care for Respiratory Patients
- 2.7.1. Emergency Care
- 2.7.2. Hospitalization. Nosocomial Pneumonia
- 2.7.3. External Consultation
- 2.7.4. Critical Care Units
- 2.7.5. Sleep Units
- 2.7.6. Home Respiratory Therapies

Module 3. Aerosol Therapy

3.1. Basic Concepts of Aerosol Therapy
- 3.1.1. Definition
- 3.1.2. Indications and Contraindications
- 3.1.3. Drugs Used

3.2. Theoretical Principles of Aerosol Therapy
- 3.2.1. Types of Aerosol
- 3.2.2. Particle Size and Pulmonary Deposition
- 3.2.3. Dispensing Mechanism and Inhalation Technique
- 3.2.4. Geometry and Characteristics of Airway
- 3.2.5. Inspiratory Maneuver
- 3.2.6. Mucociliary Clearance

3.3. Nebulizers: Equipment and Delivery Systems
- 3.3.1. High- and Low-Flow Pneumatic Nebulizers
- 3.3.2. Ultrasonic Nebulizers
- 3.3.3. Net Nebulizers
- 3.3.4. Nebulizer Selection Criteria
- 3.3.5. Masks and Mouthpieces
- 3.3.6. Cleaning and Maintenance
- 3.3.7. Complications
- 3.3.8. Nebulizer Treatment Monitoring

3.4. Inhalation Devices
- 3.4.1. Inhalation Technique Education
- 3.4.2. Pressurized Cartridge Inhalers
- 3.4.3. Inhalation Chambers and Spacers
- 3.4.4. Dry Powder Inhalers
- 3.4.5. Soft Vapor Inhalers
- 3.4.6. Cleaning and Maintenance

3.5. Nursing Care Plan in Aerosol Therapy
- 3.5.1. NANDA Diagnosis
- 3.5.2. Nursing Outcomes and Interventions

Module 4. Oxygen Therapy

4.1. Blood Oxygen Measurement
- 4.1.1. Arterial Blood Gas Analysis. Interpretation of Results
- 4.1.2. Venous Blood Gas Analysis. Interpretation of Results
- 4.1.3. Oximetry
- 4.1.4. Capnography

4.2. Chronic Home Oxygen Therapy
- 4.2.1. General Considerations
- 4.2.2. Indications and Contraindications
- 4.2.3. Side Effects and Risks

4.3. Devices for Administering Oxygen
- 4.3.1. Low- and High-Flow Systems
- 4.3.2. Oxygen Bottles
- 4.3.3. Static Concentrators
- 4.3.4. Portable Concentrators
- 4.3.5. Liquid Oxygen

4.4. Oxygen Therapy Consumables
- 4.4.1. Nasal Cannulae
- 4.4.2. Oxygen Masks
- 4.4.3. Reservoirs
- 4.4.4. Conduit Tubes
- 4.4.5. Oxygen Saving Systems

4.5. Supplementary Materials for Administering Oxygen
- 4.5.1. Flowmeters
- 4.5.2. Pressure Reducers
- 4.5.3. Humidifiers

4.6. Procedures for Administering Oxygen
- 4.6.1. Home Installation Instructions
- 4.6.2. Safety and Prevention
- 4.6.3. Patient Education
- 4.6.4. Monitoring Patients with Chronic Domiciliary Oxygen Therapy

4.7. Nursing Care Plan in Oxygen Therapy
- 4.7.1. NANDA Diagnosis
- 4.7.2. Nursing Outcomes and Interventions

Module 5. Sleep Disorders and Mechanical Ventilation

5.1. Sleep and Breathing Physiology
- 5.1.1. Snoring
- 5.1.2. The Respiratory Tract During Sleep
- 5.1.3. Sleep Phases
- 5.1.4. Hormones

5.2. Sleep Disorders Diagnosis
- 5.2.1. Symptomatology
- 5.2.2. Daytime Hypersomnolence Test
- 5.2.3. Hospital and Home Polygraphs
- 5.2.4. Differences between Polygraph and Polysomnography

5.3. Sleep Apnea
- 5.3.1. Definition of Sleep Apnea
- 5.3.2. Definition of Other Basic Concepts
- 5.3.3. Classification: Obstructive, Central and Mixed Apnea
- 5.3.4. Clinical Manifestations
- 5.3.5. Short and Long-Term Risks

5.4. Treatment of Sleep Apnea
- 5.4.1. CPAP as First Treatment Option
- 5.4.2. Alternative Treatments
- 5.4.3. Surgical Treatment

5.5. Pressure Titration
- 5.5.1. Manual Titration
- 5.5.2. Automatic Titration
- 5.5.3. Titration through Formulas

5.6. Nursing Care Plan in Sleep Apnea Therapy
- 5.6.1. Sleep Apnea Patient Education
- 5.6.2. NANDA Diagnosis
- 5.6.3. Nursing Outcomes and Interventions

Module 6. Non-Invasive Mechanical Ventilation

6.1. Pathophysiology
- 6.1.1. Physiological Ventilation
- 6.1.2. Physiology of Non-invasive Mechanical Ventilation
- 6.1.3. Indications and Contraindications

6.2. Ventilation Methods
- 6.2.1. Negative Pressure Ventilation
- 6.2.2. Positive Pressure Ventilation

6.3. Basic Concepts
- 6.3.1. IPAP
- 6.3.2. EPAP
- 6.3.3. Trigger
- 6.3.4. Cycling
- 6.3.5. PEEP
- 6.3.6. Inspiration/Expiration Ratio
- 6.3.7. Pressure Support
- 6.3.8. Expiratory Pressure Relief
- 6.3.9. Rise Time
- 6.3.10. Ramp
- 6.3.11. Alarms
- 6.3.12. Other Concepts

6.4. Ventilatory Modes
- 6.4.1. Spontaneous Ventilation
- 6.4.2. Synchronized Intermittent Mandatory Ventilation
- 6.4.3. Controlled or Assisted-Controlled Ventilation
- 6.4.4. Pressure-Controlled Ventilation
- 6.4.5. Volume-Controlled Ventilation
- 6.4.6. Alternative Ventilatory Modes

6.5. Physiology of Non-invasive Mechanical Ventilation
- 6.5.1. CPAP
- 6.5.2. BIPAP
- 6.5.3. Conventional Ventilator
- 6.5.4. Servo-Ventilation

6.6. Necessary Material
- 6.6.1. Masks
- 6.6.2. Tubing
- 6.6.3. Filters
- 6.6.4. Humidifiers
- 6.6.5. Other Equipment
- 6.6.6. Cleaning and Maintenance

6.7. Main Adjustment Problems and Possible Solutions
- 6.7.1. Equipment-Related
- 6.7.2. Pressure-Related
- 6.7.3. Mask-Related
- 6.7.4. Tubing-Related
- 6.7.5. Humidifier-Related
- 6.7.6. Other Complications

6.8. Equipment Installation at Patient's Home
- 6.8.1. Patient Preparation
- 6.8.2. Equipment Programming
- 6.8.3. Mask Fitting
- 6.8.4. Pressure Adaptation
- 6.8.5. Patient Education

6.9. Monitoring Patients on Non-Invasive Mechanical Ventilation
- 6.9.1. Home Visits
- 6.9.2. Importance of Therapeutic Compliance
- 6.9.3. Patient Education

6.10. Non-Invasive Mechanical Ventilation Combined with Other Treatments
- 6.10.1. NIMV and Aerosol Therapy
- 6.10.2. NIMV and Oxygen Therapy

6.11. Nursing Care Plan in NIMV Therapy
- 6.11.1. NANDA Diagnosis
- 6.11.2. Nursing Outcomes and Interventions

Module 7. Invasive Mechanical Ventilation

7.1. Fundamentals of Invasive Mechanical Ventilation (IMV)
- 7.1.1. Definition and Objectives
- 7.1.2. Indications and Contraindications
- 7.1.3. Complications

7.2. IMV Devices
- 7.2.1. Types of Ventilators
- 7.2.2. IMV Modalities
- 7.2.3. Phases of the Respiratory Cycle
- 7.2.4. Common Parameters
- 7.2.5. Total Breathing Substitution
- 7.2.6. Partial Breathing Substitution

7.3. Endotracheal Intubation
- 7.3.1. Orotracheal Intubation Technique
- 7.3.2. Care and Maintenance of Intubated Patients

7.4. Suspension of Mechanical Ventilation
- 7.4.1. Pulmonary Function Study to Determine Discontinuation
- 7.4.2. Spontaneous Breathing Test
- 7.4.3. Extubation
- 7.4.4. Tracheostomy in Cases of Extubation Failure

7.5. Nursing Care Plan in IMV Therapy
- 7.5.1. Specific Nursing Care in IMV
- 7.5.2. NANDA Diagnosis
- 7.5.3. Nursing Outcomes and Interventions

Module 8. Tracheostomized Patient

8.1. Fundamentals of Tracheostomy
- 8.1.1. Definition
- 8.1.2. Types of Tracheostomies
- 8.1.3. Indications and Contraindications
- 8.1.4. Complications

8.2. Tracheostomy Cannula
- 8.2.1. Types of Cannulas
- 8.2.2. Cannula Components
- 8.2.3. Cannula Caliber Selection Criteria

8.3. Care of Tracheostomized Patients
- 8.3.1. Preoperative Care
- 8.3.2. Stoma Care
- 8.3.3. Cannula Cleaning
- 8.3.4. Changing Cannula
- 8.3.5. Secretion Aspirator
- 8.3.6. Respiratory Therapy

8.4. Tracheostomized Patient Education
- 8.4.1. Inspired Air Humidification Systems
- 8.4.2. Phonation
- 8.4.3. Nutrition and Hydration
- 8.4.4. Prevention of Respiratory Tract Infection

8.5. Aerosol Therapy, Ventilation and Oxygen Therapy in Tracheostomized Patients
- 8.5.1. Aerosol Therapy
- 8.5.2. Oxygen Therapy
- 8.5.3. Mechanical Ventilation

8.6. Decannulation
- 8.6.1. Decannulation Procedure
- 8.6.2. Patient Education

8.7. Nursing Care Plan for Tracheostomized Patients
- 8.7.1. NANDA Diagnosis
- 8.7.2. Nursing Outcomes and Interventions

Module 9. Respiratory Therapies in Pediatric Patients

9.1. Pediatric Patient Anatomophysiology
- 9.1.1. Respiratory Apparatus Anatomy in Pediatrics
- 9.1.2. Respiratory System Physiology in Pediatrics

9.2. Respiratory Pathology in Pediatric Patients
- 9.2.1. Foreign Bodies
- 9.2.2. Pharyngotonsillitis
- 9.2.3. Laryngitis
- 9.2.4. Hyaline Membrane Disease
- 9.2.5. Childhood Asthma
- 9.2.6. Bronchiolitis
- 9.2.7. Cystic Fibrosis
- 9.2.8. Acute Laryngotracheobronchitis (Croup)
- 9.2.9. Neurological Disorders: Cerebral Palsy in Children
- 9.2.10. Summary of Main Respiratory Viruses in Childhood

9.3. Respiratory Therapy in Pediatrics
- 9.3.1. Respiratory Therapy in Children
- 9.3.2. Aerosol Therapy
- 9.3.3. Oxygen Therapy
- 9.3.4. Mechanical Ventilation

9.4. Support Therapies
- 9.4.1. Cough Assistance
- 9.4.2. Secretion Aspirator
- 9.4.3. SmartVest
- 9.4.4. Bag Valve Mask (Ambu)

9.5. Counter Monitoring
- 9.5.1. Apnea Monitor
- 9.5.2. Pulse Oximetry

Module 10. Lung Transplant Patients

10.1. Basic Concepts of Lung Transplantation
- 10.1.1. Definition and Types of Lung Transplants
- 10.1.2. Indications
- 10.1.3. Risk
- 10.1.4. Postoperative Expectations

10.2. Post-Transplant Monitoring
- 10.2.1. Respiratory Therapy in Lung Transplant Patients
- 10.2.2. Control of Immunosuppressive Drug Treatment
- 10.2.3. Pulmonary Function Maintenance
- 10.2.4. Stress Tolerance
- 10.2.5. Quality of Life Improvement and Survival

10.3. Pulmonary Function Tests
- 10.3.1. Exhaled Nitric Oxide
- 10.3.2. Immunological Monitoring
- 10.3.3. Bronchoscopy

10.4. Nursing Care Plan for Transplant Patients
- 10.4.1. Assessment of Transplant Patient: Barthel Index, Modified Dyspnea Scale
- 10.4.2. NANDA Diagnosis
- 10.4.3. Nursing Outcomes and Interventions

Module 11. Health Education in Respiratory Patients

11.1. Education on One's Own Illness
- 11.1.1. Basic Knowledge Concerning Disease
- 11.1.2. Changing Habits
- 11.1.3. Establishing Healthy Habits
- 11.1.4. Self-Care Improvement

11.2. Treatment Adherence Programs
- 11.2.1. Importance of Adherence to Treatment
- 11.2.2. Adherence Problem Detection
- 11.2.3. Problem Solving

11.3. Smoking Cessation Programs
- 11.3.1. Risks of Tobacco Use
- 11.3.2. Respiratory Health Benefits of Smoking Cessation

11.4. Nutritional Education
- 11.4.1. Importance of Adequate Food and Nutrition in Respiratory Patients
- 11.4.2. BMI Calculation and Weight Loss

11.5. Promoting Physical Activity
- 11.5.1. Benefits of Physical Activity in Respiratory Patients
- 11.5.2. Classification of Types of Physical Activity

11.6. Caring for the Caregiver
- 11.6.1. Fatigue in Dependent Patient Caregivers
- 11.6.2. Caregiver Training

11.7. Psychosocial Approach Programs
- 11.7.1. Psychosocial Management of OCD Patients
- 11.7.2. Psychosocial Management of Tracheostomized Patients

Module 12. Research and Innovation in Respiratory Therapy

12.1. Application of Telemedicine in Respiratory Patient Monitoring
- 12.1.1. Pulse Oximetry Telemonitoring
- 12.1.2. Role of Telemonitoring in Acute Respiratory Disorders

12.2. Application of Telemedicine in Respiratory Patient Monitoring
- 12.2.1. Telemonitoring for Continued Patient Monitoring
- 12.2.2. Improving Therapeutic Adherence through Telemonitoring
- 12.2.3. Devices with Built-In Bluetooth

12.3. Gamification Adherence Improvement in Respiratory Patient
- 12.3.1. Gamification Definition
- 12.3.2. Application of Gamification in Health
- 12.3.3. Benefits of Gamification Therapy

12.4. Practical Tips for Conducting Research Searches
- 12.4.1. Online Database Information Search
- 12.4.2. Major Sources of Information
- 12.4.3. APA Guidelines for Article Submissions
- 12.4.4. Bibliographic Reference Styles

Module 13. Update on Coronavirus Infections

13.1. Discovery and Evolution of Coronaviruses
- 13.1.1. Discovery of Coronaviruses
- 13.1.2. Global Trends in Coronavirus Infections

13.2. Main Microbiological Characteristics and Members of the Coronavirus Family
- 13.2.1. General Microbiological Characteristics of Coronaviruses
- 13.2.2. Viral Genome
- 13.2.3. Principal Virulence Factors

13.3. Epidemiological Changes in Coronavirus Infections from its Discovery to the Present
- 13.3.1. Morbidity and Mortality of Coronavirus Infections from their Emergence to the Present

13.4. The Immune System and Coronavirus Infections
- 13.4.1. Immunological Mechanisms Involved in the Immune Response to Coronaviruses
- 13.4.2. Cytokine Storm in Coronavirus Infections and Immunopathology
- 13.4.3. Modulation of the Immune System in Coronavirus Infections

13.5. Pathogenesis and Pathophysiology of Coronavirus Infections
- 13.5.1. Pathophysiological and Pathogenic Alterations in Coronavirus Infections
- 13.5.2. Clinical Implications of the Main Pathophysiological Alterations

13.6. Risk Groups and Transmission Mechanisms of Coronaviruses
- 13.6.1. Main Sociodemographic and Epidemiological Characteristics of Risk Groups Affected by Coronavirus
- 13.6.2. Coronavirus Mechanisms of Transmission

13.7. Natural History of Coronavirus Infections
- 13.7.1. Stages of Coronavirus Infection

13.8. Latest Information on Microbiological Diagnosis of Coronavirus Infections
- 13.8.1. Sample Collection and Shipment
- 13.8.2. PCR and Sequencing
- 13.8.3. Serology Testing
- 13.8.4. Virus Isolation

13.9. Current Biosafety Measures in Microbiology Laboratories for Coronavirus Sample Handling
- 13.9.1. Biosafety Measures for Coronavirus Sample Handling

13.10. Up-to-Date Management of Coronavirus Infections
- 13.10.1. Prevention Measures
- 13.10.2. Symptomatic Treatment
- 13.10.3. Antiviral and Antimicrobial Treatment in Coronavirus Infections
- 13.10.4. Treatment of Severe Clinical Forms

13.11. Future Challenges in the Prevention, Diagnosis, and Treatment of Coronavirus
- 13.11.1. Global Challenges for the Development of Prevention, Diagnostic, and Treatment Strategies for Coronavirus Infections

A unique, key, and decisive training experience to boost your professional development"

06

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

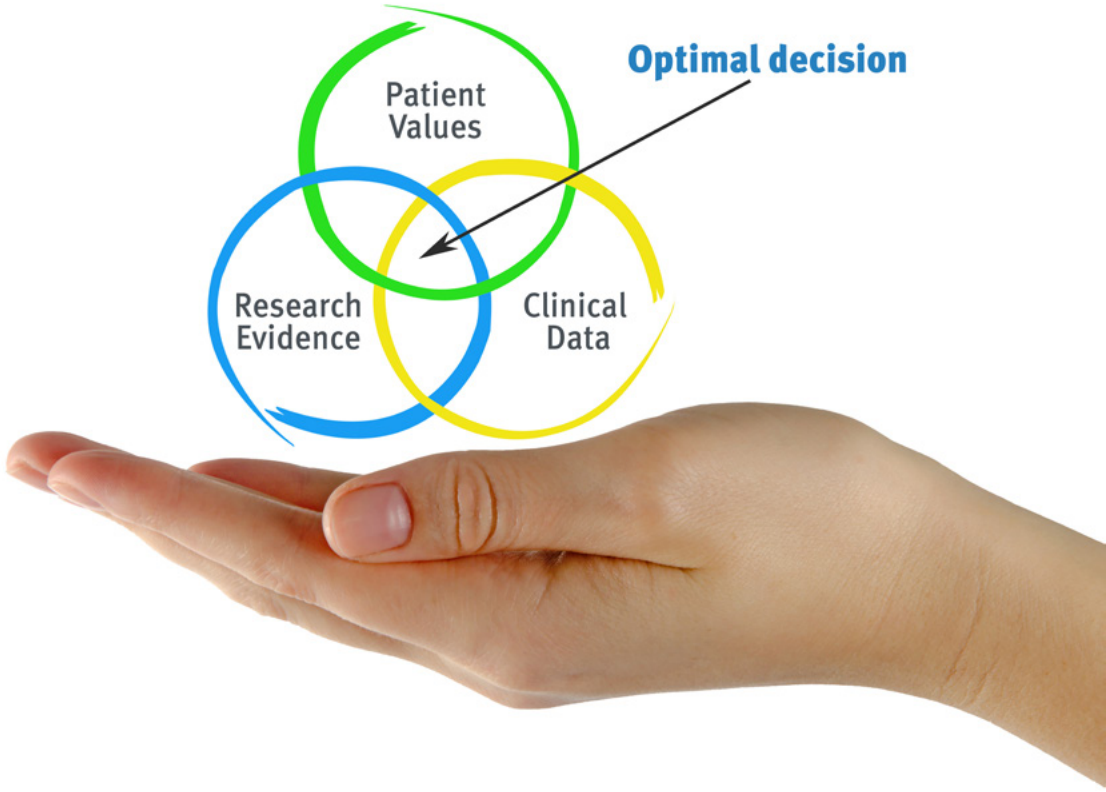
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH Nursing School we use the Case Method

In a given situation, what should a professional do? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Nurses learn better, faster, and more sustainably over time.

With TECH, nurses can experience a learning methodology that is shaking the foundations of traditional universities around the world.



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the real conditions in professional nursing practice.

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

The effectiveness of the method is justified by four fundamental achievements:

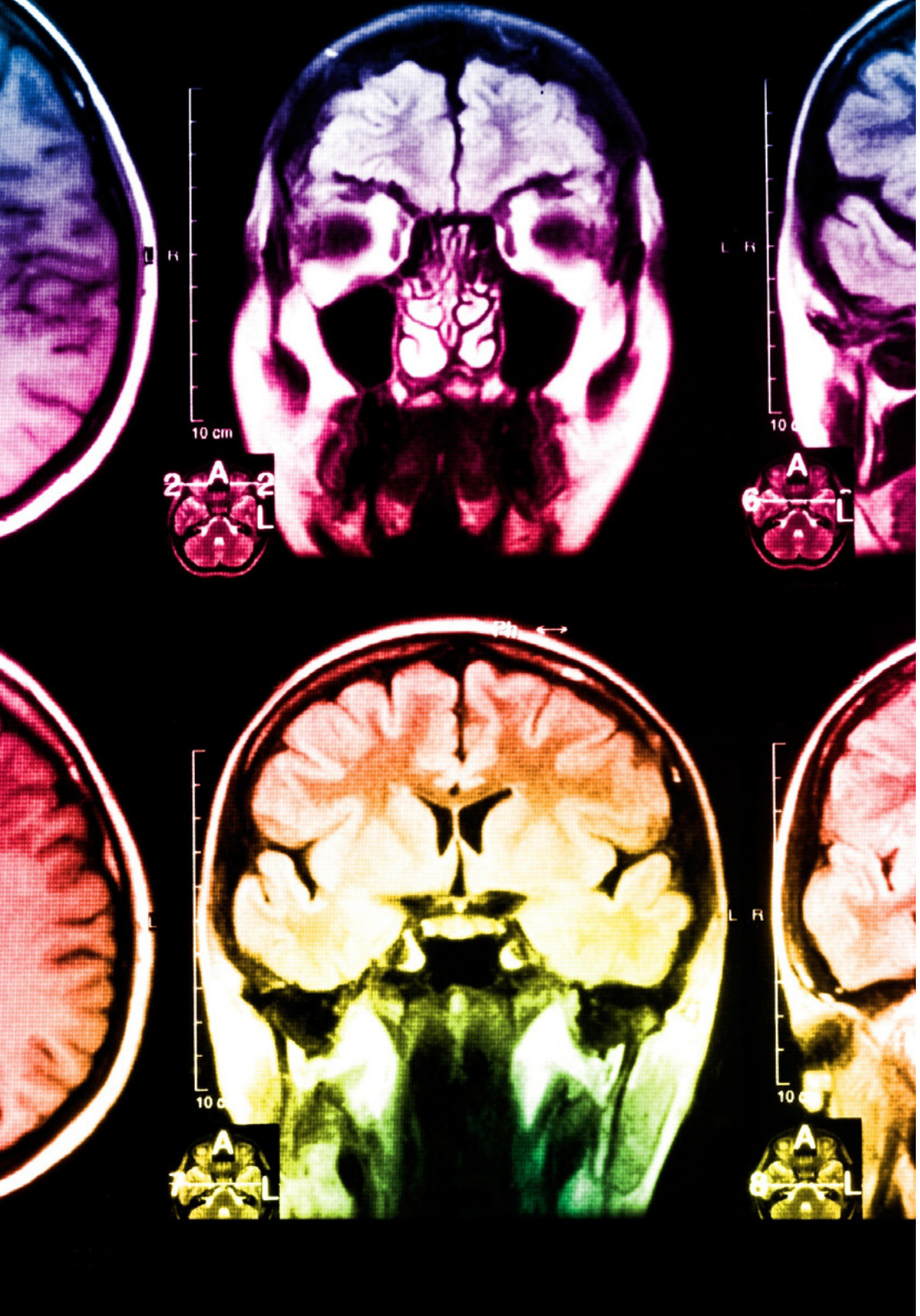
1. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.

The nurse will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is really specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Nursing Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch them as many times as you want.

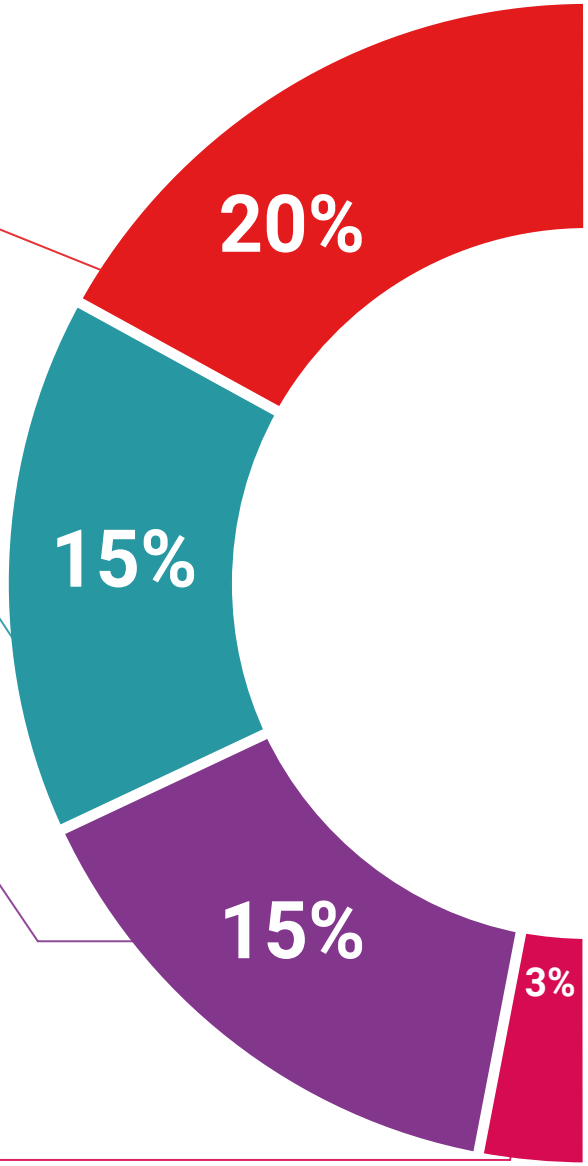
Interactive Summaries

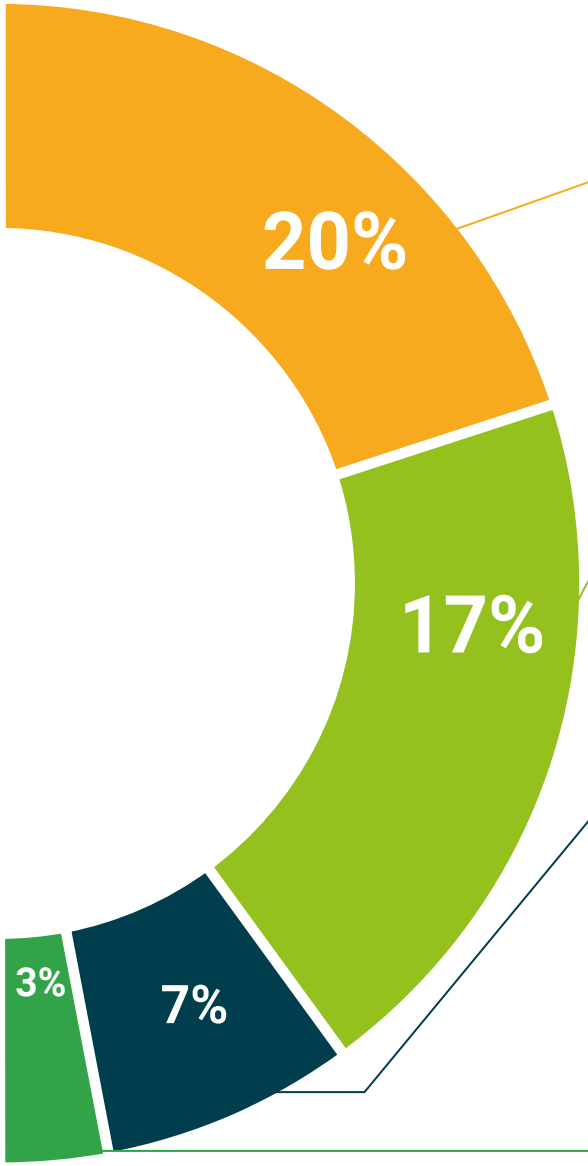
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.

07

Certificate

The Professional Master's Degree in Pulmonary Nursing guarantees you, in addition to the most rigorous and updated training, access to a Professional Master's Degree issued by TECH Global University.

Successfully complete this program and receive your university degree without travel or laborious paperwork”

This private qualification will allow you to obtain a **Professional Master's Degree diploma in Pulmonary Nursing** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (***official bulletin***). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Professional Master's Degree in Pulmonary Nursing**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Professional Master's Degree in Pulmonary Nursing

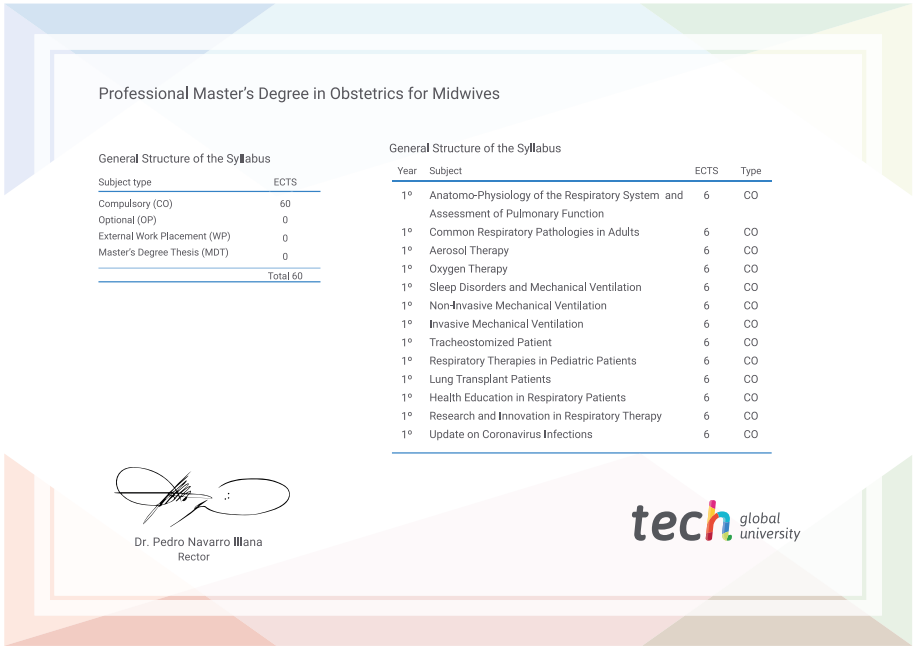
This is a private qualification of 1,800 hours of duration equivalent to 60 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates


Professional Master's Degree in Obstetrics for Midwives

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 60

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Anatomo-Physiology of the Respiratory System and Assessment of Pulmonary Function	6	CO
1º	Common Respiratory Pathologies in Adults	6	CO
1º	Aerosol Therapy	6	CO
1º	Oxygen Therapy	6	CO
1º	Sleep Disorders and Mechanical Ventilation	6	CO
1º	Non-Invasive Mechanical Ventilation	6	CO
1º	Invasive Mechanical Ventilation	6	CO
1º	Tracheostomized Patient	6	CO
1º	Respiratory Therapies in Pediatric Patients	6	CO
1º	Lung Transplant Patients	6	CO
1º	Health Education in Respiratory Patients	6	CO
1º	Research and Innovation in Respiratory Therapy	6	CO
1º	Update on Coronavirus Infections	6	CO

Dr. Pedro Navarro Illana
Rector

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*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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Professional Master's Degree

Pulmonary Nursing

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Global University**
- Credits: **60 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Professional Master's Degree

Pulmonary Nursing

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