

Postgraduate Diploma
Respiratory, Neurological and Infectious
Emergencies in the PICU





Postgraduate Diploma Respiratory, Neurological and Infectious Emergencies in the PICU

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-respiratory-neurological-infectious-emergencies-picu

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01

Introduction

Respiratory, Neurologic and Infectious Emergencies continue to be areas of concern and priority care in Pediatric Intensive Care Units (PICUs). With the evolution of the COVID-19 pandemic, an increase in the incidence of severe respiratory illness in children has been observed, requiring an agile and adaptive response by medical teams. In addition, neurological emergencies, such as Seizures, Head Trauma and Neuromuscular Diseases, continue to be major challenges in the PICU. In this context, TECH has created a complete online and flexible program, requiring only a device with Internet access to use the didactic materials. In addition, this program uses the innovative learning methodology called Relearning.



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With this 100% online Postgraduate Diploma, you will cover fundamental aspects for the care of critically ill pediatric patients, acquiring practical skills and high-level theoretical knowledge"

Currently, Respiratory, Neurological and Infectious Emergencies continue to represent significant challenges in Pediatric Intensive Care Units (PICU). With the evolution of medicine and the increasing complexity of cases, medical teams are faced with a wide range of conditions that require specialized care and advanced resources.

This is how this Postgraduate Diploma in Respiratory, Neurological and Infectious Emergencies was born, which will address crucial aspects such as the early recognition of Acute Respiratory Failure in pediatric patients; the application of airway management techniques, including endotracheal intubation; and the management of complications associated with Chronic Respiratory Diseases. The interpretation of diagnostic tests and the development of ventilatory modes to optimize care will also be covered in depth.

Likewise, professionals will be skilled to identify and appropriately manage a variety of critical situations, from Epileptic Seizures, to signs of increased Intracranial Pressure and Cerebral Herniation. In addition, the diagnosis and treatment of conditions such as Pediatric Coma will be prioritized, as well as the application of neuroprotective techniques to mitigate secondary brain damage.

Finally, experts will be prepared to identify early signs of Sepsis and Septic Shock in children, applying rapid response protocols and initial management strategies. Likewise, the differential diagnosis of common Infectious Diseases in the PICU, as well as the recognition and treatment of complications associated with Severe Infections and Sepsis will be deepened.

In this scenario, TECH has created a complete online program, specifically designed to meet the individual needs of students, avoiding obstacles such as having to move to a physical location or comply with an established schedule. Additionally, this program is supported by the innovative Relearning methodology, which focuses on the repetition of fundamental concepts to guarantee an effective and fluid understanding of the contents.

This **Postgraduate Diploma in Respiratory, Neurological and Infectious Emergencies in the PICU** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in Respiratory, Neurological and Infectious Emergencies in the Pediatric ICU
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ 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



You will be specialized to recognize and respond effectively to a wide range of respiratory, neurological and infectious emergencies, as well as the competence to implement specialized interventions"

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You will delve into Neurological Emergencies, gaining the skills necessary to identify and manage Seizures, alterations in consciousness and signs of increased Intracranial Pressure”

The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 immersive education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

You will cover relevant aspects such as the interpretation of laboratory and radiological studies for an accurate evaluation of pediatric patients and radiological studies for an accurate evaluation of pediatric patients, through an extensive library of multimedia resources.

You will delve into the management of ventilatory modes and the pathophysiology of various pathologies, such as Bronchiolitis and Pediatric Acute Respiratory Distress Syndrome. With all TECH's quality guarantees!



02 Objectives

Among the objectives of the program is the development of skills to recognize and manage acute respiratory, neurological and infectious emergencies, as well as the ability to implement airway management and neuroprotection interventions effectively. Professionals will also be equipped with the necessary knowledge to interpret relevant diagnostic tests and apply updated protocols for the treatment of critical conditions in the pediatric population. In addition, the coordination of multidisciplinary care and the acquisition of leadership skills will be fostered to ensure comprehensive and high quality care.



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The objectives of the Postgraduate Diploma are multiple and cover a wide range of competencies fundamental to the comprehensive care of critically ill pediatric patients. What are you waiting for to enroll?"



General Objectives

- ◆ Recognize and evaluate Acute Respiratory Failure
- ◆ Become familiar with the modes of Invasive and Non Invasive Mechanical Ventilation
- ◆ Gain profound Pediatric Neurological knowledge, expanding knowledge of neurological anatomy and pathophysiology to enhance the evaluation and treatment of neurological emergencies in children
- ◆ Promote Comprehensive Neurological Management, including initial assessment, emergency interventions, long-term follow-up and family support
- ◆ Specialize professionals to rapidly and accurately identify and assess infectious emergencies and Sepsis in children
- ◆ Promote understanding of infection and Sepsis prevention strategies, as well as educate in the promotion of healthy practices and infection control measures



The main objective of the program will be to specialize you to provide optimal and specialized care to children requiring intensive care due to respiratory, neurological or infectious emergencies"





Specific Objectives

Module 1. Respiratory Emergencies in the Pediatric Intensive Care Unit

- ♦ Recognize the signs and symptoms of Acute Respiratory Failure in pediatric patients
- ♦ Implement airway management in emergency situations, including Endotracheal Intubation
- ♦ Manage the complications associated with Chronic Respiratory Disease in the context of an emergency
- ♦ Interpret the results of diagnostic tests, including arterial blood gases and imaging studies
- ♦ Develop the most frequent ventilatory modes in VMC
- ♦ Determine the indications and contraindications of NIV
- ♦ Understand the pathophysiology of bronchiolitis and the pathophysiology of status asthmaticus
- ♦ Identify Pediatric Acute Respiratory Distress Syndrome
- ♦ Become familiar with the patient with Chronic Respiratory Pathology in PICU
- ♦ Understand the pathophysiology and treatment of Pulmonary Hypertension

Module 2. Neurological Emergencies in the Pediatric Intensive Care Unit

- ♦ Identify and appropriately manage seizures and status epilepticus in children
- ♦ Diagnose and treat causes of altered consciousness, including pediatric coma
- ♦ Recognize and respond to signs of increased Intracranial Pressure and Brain Herniation
- ♦ Identify and treat central nervous system infections, such as Meningitis and Encephalitis
- ♦ Apply neuroprotective techniques to minimize secondary brain damage

- ♦ Evaluate and manage acute complications of Chronic Neurological Diseases in children
- ♦ Coordinate multidisciplinary care and rehabilitation for pediatric patients who have experienced neurologic emergencies
- ♦ Identify and treat Idiopathic Intracranial Hypertension and other emergency conditions that may present with neurologic symptoms

Module 3. Infectious Emergencies and Sepsis in the Pediatric Intensive Care Unit

- ♦ Identify the early signs of Sepsis and Septic Shock in children and apply rapid response protocols
- ♦ Implement initial management strategies, including fluid resuscitation and appropriate use of antimicrobials
- ♦ Understand and apply current guidelines for the management of pediatric sepsis and severe infections
- ♦ Perform differential diagnosis of common PICU infectious diseases
- ♦ Manage common complications associated with severe infections and Sepsis, such as multiple organ failure
- ♦ Interpret laboratory studies and radiological findings relevant to the evaluation of infections and Sepsis
- ♦ Recognize and treat emerging and re-emerging infections in the pediatric setting

03

Course Management

The professors are experts from various disciplines, with solid academic specialization and extensive clinical experience in the management of critically ill pediatric patients. Therefore, their commitment to academic excellence and constant updating will allow them to impart updated and relevant knowledge, as well as to share practical experiences and real clinical cases that will enrich the learning of the graduates. In addition, their ability to effectively transmit complex concepts and specialized techniques will guarantee a comprehensive and high quality preparation for health professionals.





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The faculty will be key players in your specialization in Pediatric Intensive Care, providing a multidisciplinary and updated approach to face the emerging challenges in the PICU"

Management



Dr. Ocete Hita, Esther

- ♦ Head of the Pediatric Hospitalization Section of Virgen de las Nieves University Hospital of Granada
- ♦ FEA Pediatrics in the Pediatric Intensive Care Unit of Virgen de las Nieves University Hospital of Granada
- ♦ Associate Professor in the Faculty of Medicine at the University of Granada
- ♦ Specialist Pediatrician
- ♦ Doctor of Medicine
- ♦ Degree in Medicine

Professors

Dr. Mora Navarro, David

- ♦ Chief of the Pediatrics Service at the Juan Ramón Jiménez Hospital
- ♦ Area Specialist in the Neonatal-Pediatric Intensive Care Unit of the Juan Ramón Jiménez Hospital
- ♦ Master's Degree in Research Methodology in Health Sciences
- ♦ Graduate in Medicine and Surgery from the University of Seville
- ♦ Member of: Pediatric Society of Western Andalusia and Extremadura

Dr. De la Cruz Moreno, Jesús

- ♦ Chief of the Pediatrics Service at the Jaén Hospital Complex
- ♦ Specialist Pediatric Physician at the Jaen Hospital Complex
- ♦ Pediatric Specialist Physician at the National Health Institute and the San Pedro de Alcántara Hospital
- ♦ Specialist Pediatrician
- ♦ Degree in Medicine and Surgery from the University of Granada
- ♦ Member of: IAVANTE Foundation

Dr. Martínez Pardo, Luz María

- ♦ Pediatric Area Specialist at the University Hospital of Jaén
- ♦ Doctor in Pediatrics and Child Care by the University of Granada
- ♦ Instructor of Basic and Advanced Pediatric and Neonatal CPR
- ♦ Specialist in Pediatrics and specific areas by the Virgen de las Nieves University Hospital
- ♦ Degree in Medicine and Surgery in 2006 by the University of Granada

D. Cano Padilla, Francisco Javier

- ♦ President of the Pediatric Nursing Association of the Region of Murcia (AEPEMUR)
- ♦ Pediatric Nurse in the Pediatric Intensive Care Unit from the Virgen de la Arrixaca University Hospital, Murcia
- ♦ Pediatric Nurse in the Pediatric Intensive Care Unit of the Hospital Vall d'Hebron, Barcelona.
- ♦ Pediatric Nurse in the Pediatric Intensive Care and Neonatal Intensive Care Units of the Virgen de las Nieves University Hospital of Granada
- ♦ Pediatric Nurse in the Pediatric Emergency Department of the Hospital Universitario Virgen de la Arrixaca, Murcia
- ♦ Vocal Representative of Residents at the Virgen de las Nieves University Hospital, Granada
- ♦ Master's Degree in Genetic, Nutritional and Environmental Determinants of Growth and Development by the University of Granada
- ♦ Specialist in Pediatrics via EIR at the Virgen de las Nieves University Hospital of Granada
- ♦ Graduate in Nursing from the University of Murcia

Dr. Leal Barceló, Andrea María

- ♦ Adjunct Physician at the CIP Unit of the Virgen de la Arrixaca University Hospital, Murcia
- ♦ Fellowship in Pediatric Intensive Care at The Hospital for Sick Children, Canada
- ♦ Rotation in Pediatric Transport at Vall d'Hebron University Hospital, Barcelona
- ♦ Rotation in the Department of Anesthesiology at the Pediatric Hematology and Oncology Center of D. Rogachev, Moscow
- ♦ Rotation in Intensive Care at the Hospital de Niños Dr. Ricardo Gutiérrez, Buenos Aires
- ♦ Specialist in Pediatrics, Gregorio Marañón General University Hospital
- ♦ Degree in Medicine from the University of Murcia

Dr. Gómez Santos, Elisabet

- ♦ Neonatology and Intensive Care Pediatrician at the Juan Ramón Jiménez University Hospital, Huelva
- ♦ Pediatrician Neonatologist at Santa Lucía University Hospital of Cartagena
- ♦ Pediatrician at Hospital Alto Guadalquivir, Andújar
- ♦ Specialist in Pediatrics at Juan Ramón Jiménez University Hospital
- ♦ Doctor in Medicine from the University of Murcia
- ♦ Master's Degree in Neonatology from the Spanish Society of Neonatology (SENEO)
- ♦ Master's Degree in Clinical Medicine Research from the Miguel Hernández University, Elche
- ♦ University Expert in Pediatric Emergency Medicine from the Catholic University of Valencia
- ♦ Degree in Medicine from the University of Seville

Dr. Viedman Chamorro, Gloria

- ♦ FEA in Pediatrics at the University Hospital of Jaén
- ♦ FEA in Pediatrics at the Jaén Hospital Complex
- ♦ FEA in Nephrology at the Jaén Hospital Complex
- ♦ Specialist in Pediatrics and its Specific Areas at the Jaén Maternal-Children's Hospital
- ♦ Specialist in Nephrology at the Jaén Hospital Complex
- ♦ Accreditation of Professional Competences in Hospital Care Pediatrics, Advanced Level, by the Health Quality Agency of Andalusia
- ♦ University Expert in Hemodialysis for Nephrology Specialist by the Complutense University of Madrid
- ♦ University Expert in Pediatric Nephrology from the University of Oviedo
- ♦ Degree in Medicine and Surgery from the University of Granada

Dr. Miñambres Rodríguez, María

- ♦ Pediatric Intensive Care Pediatrician at the PICU of the Hospital Virgen de la Arrixaca, Murcia Emergency Physician at the Hospital Virgen de la Luz
- ♦ Member of the Respiratory Working Group of the Spanish Society of Pediatric Intensive Care (SECIP) and the European Society of Paediatric and Neonatal Intensive Care (ESPNIC)
- ♦ Author of several chapters of the Pediatric and Neonatal Ventilation manual of the Respiratory Working Group of the Spanish Society of Pediatric Intensive Care (SECIP)
- ♦ Specialist in Pediatrics and its Specific Areas, with a subspecialty in Pediatric Intensive Care, La Fe Children's Hospital, Valencia
- ♦ Degree in Medicine from the University of Salamanca

Dr. Sánchez Martínez, Francisco

- ♦ Assistant Physician in the PICU of the University Clinical Hospital Virgen de la Arrixaca, Murcia
- ♦ Volunteer Pediatrician at the NGO Cirugía Solidaria, Dahra, Senegal
- ♦ Rotation in the Pediatric ICU of the Hospital Vall d'Hebron, Barcelona
- ♦ Specialist in Pediatric Intensive Care at the Virgen de las Nieves Maternal Hospital, Granada
- ♦ Specialist in Pediatrics and its Specific Areas at the Virgen de las Nieves Maternity and Children's Hospital, Granada
- ♦ Master's Degree in Genetic, Nutritional and Environmental Determinants of Growth and Development by the University of Granada
- ♦ Master's Degree in Neonatology by the Catholic University of Valencia
- ♦ University Expert in Pediatric Emergency Medicine from the Catholic University of Valencia
- ♦ Degree in Medicine from the University of Seville

Dr. Moreno Salgado, José Luis

- ♦ Pediatric Area Specialist in the Pediatric and Neonatal ICU of the Juan Ramón Jiménez Hospital
- ♦ Specialist Physician in Pediatrics and Specific Areas
- ♦ University Expert in Pediatric Emergency Medicine from the Catholic University of Valencia
- ♦ Expert in Pediatric Intensive Care, Neonatal and mixed ICU
- ♦ Master's Degree in Neonatology by the Catholic University of Valencia
- ♦ Graduate in Medicine from the University of Córdoba

Dr. Jiménez Jurado, Beatriz

- ♦ FEA in Pediatrics in the Pediatric ICU of the Jaen University Hospital
- ♦ Member of the Working Group of Stabilization and Transport of the Critical Child and Neonate in the Spanish Society of Pediatric Intensive Care
- ♦ Researcher in the European Pediatric Transfusion Practices in PICU Study (E-PETRA Study)
- ♦ Researcher in the Study of Neurological Impact and Neurobiochemical Biomarkers in Neonatal SARS-CoV-2 Infection
- ♦ Specialist in Pediatrics and its Specific Areas, subspecialty in Pediatric Intensive Care, by the University Hospital of Jaén
- ♦ Master's Degree in Pediatric Infectious Diseases from the Cardenal Herrera University
- ♦ University Expert in Pediatric Emergencies from the Catholic University of Valencia San Vicente Martir
- ♦ Degree in Medicine and Surgery from the University of Cordoba
- ♦ Awards for the Best Original Paper and Best Clinical Case Report at the Congress of the Pediatric Society of Eastern Andalusia
- ♦ Member of: Spanish Society of Pediatric Intensive Care

Dr. Millán Zamorano, José Antonio

- ♦ FEA in the Neonatal and Pediatric ICU of the Juan Ramón Jiménez University Hospital, Huelva
- ♦ Pediatrician in the Pediatrics Department of the Infanta Elena Hospital, Huelva
- ♦ Specialist in Pediatrics and its Specific Areas by the Virgen del Rocío University Hospital, Seville
- ♦ Degree in Medicine from the University of Seville

Dr. Vidaurreta del Castillo, María Esther

- ♦ FEA in Pediatrics in the Pediatric Intensive Care Unit of the University Hospital of Jaén
- ♦ FEA in Pediatrics at the Maternal-Children's Hospital of Malaga
- ♦ Rotator in Pediatrics at the Reina Sofia University Hospital, Cordoba
- ♦ Rotation in Pediatrics at the University Hospital della Misericordia, Italy
- ♦ Specialist in Pediatrics and its Specific Areas at the University Hospital of Jaén
- ♦ University Expert in Pediatric Emergency Medicine by Editorial Médica Panamericana
- ♦ Degree in Medicine, University of Córdoba

04

Structure and Content

This program includes specific modules that will delve into the recognition and management of respiratory emergencies, such as Acute Respiratory Failure and Pediatric Acute Respiratory Distress Syndrome. It will also focus on neurological emergencies, providing knowledge on the management of Epileptic Seizures, the diagnosis and treatment of pediatric Coma, and the identification of signs of increased Intracranial Pressure. In addition, infectious emergencies, including Sepsis and Septic Shock, will be addressed, with emphasis on differential diagnosis, initial management and treatment according to current guidelines.



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This Postgraduate Diploma in Respiratory, Neurological and Infectious Emergencies in the PICU offers you a comprehensive program that will address crucial aspects for the specialized care of critically ill children"

Module 1. Respiratory Emergencies in the Pediatric Intensive Care Unit

- 1.1. Acute Respiratory Failure
 - 1.1.1. Gas Exchange, Hypoxemia and Hypercapnia
 - 1.1.2. Oxygenation Techniques
 - 1.1.3. Respiratory Monitoring
 - 1.1.4. Respiratory Therapies Heliox Nitric Oxide
- 1.2. Airway Management
 - 1.2.1. Tracheal Intubation Rapid Intubation Sequence (RIS)
 - 1.2.2. Difficult Airway
 - 1.2.3. Tracheotomy and Cryostomy
 - 1.2.4. Videolaryngoscopy and Bronchoscopy
- 1.3. Invasive Mechanical Ventilation
 - 1.3.1. Respiratory Physiology
 - 1.3.2. Ventilatory Modes
 - 1.3.3. Programming of Mechanical Ventilation
- 1.4. Non-Invasive Mechanical Ventilation
 - 1.4.1. General Information on NIV Material
 - 1.4.2. NIV Programming
 - 1.4.3. Programming Analysis
- 1.5. Bronchiolitis
 - 1.5.1. Epidemiology
 - 1.5.2. Pathophysiology
 - 1.5.3. Treatment
 - 1.5.4. Invasive and Non-Invasive Mechanical Ventilation
 - 1.5.5. Obstructive and Restrictive Pattern
- 1.6. Asthmatic Status
 - 1.6.1. Epidemiology
 - 1.6.2. Pathophysiology
 - 1.6.3. Treatment
 - 1.6.4. Invasive and Non-Invasive Mechanical Ventilation
 - 1.6.5. Aerial Entrapment



- 1.7. Pediatric Acute Respiratory Distress Syndrome (ARDS)
 - 1.7.1. Epidemiology
 - 1.7.2. Pathophysiology
 - 1.7.3. Diagnosis. Differential Diagnosis
 - 1.7.4. Treatment
 - 1.7.5. Prognosis
- 1.8. Chronic Respiratory Diseases in Intensive Care
 - 1.8.1. The Chronic and Complex Chronic Patient in PICU
 - 1.8.2. Exacerbations of Chronic Respiratory Diseases
 - 1.8.3. Care of the Tracheostomized Patient
 - 1.8.4. Switching to Home Mechanical Ventilation
 - 1.8.5. Complementary Treatments
- 1.9. Pleural Effusion Chylothorax. Pneumothorax
 - 1.9.1. Pleural Effusion
 - 1.9.2. Chylothorax
 - 1.9.3. Pneumothorax
 - 1.9.4. Drainage System: Use and Care
- 1.10. Pulmonary Hypertension Drowning Smoke Inhalation
 - 1.10.1. Pulmonary Hypertension
 - 1.10.2. Drowning
 - 1.10.3. Smoke Inhalation
- 2.2. Seizures and Status Epilepticus in the ICU
 - 2.2.1. Management of Seizures and Status Epilepticus in Critically Ill Pediatric Patients
 - 2.2.2. Electroencephalographic (EEG) Monitoring to Guide the Management of Seizures and Status Epilepticus
 - 2.2.3. Antiepileptic Treatment of the Pediatric ICU Patient
- 2.3. Pediatric Stroke
 - 2.3.1. Stroke in Children and Response with Rapid Diagnostic Evaluations
 - 2.3.2. Acute Treatments for Pediatric Ischemic and Hemorrhagic Stroke Based on Current Recommendations
 - 2.3.3. Continuity of Care and Rehabilitation Planning for Pediatric Post-stroke Patients
- 2.4. Meningitis and Encephalitis in Children
 - 2.4.1. Early Diagnosis of Meningitis and Encephalitis in Pediatric ICU by using Clinical Protocols and Laboratory Techniques
 - 2.4.2. Administration of Antimicrobial Therapy and Supportive Care for the Treatment of Meningitis and Encephalitis
 - 2.4.3. Monitoring and Management of Short and Long term Complications associated with Meningitis and Encephalitis in Children
- 2.5. Intracranial Hypertension Management
 - 2.5.1. Intracranial Hypertension in Pediatric Patients Causes and Clinical Signs
 - 2.5.2. Techniques for Management of Intracranial Hypertension Optimization of Head Position and Pharmacotherapy
 - 2.5.3. Integration of Intracranial Pressure Monitoring in Clinical Decision Making and Treatment Adjustment

Module 2. Neurological Emergencies in the Pediatric Intensive Care Unit

- 2.1. Management of the Pediatric Patient with Traumatic Brain Injury
 - 2.1.1. Evaluation and Stabilization of Pediatric Patients with Head Trauma Following Current Trauma Protocols
 - 2.1.2. Strategies for Monitoring and Management of Intracranial Pressure in Traumatic Head Injury
 - 2.1.3. Long-term Multidisciplinary Management Plan to Improve Neurological Outcomes after Traumatic Brain Injury in Children
- 2.6. Neurological Monitoring in ICU
 - 2.6.1. Implementation and Analysis of Continuous Neurological Monitoring to Guide Clinical Management: EEG and other Biomarkers
 - 2.6.2. Assessment of Brain Function through Various Monitoring Modalities and Treatment Adjustment
 - 2.6.3. Use of Neurological Monitoring Data for Prevention and Detection of Secondary Complications in the Pediatric ICU
- 2.7. Neuroprotection and Post-resuscitation Care
 - 2.7.1. Neuroprotection Strategies to Minimize Secondary Brain Damage after Events such as Cardiac Arrest
 - 2.7.2. Management of Temperature Control Therapy and other Post-resuscitation Care to Optimize Neurological Outcomes
 - 2.7.3. A Multidisciplinary Approach to Rehabilitation and Family Support after Successful Resuscitation

- 2.8. Neuromuscular Diseases in the ICU
 - 2.8.1. Diagnosis and Management of Acute and Chronic Neuromuscular Diseases in the PICU Setting
 - 2.8.2. Ventilatory and Nutritional Support for Patients with Neuromuscular Diseases
 - 2.8.3. Long-term Care Coordination and Transition Planning for Children with Neuromuscular Disease Requiring Intensive Care
- 2.9. Sedation and Analgesia in Neurointensivists
 - 2.9.1. Application of Pharmacology Principles for the Safe and Effective Administration of Sedatives and Analgesics in Critically Ill Pediatric Patients with Neurological Conditions
 - 2.9.2. Ongoing Assessment of the Level of Sedation and Pain in Pediatric Patients using Validated Scales to Ensure Appropriate Pain Management and Comfort
 - 2.9.3. Development of Sedation and Sedation Withdrawal Protocols that Minimize the Risk of Delirium and other Side Effects and Promote Optimal Neurologic Recovery
- 2.10. Neurological Rehabilitation in the ICU
 - 2.10.1. Implementation of Individualized Early Rehabilitation Programs for Pediatric Patients in the ICU that Address Specific Motor, Cognitive and Emotional Needs
 - 2.10.2. Collaboration with a Multidisciplinary Team, including Physiotherapists and Occupational Therapists, to Integrate Neurological Rehabilitation into the Intensive Care Plan
 - 2.10.3. Regular Assessment and Reporting of Progress in Neurological Rehabilitation, adjusting Treatment Strategies in Accordance with the Patient's Clinical Progress and Recovery Goals

Module 3. Infectious Emergencies and Sepsis in the Pediatric Intensive Care Unit

- 3.1. Sepsis and Septic Shock in Pediatrics
 - 3.1.1. Diagnostic Criteria for Sepsis and Septic Shock in Pediatric Patients for a Timely and Accurate Diagnosis
 - 3.1.2. Hemodynamic Resuscitation of Children with Septic Shock: Optimizing Tissue Perfusion and Administration of Fluids and Vasopressors
 - 3.1.3. Response to Antimicrobial Therapy in Pediatric Patients with Sepsis and Septic Shock Adjustment of Therapies according to Culture and Sensitivity Test Results

- 3.2. Management of Severe Infections and Antibiotics
 - 3.2.1. Appropriate Selection and Prescription of Antimicrobials in Pediatric Patients with Severe Infections: Local Microbiology, Age and Weight of Patient and Pediatric Pharmacokinetics
 - 3.2.2. Comprehensive Management Strategies for Patients with Serious Infections: Monitoring of Vital Signs, Interpretation of Laboratory Tests and Ongoing Clinical Evaluation
 - 3.2.3. Implementation of Protocols for Appropriate Antimicrobial Use in the PICU: Duration of Treatment and Escalation of Antimicrobials when Necessary
- 3.3. Opportunistic Infections in ICU
 - 3.3.1. Opportunistic Infections that can Affect Pediatric Patients in the ICU, especially those with Underlying Medical Conditions or Immunosuppression
 - 3.3.2. Design and Implementation of Effective Strategies for Prevention and Control of Opportunistic Infections in the ICU: use of Barrier Measures and Antimicrobial Prophylaxis as Needed
 - 3.3.3. Risk Assessment and Management of Opportunistic Infections in Immunocompromised Patients: Management Strategies According to the Individual Needs of Each Patient
- 3.4. Nosocomial Infection Prevention and Control
 - 3.4.1. Design and Implementation of Effective Strategies to Prevent Transmission of Nosocomial Infections in the Pediatric ICU: Hand Hygiene, Asepsis and and Proper Management of Medical Devices
 - 3.4.2. Infection Prevention Practices in the ICU by Monitoring Infection Rates and of Infection Rates and Identification of Areas for Improvement
 - 3.4.3. Training of Healthcare Personnel and Patient Caregivers on Nosocomial Infection Prevention Measures, Promoting a Culture of Safety and Prevention
- 3.5. Tropical Diseases in ICU
 - 3.5.1. Recognition and Diagnosis of Tropical Diseases in Pediatric Patients Admitted to the ICU, especially those with a History of Travel to Endemic Areas
 - 3.5.2. Specific Management Plans for Tropical Diseases: Selection and Administration of Anti-parasitic and Antiviral Treatments
 - 3.5.3. Prevention Strategies to Reduce Patient Exposure to Tropical Diseases in the ICU: Protection Against Vectors and Education to Patients and their Families

- 3.6. Immunodeficiencies and ICU Management
 - 3.6.1. Clinical Management of Pediatric Patients with Immunodeficiencies Requiring Intensive Care
 - 3.6.2. Management Protocols in the Administration of Immunoglobulins and Prophylaxis of Opportunistic Infections in Patients with Severe Immunodeficiencies
 - 3.6.3. Collaboration with Immunology Specialists to Optimize the Management of Pediatric Immunodeficiency Patients: Planning of Stem Cell Replacement Therapies if Necessary
- 3.7. Management of the Immunosuppressed Patient
 - 3.7.1. Causes and Degree of Immunosuppression in Pediatric Patients: Patients who have Received Organ Transplantation or Immunosuppressive Therapies to Customize their Clinical Management
 - 3.7.2. Infection Prevention Strategies in Immunosuppressed Patients: Administration of Antimicrobial Prophylaxis and Education on Hygiene Measures and Risk Avoidance
 - 3.7.3. Collaboration with Transplant Teams and Immunology Specialists: Coordination and Supervision of the Comprehensive Care of Immunosuppressed Pediatric Patients in the ICU
- 3.8. Central Nervous System Infections.
 - 3.8.1. Central Nervous System Infections in Pediatric Patients, Meningitis and Encephalitis, by Interpretation of Clinical Findings and Laboratory and Neuroimaging Studies
 - 3.8.2. Development of Specific Management Plans for Patients with Central Nervous System Infections: Choice and Dosage of Antimicrobials and Neurological Support Therapies
 - 3.8.3. Neurological Evolution of Pediatric Patients with Central Nervous System Infections: Treatment Strategies
- 3.9. Severe Viral Diseases
 - 3.9.1. Severe Viral Diseases in Pediatric Patients in the ICU: Serious Viral Respiratory Infections and Emerging Viral Diseases
 - 3.9.2. Management of Viral Diseases: Antiviral Administration, Advanced Respiratory Support and Viral Load Monitoring in Critically Ill Patients
 - 3.9.3. Viral Disease Prevention and Control Strategies in the ICU: Application of Isolation Protocols and Protective Measures for Medical and Nursing Staff
- 3.10. Isolation Protocols and Barriers
 - 3.10.1. Isolation Protocols in the Pediatric ICU to Prevent the Transmission of Infectious Diseases: Route of Transmission, Duration of Isolation and Specific Precautions
 - 3.10.2. Isolation Measures and Appropriate use of Personal Protective Equipment (PPE) to Minimize the Risk of Infection
 - 3.10.3. Evaluating the Effectiveness of Isolation Protocols and Making Adjustments to Improve Patient Safety



The contents, taught by experts in the field, will provide you with the skills and knowledge necessary to provide comprehensive and quality care in the PICU"

05

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.



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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 we use the Case Method

What should a professional do in a given situation? 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. Specialists learn better, faster, and more sustainably over time.

With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.



According to Dr. Gervas, 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, trying to recreate the real conditions in the physician's professional 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. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
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 the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

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



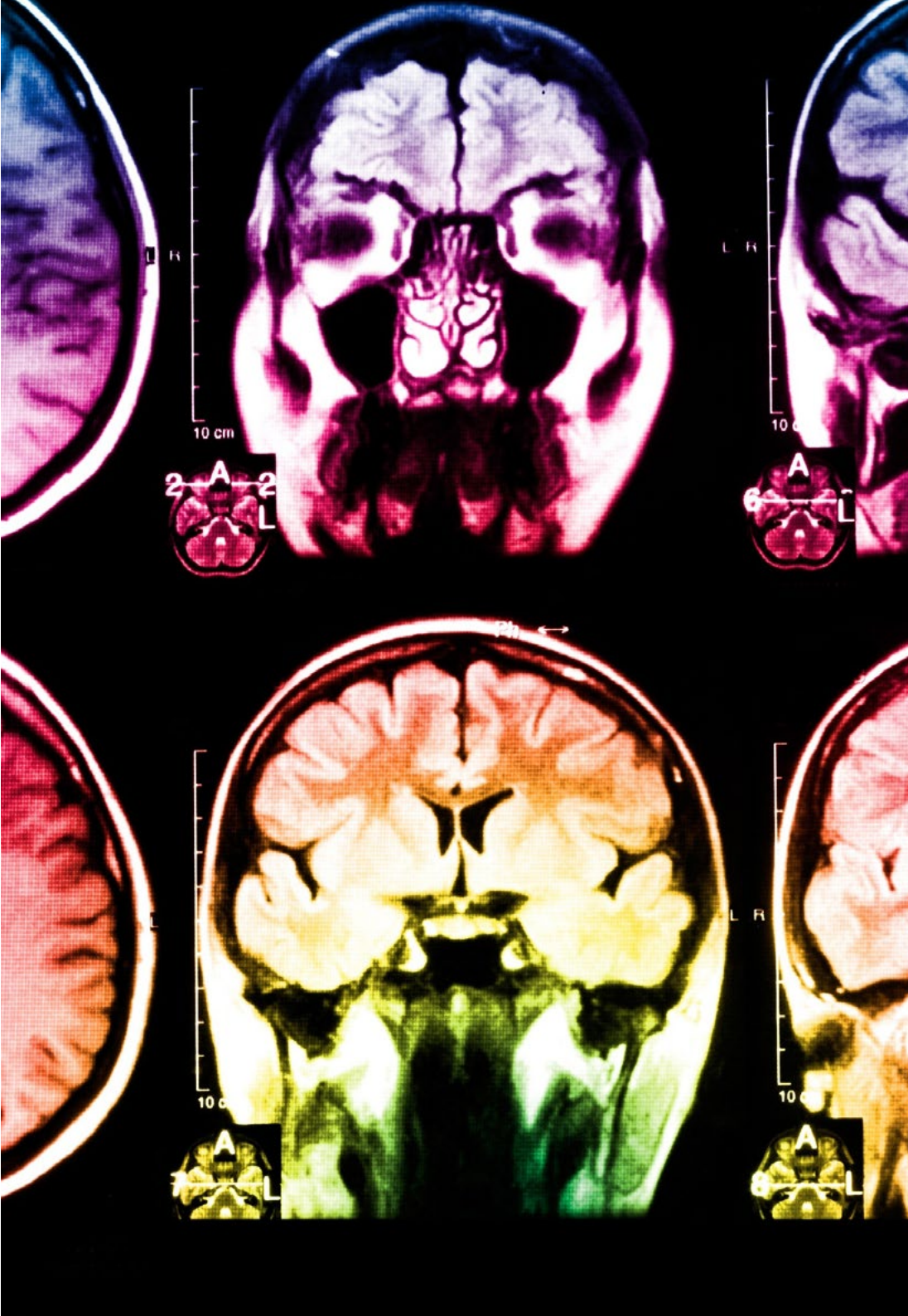
At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. 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.

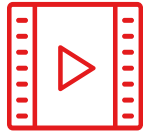
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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 highly 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.



Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and 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 the videos as many times as you like.



Interactive Summaries

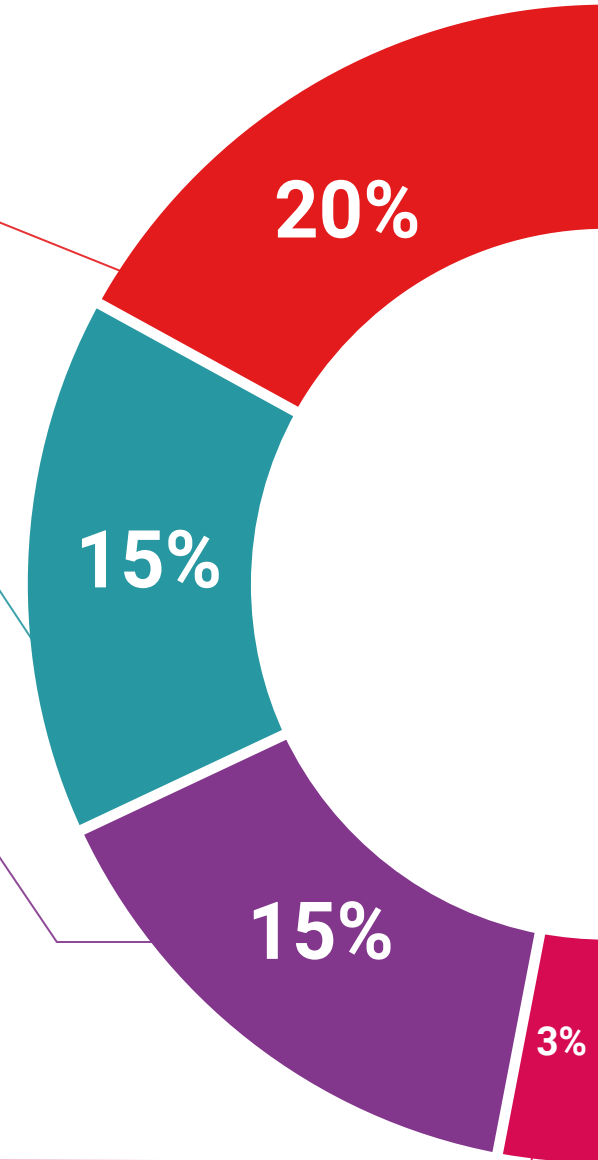
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

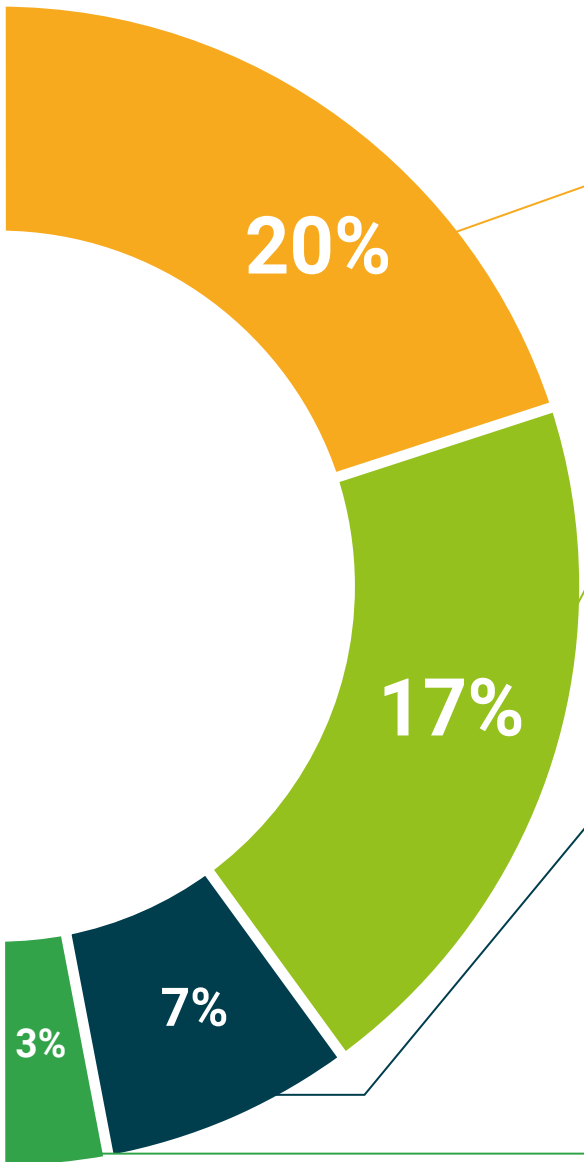
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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 on the usefulness of learning by observing experts. The system known as 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.



06

Certificate

The Postgraduate Diploma in Respiratory, Neurological and Infectious Emergencies in the PICU guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.





Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork"

This private qualification will allow you to obtain a **Postgraduate Diploma in Respiratory, Neurological and Infectious Emergencies in the PICU** 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: **Postgraduate Diploma in Respiratory, Neurological and Infectious Emergencies in the PICU**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning



Postgraduate Diploma
Respiratory, Neurological and
Infectious Emergencies in the PICU

- » Modality: online
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- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Diploma
Respiratory, Neurological and Infectious
Emergencies in the PICU

