

# Postgraduate Diploma

Digestive, Renal and Toxicologic  
Emergencies in PICU





## Postgraduate Diploma Digestive, Renal and Toxicologic Emergencies in 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-digestive-renal-toxicologic-emergencies-picu](http://www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-digestive-renal-toxicologic-emergencies-picu)

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# 01

# Introduction

Digestive, Renal and Toxicological Emergencies in the Pediatric Intensive Care Unit (PICU) are a significant challenge because of the complexity and rapidity with which these conditions can evolve. Indeed, digestive emergencies require rapid intervention to prevent serious complications. Renal emergencies, including Acute Renal Failure, require constant monitoring and adequate fluid and electrolyte management. Likewise, poisoning cases are still frequent and require a multidisciplinary approach. In this situation, TECH has developed a complete and adaptable online program, which only requires a device with an Internet connection to access the didactic materials. In addition, this program uses the innovative learning methodology known as Relearning.



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*With this online Postgraduate Diploma, you will acquire advanced knowledge in hemodynamics, pharmacology and neuromonitoring techniques, as well as in the evaluation and treatment of intoxications and endocrinological disorders"*

Currently, Digestive, Renal and Toxicological Emergencies in the Pediatric Intensive Care Unit (PICU) present a great challenge due to the increase of complex cases and the need for a rapid and specialized response. In fact, effective management of these cases depends on a highly specialized multidisciplinary team and access to advanced technologies for diagnosis and treatment.

In this context, this Postgraduate Diploma is presented, which will cover the meticulous initial assessment of the critically ill patient, identifying vital signs of danger and establishing priorities in care. In addition, it will explore the optimization of Cardiovascular Support through advanced knowledge of hemodynamics, the safe administration of critical drugs and the management of their interactions and side effects.

Likewise, transfusions of blood products in critical children, the diagnosis and treatment of uremic-hemolytic syndrome, and the performance of accurate differential diagnoses in complex situations will be assessed. Knowledge on neuromonitoring of the critically ill child will also be updated and difficulties in postoperative management of difficult airway will be analyzed.

Finally, professionals will be able to recognize signs and symptoms of exposure to toxins, manage acute complications of endocrinological disorders, and use laboratory and diagnostic techniques to evaluate and monitor these conditions. The importance of coordination with pharmacists and toxicologists to optimize detoxification therapies and the use of antidotes will also be emphasized. To this is added the timely treatment of endocrinological emergencies, such as Hyperglycemic Crisis and Adrenal Insufficiency, encouraging participation in research studies to advance knowledge in these fields.

In this situation, TECH has developed a comprehensive online program, specially designed to adapt to the individual needs of students, eliminating difficulties such as the need to physically travel or comply with fixed schedules. Additionally, it is supported by the innovative Relearning methodology, which focuses on repeating essential concepts to ensure an effective and continuous understanding of the contents.

This **Postgraduate Diploma in Digestive, Renal and Toxicologic 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 Digestive, Renal and Toxicological Emergencies in the PICU
- 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



*Upon completion of this Postgraduate Diploma, you will be better prepared to provide high quality care, reduce mortality and improve clinical outcomes in the PICU. What are you waiting for to enroll?"*



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*You will be skilled to effectively deal with digestive and renal emergencies, gaining a solid foundation for the management of pediatric patients in critical conditions. With all the quality guarantees that TECH offers you!"*

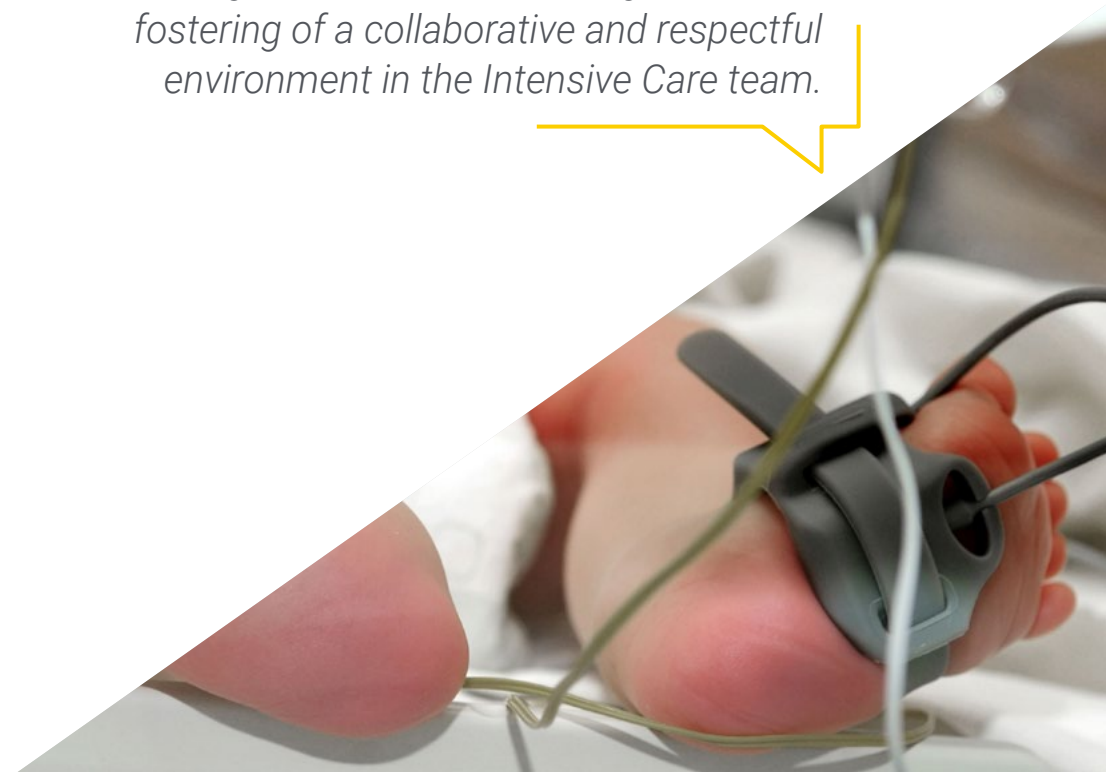
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 address the timely management of endocrinologic emergencies, such as Hyperglycemic Crisis and Adrenal Insufficiency, through the best didactic materials, at the forefront of technology and education.*

*You will analyze the accurate selection and administration of critical drugs, the navigation of ethical challenges, and the fostering of a collaborative and respectful environment in the Intensive Care team.*



# 02 Objectives

This program will develop advanced skills in the assessment and management of digestive, renal and toxicological emergencies, ensuring rapid and accurate intervention. In addition, the ability to apply knowledge of hemodynamics and pharmacology in pediatric contexts will be strengthened. Another key objective will be to foster ethical and patient-centered decision making, promoting effective communication with families and a collaborative work environment. Ultimately, clinical outcomes and quality of care in the PICU will be improved, preparing professionals to meet the challenges in this area.







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*The goal of this Postgraduate Diploma will be to empower you to deliver highly specialized and effective care to critically ill pediatric patients, thanks to a comprehensive library of multimedia resources”*



## General Objectives

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- ♦ Provide a comprehensive understanding of the essential principles of pediatric intensive care
- ♦ Learn to assess the nutritional status and needs of critically ill children
- ♦ Achieve adequate fluid management by detecting abnormal situations
- ♦ Develop expertise in pediatric endocrinologic emergencies, such as Diabetic Ketoacidosis and Adrenal Crisis

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*You will develop advanced skills in the initial evaluation and comprehensive management of pediatric patients with severe digestive, renal and toxicological conditions, with the support of the revolutionary Relearning methodology”*





## Specific Objectives

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### Module 1. Pediatric Intensive Care

- ◆ Develop the fundamental principles and importance of pediatric intensive care, including ethics and evidence-based decision making
- ◆ Perform a meticulous initial assessment of the critically ill pediatric patient, rapidly identifying signs of life-threatening illness and prioritizing care
- ◆ Apply advanced knowledge of hemodynamics to optimize Cardiovascular Support through the appropriate use of fluids, inotropic drugs, vasopressors, and continuous monitoring
- ◆ Select and administer critical drugs with thorough understanding of their pharmacokinetics and pharmacodynamics in children, as well as manage potential drug-drug interactions and side effects
- ◆ Navigate the ethical challenges present in the PICU, participating in patient- and family-centered decision making, and managing sensitive communications about prognosis and treatment options
- ◆ Foster an environment of collaboration and respect on the intensive care team, enhance communication skills with patients' families, and contribute to a climate of teamwork that supports the delivery of high quality care

### Module 2. Digestive, Renal, and Neurosurgical Emergencies in the Pediatric Intensive Care Unit

- ◆ Reflective assessment of blood product transfusions in the critical child
- ◆ Analyze the uremic-hemolytic syndrome and the differential diagnosis of the critically ill patient
- ◆ Update knowledge on Neuromonitoring of the critically ill child
- ◆ Determine the difficulties in the postoperative management of the difficult airway

### Module 3. Toxicology and Endocrinology in the Pediatric Intensive Care Unit

- ◆ Identify common signs and symptoms of exposure to toxins and poisonings in children
- ◆ Manage acute complications of Endocrinologic Disorders
- ◆ Utilize laboratory and diagnostic techniques to evaluate and monitor Poisonings and Endocrine Disorders
- ◆ Coordinate care with pharmacists and toxicologists to optimize detoxification therapy and use of antidotes
- ◆ Identify and timely treat endocrinologic emergencies such as Hyperglycemic Crisis and Adrenal Insufficiency
- ◆ Participate in research studies and case analyses to advance knowledge and practice in pediatric toxicology and endocrinology
- ◆ Address ethical and legal issues in the management of toxicologic and endocrinologic cases in children
- ◆ Promote a collaborative, team-based approach to improve patient outcomes in emergency toxicologic and endocrinologic emergencies

# 03

## Course Management

The teachers are highly qualified professionals with extensive experience in the field of Pediatric Intensive Care. In fact, these experts have a solid background in both clinical practice and research. Therefore, their commitment to specialization and clinical excellence will ensure that graduates receive a comprehensive and up-to-date preparation to face and manage the most complex emergencies in the PICU with confidence and competence.







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*Faculty members excel at conveying knowledge in a clear and accessible manner, fostering critical thinking and addressing the ethical challenges of caring for critically ill pediatric patients”*



## 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. Calvo Bonachera, María Dolores

- ♦ Head of the Critical Care and Emergency Department at the Princesa Leonor Maternity Hospital, Almeria
- ♦ FEA with position in the Torrecárdenas Hospital Complex
- ♦ FEA at the Hospital de Poniente
- ♦ Pediatric Specialist Physician
- ♦ Accredited by the SAS at Expert Level
- ♦ Degree in Medicine from the University of Granada, specializing in Pediatrics via MIR
- ♦ Graduate in Medicine and Surgery from the University of Seville

### Dr. Quiralte Castillo, Joaquín

- ♦ FEA in the Pediatric Intensive Care Unit of the Virgen del Rocío University Hospital, Seville
- ♦ FEA in Pediatric Emergency Medicine and Pediatric and Neonatal Intensive Care at Juan Ramón Jiménez Hospital, Huelva
- ♦ FEA in Pediatric Intensive Care at the by the Hospital Insular- Maternal-Children's Hospital Complex, Las Palmas de Gran Canaria
- ♦ Advanced Neonatal and Pediatric CPR Instructor by the GERCPYNY
- ♦ Specialist in Pediatrics and its Specific Areas, subspecialty in Pediatric Intensive Care, by the Hospital Insular- Maternal-Children's Hospital Complex, Las Palmas de Gran Canaria
- ♦ Graduate of Medicine from the University of Seville

**Dr. Sánchez Valderrábanos, Elia**

- ♦ Head of the Pediatric Intensive Care Department at the Virgen del Rocío University Hospital
- ♦ Area Specialist in Pediatric Intensive Care at the Virgen del Rocío University Hospital
- ♦ Doctor in Medicine and Surgery from the University of Seville
- ♦ Specialty in Pediatrics via MIR
- ♦ Graduate in Medicine and Surgery from the University of Seville

**Dr. Gómez Luque, José María**

- ♦ Assistant Physician of the Pediatric Intensive Care Unit of the Virgen de las Nieves Hospital
- ♦ Medical specialist in Pediatric Intensive Care
- ♦ Advanced CPR and Pediatric CPR Instructor
- ♦ Doctor of Medicine and Surgery from the University of Granada

**Dr. Benítez Gómez, Isabel Lucía**

- ♦ Pediatric Adjunct in the Pediatric Critical Care Unit of the H.U. Virgen del Rocío from Seville
- ♦ FEA in the Pediatric Intensive Care Unit of the Virgen del Rocío University Hospital in Seville
- ♦ Pediatrician in the P-ICU and Neonatal and Emergency Unit of the Hospital Nisa Aljarafe
- ♦ Assistant Pediatrician at the Sagrado Corazón Clinic
- ♦ Assistant Pediatrician in the P-ICU and Emergency Room at the Virgen del Rocío Children's Hospital in Seville
- ♦ Specialist in Pediatrics and its Specific Areas, subspecialty in Pediatric Intensive Care, by the Hospital Infantil Virgen del Rocío of Seville
- ♦ PhD in Medicine, University of Seville
- ♦ Graduate in Medicine and Surgery from the University of Seville

**Dr. Fernández Elías, Manuel**

- ♦ FEA of Pediatrics in Critical Care and Emergency Care of the Virgen del Rocío Children's Hospital in Seville
- ♦ Pediatrician of EBAP in the Seville-North district
- ♦ Family Physician in the Seville-North district
- ♦ Accreditation in Pediatric Intensive Care by the Spanish Society of Pediatric Intensive Care (SECIP)
- ♦ Specialist in Pediatrics and Specific Areas
- ♦ Specialist in Family and Community Medicine
- ♦ Doctor of Medicine, University of Seville
- ♦ Graduate in Medicine and Surgery from the University of Seville

**Dr. Ortiz Pérez, María**

- ♦ FEA in Pediatrics in the PICU of the Torrecadenas Hospital, Almería
- ♦ FEA in Pediatrics at the Hospital de Poniente, Almería
- ♦ Pediatrician at the Hospital Torrecárdenas, Almería
- ♦ Coordinator of the Refresher Course in the Management of Pediatric Emergencies at Hospital Torrecárdenas, Almería Accredited by the ACSA
- ♦ Critical Patient Transport at Hospital General Yagüe, Burgos
- ♦ Rotation in the PICU of the Vall d'Hebron Maternal Hospital, Barcelona
- ♦ Rotation in the Pediatric and Neonatal ICU, Hospital Torrecárdenas, Almería
- ♦ Specialist in Pediatrics and its Specific Areas by the Torrecárdenas Hospital, Almería
- ♦ Degree in Medicine and Surgery from the University of Granada
- ♦ Member of: Spanish Society of Pediatric Intensive Care, Spanish Society of Pediatrics, Pediatric Society of Pediatrics of Eastern Andalusia

**Dr. Luzón Avivar, Alba**

- ♦ FEA in Pediatrics at the University Hospital of Torrecárdenas of Almería
- ♦ International Collaborator at Pablo Horstmann Pediatric Hospital, Kenya
- ♦ Rotation in the Pediatric Intensive Care Unit of the Hospital Virgen del Rocío, Seville
- ♦ Rotation in the Treatments Intensive Care Unit of the Hospital Vall d'Hebron, Barcelona
- ♦ Specialist in Pediatrics and its specific areas at the Torrecárdenas University Hospital, Almería
- ♦ Master's Degree in Pediatric Emergencies from the CEU - Cardenal Herrera University
- ♦ University Expert in Critical Pediatric Patient by the CEU-Cardenal Herrera University
- ♦ University Expert in Pediatric Trauma by the CEU-Cardenal Herrera University
- ♦ University Expert in Pediatric Emergencies for Specialized Care Physicians by CEU-Cardenal Herrera University
- ♦ University Expert in Pediatric Urgent Care by CEU-Cardenal Herrera University
- ♦ Graduate in Medicine from the University of Granada

**Dr. Alés Palmer, María Luisa**

- ♦ Specialist in the Neonatology Unit of the Virgen de las Nieves University Hospital
- ♦ Master's Degree in Genetic, Nutritional and Environmental Determinants of Growth and Development by the University of Granada
- ♦ University Expert in Pediatric Emergency Medicine from the Catholic University of Valencia
- ♦ Degree in Medicine and Surgery from the University of Granada
- ♦ Graduate in Pharmacy from the University of Granada

**Dr. Castro González, Laura**

- ♦ Pediatric Intensive Care Unit at the PICU of the Virgen del Rocío University Hospital, Seville
- ♦ FEA in Pediatrics in the Pediatric Intensive Care Section of the Virgen Macarena Laboratory University Hospital, Seville
- ♦ Medical Coordinator at Meki Catholic Pediatric Clinic, as part of the Project of the Pablo Horstmann Foundation, Ethiopia
- ♦ Rotation in Cardiovascular PICU at Juan P. Garrahan Hospital, Buenos Aires
- ♦ Rotation in Pediatric Cardiology at the Gregorio Marañón University Hospital, Madrid
- ♦ Specialist in Pediatrics and its Specific Areas by the Virgen del Rocío University Hospital, Seville
- ♦ Master's Degree in Pediatric Emergencies by the Catholic University of Valencia
- ♦ Professional Master's Degree in Diagnosis and Treatment in Pediatric Cardiology and Congenital Cardiopathies from CEU Cardenal Herrera University.
- ♦ Expert in Basic Pediatric Infectious Diseases by the Rey Juan Carlos University
- ♦ Graduate in Medicine and Surgery from the University of Seville

**Dr. Ortiz Álvarez, Ana**

- ♦ FEA in Pediatrics in the PICU of the Virgen del Rocío Hospital, Seville
- ♦ Pediatrician in the Emergency Department of the Hispalense Institute of Pediatrics
- ♦ Specialist in Pediatrics and its Specific Areas, subspecialty in Pediatric Intensive Care, Virgen del Rocío University Hospital, Seville
- ♦ Master's Degree in Pediatric Emergencies and Emergencies by the International University of Andalusia(UNIA)
- ♦ Master's Degree in Anesthesiology, Pain Management and Pediatric Perioperative Intensive Care by the International University of La Rioja
- ♦ Degree in Medicine from the University of Seville

**Dr. Quesada Ortega, Úrsula**

- ♦ FEA in Pediatrics in the PICU of the Virgen del Rocío Hospital, Seville
- ♦ FEA in Pediatrics in the PICU of the Hospital La Paz, Madrid
- ♦ Specialist in Pediatric Intensive Care from the Virgen del Rocío Hospital, Seville
- ♦ Specialist in Pediatrics and its Specific Areas by the La Paz Hospital, Madrid
- ♦ Master's Degree in Palliative Care Treatments from the University of La Rioja
- ♦ Degree in Medicine from the University of Granada

**Dr. Maldonado Martín, María Belén**

- ♦ Faculty Specialist in Pediatrics at the Torrecárdenas University Hospital
- ♦ Expert in Continuous Extrarenal Depuration in the critical child by the Hospital Sant Joan de Deu
- ♦ Expert in Advanced Life Support in Pediatric Trauma by the Hospital Sant Joan de Deu
- ♦ Expert in Basic and Advanced Pediatric and Neonatal Mechanical Ventilation
- ♦ Medical Specialist in Pediatrics and its specific areas by the Torrecárdenas University Hospital
- ♦ Graduate in Medicine from the University of Cadiz

**Dr. Ruiz Frías, Ángela**

- ♦ Pediatric Intensive Care Unit at the PICU of the Virgen del Rocío University Hospital, Seville
- ♦ Area Specialist in Pediatrics with practice in Neonatology, Emergency and Neonatal Intensive Care at Hospital Quirón Málaga
- ♦ Specialist in Pediatrics and specific areas at Hospital Torrecárdenas
- ♦ Master's Degree in Genetic, nutritional and environmental determinants in growth and development from the University of Granada
- ♦ Degree in Medicine from the University of Malaga

**Dr. Palacios Mellado, María de los Desamparados**

- ♦ Neonatology and Emergency FEA at the Hospital Virgen de las Nieves, Granada
- ♦ FEA of Pediatrics in the Hospital de Poniente, El Ejido
- ♦ Responsible for the Pediatric Endocrinology and Childhood Diabetes Clinic at the Regional Hospital of Baza, Andalusian Health Service
- ♦ Rotation in the Neonatal Intensive Care Unit, Hospital San Joan de Deu, Barcelona
- ♦ Rotation in the Pediatric Intensive Care Unit, Hospital Reina Sofia, Cordoba
- ♦ Specialist in Pediatrics and its Specific Areas, San Cecilio University Hospital Granada
- ♦ Master's Degree in Neonatology Preterm Care Newborn Care at Term
- ♦ Postgraduate Diploma in Pediatric Emergencies
- ♦ Degree in Medicine from the University of Granada



*A unique, crucial and decisive learning experience to boost your professional development"*

# 04

## Structure and Content

The academic program will cover a wide range of topics, from the fundamentals of Pediatric Intensive Care, including ethics and evidence-based decision making, to the evaluation and advanced management of digestive, renal and toxicological emergencies in the PICU. In addition, content will include optimization of Cardiovascular Support, critical drug selection and administration, evaluation of poisoning and intoxications, and management of acute endocrinological disorders.







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*The Postgraduate Diploma in Digestive, Renal and Toxicological Emergencies in the PICU offers a comprehensive program that will address the key aspects of critical emergency management in pediatric patients”*

## Module 1. Pediatric Intensive Care

- 1.1. Pediatric Intensive Care
  - 1.1.1. Pediatric Physiology and Pathophysiology in the Context of Intensive Care
  - 1.1.2. Pediatric and Adult Patients in the ICU Key Differences
  - 1.1.3. Principles of Bioethics and Evidence-based Decision Making in the Pediatric Intensive Care Unit.
- 1.2. Initial Assessment of the Critically Ill Pediatric Patient
  - 1.2.1. Comprehensive and Systematic Assessment
  - 1.2.2. Signs of Severity and Stabilization of Vital Functions
  - 1.2.3. Prioritization of Interventions According to Immediate Clinical Needs
- 1.3. Airway Management in Pediatrics
  - 1.3.1. Airway Patency and Ventilatory Management
  - 1.3.2. Endotracheal Intubation and Management of Complications
  - 1.3.3. Selection and Use of Noninvasive Airway Support Devices
- 1.4. Monitoring in the Pediatric Intensive Care Unit
  - 1.4.1. Implementation of Advanced Monitoring Techniques
  - 1.4.2. Interpretation of Data to Adjust Patient Management
  - 1.4.3. Monitoring Technologies to Improve Patient Safety
- 1.5. Pediatric Intensive Care Pharmacology
  - 1.5.1. Pharmacotherapy Management in Emergency and Intensive Care Situations
  - 1.5.2. Pharmacokinetics and Pharmacodynamics in the Pediatric Patient
  - 1.5.3. Identification and Management of Drug Interactions and Adverse Drug Effects
- 1.6. Nutrition in the Critically Ill Pediatric Patient
  - 1.6.1. Assessment of Nutritional Status and Requirements in the Critically Ill Patient
  - 1.6.2. Implementation of Enteral and Parenteral Nutrition Strategies
  - 1.6.3. Monitoring and Adjustment of Nutrition Based on Clinical Response
- 1.7. Ethical Aspects in Pediatric Intensive Care
  - 1.7.1. Specific Ethical Dilemmas in Pediatric Intensive Care
  - 1.7.2. Communicating Bad News in a Compassionate and Effective Manner
  - 1.7.3. Participation in End-of-life Decisions and Palliative Care
- 1.8. Communication with Families and Teamwork
  - 1.8.1. Development of Communication Skills with Families During Stress
  - 1.8.2. Shared Decision Making with Caregivers
  - 1.8.3. Team Approach to Interdisciplinary Care



- 1.9. Prevention of Healthcare-associated Infections in the Pediatric Intensive Care Unit
  - 1.9.1. Protective Barriers and Isolation
  - 1.9.2. Appropriate Use of Antibiotics
  - 1.9.3. Infection Surveillance and Control Strategies
- 1.10. Intrahospital Transport in the Pediatric Critically Ill Patient
  - 1.10.1. Planning and Coordination
  - 1.10.2. Equipment and Monitoring
  - 1.10.3. Safety and Risk Minimization

## Module 2. Digestive, Renal, and Neurosurgical Emergencies in the Pediatric Intensive Care Unit

- 2.1. Assessment and Monitoring of the Nutritional Situation and Calculation of Nutritional Needs Enteral and Parenteral Nutrition in the Critically Ill Child
  - 2.1.1. Nutritional Status and Calculation of Nutritional Needs
  - 2.1.2. Enteral Nutrition
  - 2.1.3. Parenteral Nutrition
- 2.2. Major Burns and their Management in the ICU
  - 2.2.1. Diagnosis of % scq
  - 2.2.2. Calculation of Water Needs
  - 2.2.3. Need for Mechanical Ventilation in Large Burn Injuries
- 2.3. Diabetes Insipidus, Syndrome of Inadequate Antidiuretic Hormone Secretion and Brain Salt Loss Syndrome
  - 2.3.1. Adequate Fluid Management
  - 2.3.2. Differential
  - 2.3.3. Specific Treatment of Diabetes Insipidus, Syndrome of Inadequate Antidiuretic Hormone Secretion and Brain Salt Loss Syndrome.
- 2.4. Pain Management in Pediatrics
  - 2.4.1. Assessment of Pain in the Critically Ill Child Pain Scales
  - 2.4.2. Pain 5th Constant in Pediatrics
  - 2.4.3. Zero Pain Protocol
- 2.5. Thrombotic Microangiopathy Uremic-Hemolytic Syndrome
  - 2.5.1. Thrombi in Children
  - 2.5.2. Small Vessel Thrombi
  - 2.5.3. Management of Uremic-haemolytic Syndrome in Critically Ill Children

- 2.6. Post Renal Transplant Critical Care
  - 2.6.1. Indications for TX in Children
  - 2.6.2. Evaluation of the Recipient
  - 2.6.3. Management of Renal TX in PICU
- 2.7. Hemorrhage and Transfusion Management
  - 2.7.1. Critical Bleeding
  - 2.7.2. Patient Assessment
  - 2.7.3. Transfusion Management in the Critical Child
- 2.8. Childhood Stroke
  - 2.8.1. Diagnosis of Stroke in Children
  - 2.8.2. Multidisciplinary Assessment of the Child with Clinical Suspicion of Stroke
  - 2.8.3. Treatment of Stroke
- 2.9. Neuromonitoring in Critically Ill Patients
  - 2.9.1. Neuromonitoring in Critical Patients
  - 2.9.2. Available Resources
  - 2.9.3. Assessment of Critical Neuromonitoring
- 2.10. Difficult Airway Post-Operative
  - 2.10.1. Indications for EC in VAD
  - 2.10.2. VAD Coagulation
  - 2.10.3. Postoperative Management of VAD

## Module 3. Clinical Epidemiology

- 3.1. Diabetic Ketoacidosis
  - 3.1.1. Underlying Causes of Diabetic Ketoacidosis
  - 3.1.2. Diagnosis of Diabetic Ketoacidosis by Interpretation of Clinical Symptoms and Laboratory Results
  - 3.1.3. Effective Treatment Strategies: Management and Prevention of Diabetic Ketoacidosis in Patients with Diabetes
- 3.2. Electrical Trauma Injuries
  - 3.2.1. Types of Electrical Trauma Injuries according to Mechanism of Action and Severity
  - 3.2.2. Immediate and Long-term Signs and Symptoms Associated with Electrical Trauma Injuries
  - 3.2.3. First Aid and Medical Treatment Protocols for Victims of Electrical Trauma



- 3.3. Alterations in Water-electrolyte Metabolism
  - 3.3.1. Functions of the Main Electrolytes in the Body Importance for Water-electrolyte Balance
  - 3.3.2. Common Causes and Clinical Signs of Disturbances in Water-Electrolyte Balance
  - 3.3.3. Management of Disturbances in Water-electrolyte Metabolism by Appropriate Therapeutic Interventions
- 3.4. Acute Adrenal Insufficiency
  - 3.4.1. Risk Factors and Precipitating Causes of Acute Adrenal Insufficiency
  - 3.4.2. Characteristic Clinical Signs and Symptoms of Acute Adrenal Insufficiency for Early Diagnosis
  - 3.4.3. Urgent Management Strategies for the Treatment of Acute Adrenal Insufficiency: Cortisol Replenishment
- 3.5. Disorders of the Thyroid Gland
  - 3.5.1. Disorders of the Thyroid Gland, Hypothyroidism and Hyperthyroidism: Clinical Features and Laboratory Findings
  - 3.5.2. Clinical Implications of Autoimmune Thyroid Disorders: Disease and Hashimoto's Thyroiditis on the Physiology and Well-being of the Patient
  - 3.5.3. Diagnostic and Therapeutic Approach to Thyroid Disorders: Medical, Surgical Treatment and the Management of Complications
- 3.6. Inhalation Injuries
  - 3.6.1. Types of Inhalation Injuries: Thermal, Chemical and Smoke Inhalation Injuries and their Mechanisms of Injury
  - 3.6.2. Immediate and Long-term Signs and Symptoms Associated with Inhalation Injuries: Early and Accurate Diagnosis
  - 3.6.3. Treatment and Management Strategies for Patients with Inhalation Injuries: Respiratory Support and Specific Therapies for Toxic Agents
- 3.7. Inherited Metabolic Diseases
  - 3.7.1. Principles of Genetics and Inheritance of Metabolic Diseases with Identification of Commonly Affected Metabolic Pathways
  - 3.7.2. Clinical Signs and Symptoms of the Inherited Metabolic Diseases: Early Diagnosis
  - 3.7.3. Management Strategies and Specific Treatment for Inherited Metabolic Diseases: Special Diets, Enzyme Supplementation and Gene Therapies



- 3.8. Antidotes and their Use in Pediatrics
  - 3.8.1. Specific Antidotes in Pediatrics for the most Common Intoxications: Mechanisms of Action
  - 3.8.2. Indications, Dosage and Routes of Administration of Antidotes in the Management of Acute Poisonings in Children
  - 3.8.3. Protocols of Action in Emergency Situations with the Use of Antidotes: Pharmacokinetic and Pharmacodynamic Particularities in the Pediatric Population
- 3.9. Carbon Monoxide Poisoning
  - 3.9.1. Pathophysiology of Carbon Monoxide Poisoning: how it Affects the Body Focusing on its High Affinity for Hemoglobin and the Resulting Systemic Effects
  - 3.9.2. Clinical Signs and Symptoms of Carbon Monoxide Poisoning: Acute and Potential Long-term Neurological and Cardiovascular Health Effects
  - 3.9.3. Treatment Strategies for Carbon Monoxide Poisoning: Administration of 100% Oxygen and Hyperbaric Therapy in Appropriate Cases
- 3.10. Acute Poisoning
  - 3.10.1. Toxic Agents Responsible for Acute Poisoning: Drugs, Industrial and Household Chemicals and Natural Toxins
  - 3.10.2. Clinical Signs and Symptoms associated with Acute Intoxications for Rapid and Accurate Diagnosis
  - 3.10.3. Initial Management of Acute Poisonings: Stabilization of the Patient, Decontamination Techniques and Administration of Specific Antidotes when Indicated in Patients. Evidence and Focus on Improving Clinical Outcomes



*Don't miss this unique opportunity that only TECH can offer you! This program will provide you with the tools you need to deliver high quality care and improve clinical outcomes in critical PICU situations"*



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.



“

*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. 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, trying to recreate the real conditions in the physician's professional practice.

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*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.*

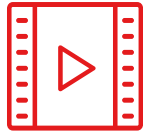
In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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

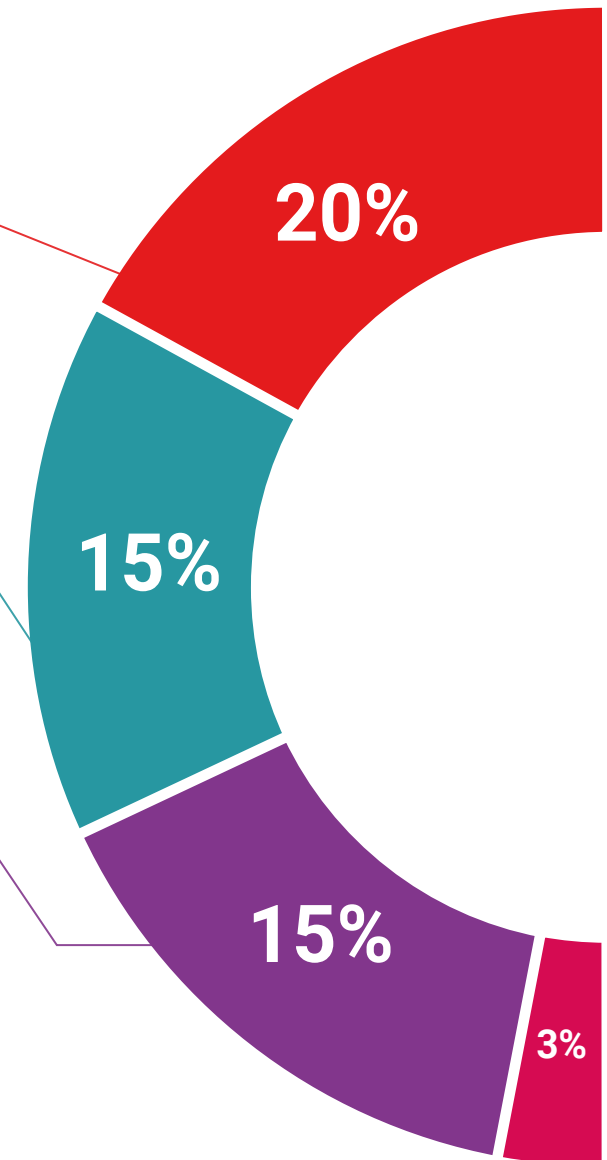
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

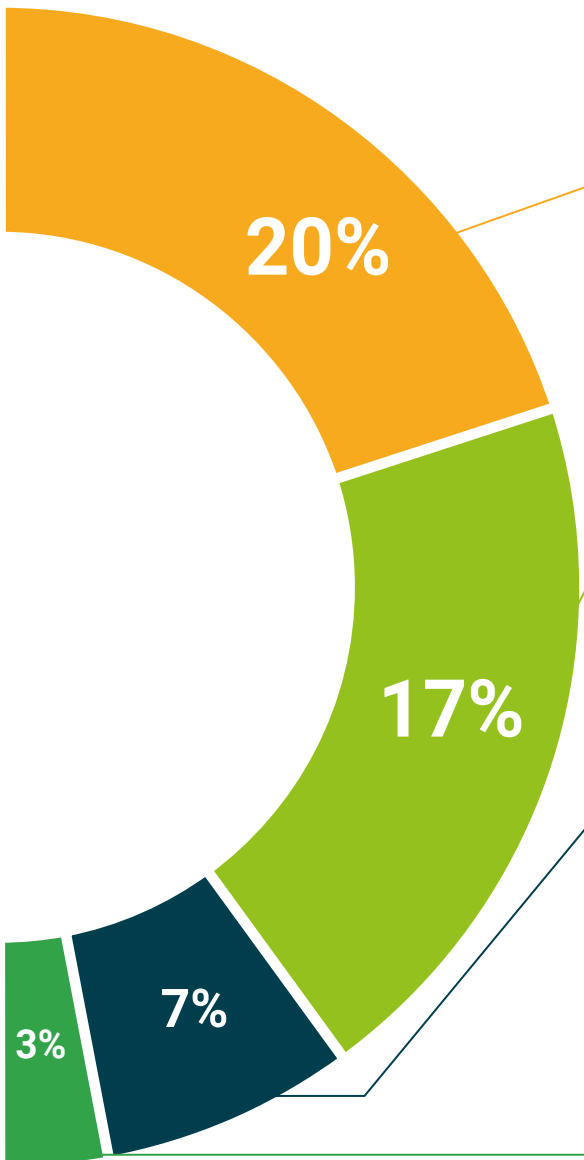
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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 Digestive, Renal and Toxicologic Emergencies in PICU guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.



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*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 Digestive, Renal and Toxicologic Emergencies in 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 Digestive, Renal and Toxicologic Emergencies in PICU**

Modality: **online**

Duration: **6 months**.

Accreditation: **18 ECTS**



\*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.



## Postgraduate Diploma

Digestive, Renal and Toxicologic  
Emergencies in PICU

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

# Postgraduate Diploma

Digestive, Renal and Toxicologic  
Emergencies in PICU

