

Postgraduate Certificate

Infectious Emergencies and Sepsis in the PICU



Postgraduate Certificate Infectious Emergencies and Sepsis in the PICU

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

Website: www.techtute.com/us/medicine/postgraduate-certificate/infectious-emergencies-sepsis-picu

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01

Introduction

In the PICU, Infectious Emergencies and Sepsis continue to be a challenge in medical care. With the COVID-19 pandemic still present, surveillance and management of infectious diseases has intensified, especially in vulnerable pediatric populations. Therefore, early detection of Sepsis is crucial to avoid serious complications, and medical teams are implementing updated protocols and advanced technologies to improve early identification and effective treatment of this condition. In this situation, TECH has designed a complete program that is fully online and extremely flexible, requiring only an electronic device with an Internet connection to access the academic resources. In addition, it is based on the innovative Relearning methodology.



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Thanks to this 100% online Postgraduate Certificate, you will gain an in-depth understanding of the early signs of Sepsis and Septic Shock in children, allowing you a faster and more accurate identification of these conditions"

In the midst of the ongoing fight against infectious emergencies, such as the COVID-19 pandemic, Pediatric Intensive Care Units (PICUs) face additional challenges in treating Sepsis in younger patients. Therefore, constant vigilance, specialization of medical staff and research into new therapeutic strategies are crucial to improve outcomes in the face of this threat.

This is how this Postgraduate Certificate was born, which will address a wide range of crucial topics for the effective care of the youngest patients in critical situations. Among them, the ability to identify the early signs of Sepsis and Septic Shock in children, applying rapid response protocols. In this sense, physicians will recognize the subtle signs of these conditions, allowing timely intervention and reducing the risk of serious complications.

Likewise, the syllabus will focus on the implementation of initial management strategies, including fluid resuscitation and the appropriate use of antimicrobials. In this way, professionals will acquire practical skills to rapidly address hypoperfusion and organ dysfunction, crucial elements in the effective treatment of pediatric sepsis.

Finally, graduates will be updated in the differential diagnosis of Common Infectious Diseases in the PICU and the management of complications associated with Severe Infections and Sepsis, such as Multiorgan Failure. They will also be able to interpret laboratory studies and radiological findings relevant to the evaluation of Infections and Sepsis, which will facilitate more informed clinical decision making.

In this situation, TECH has created a comprehensive online program, adapted to the individual needs of students, eliminating barriers such as the need to travel to a physical location or adhere to fixed schedules. Additionally, it is supported by the revolutionary Relearning methodology, which involves the repetition of key concepts to ensure an optimal and natural understanding of the contents.

This **Postgraduate Certificate in Infectious Emergencies and Sepsis 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 Infectious Emergencies and Sepsis 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 self-assessment can be used 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 interpret relevant laboratory studies and radiological findings, recognizing and treating Emerging and Reemerging Infections, from the hand of the best digital university in the world, according to Forbes"

“*You will address the recognition and treatment of Emerging and Reemerging Infections in the pediatric setting, through the best didactic materials, at the forefront of technology and education*”

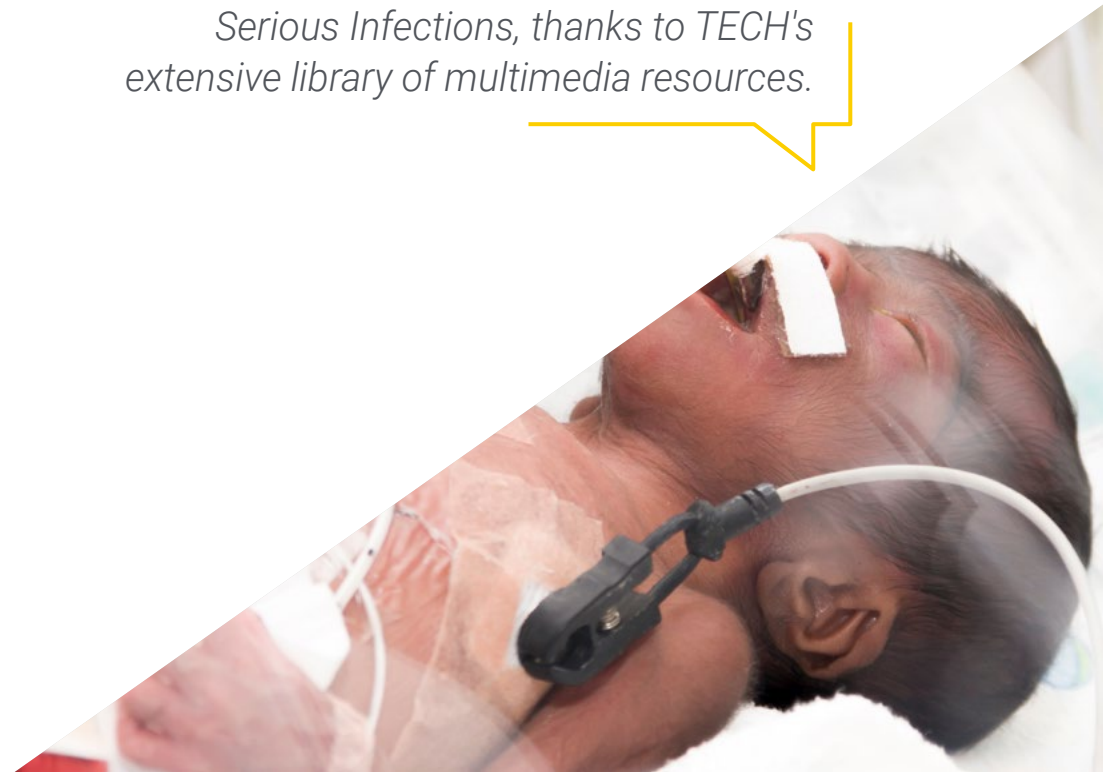
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 examine the latest research and trends in the field of infectious diseases to address new challenges in the care of critically ill pediatric patients. Enroll now!

You'll gain profound understanding and application of current guidelines for the management of pediatric Sepsis and Serious Infections, thanks to TECH's extensive library of multimedia resources.



02 Objectives

This Postgraduate Certificate will equip physicians with the knowledge and skills necessary to quickly and accurately identify early signs of Sepsis and Septic Shock in pediatric patients, as well as to apply rapid response protocols. In addition, they will be specialized in the implementation of initial management strategies, including fluid resuscitation and the appropriate use of antimicrobials, to stabilize the patient and prevent serious complications. They will also deepen their understanding of current guidelines for the management of pediatric sepsis and other serious infections.



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The objectives of this Postgraduate Certificate will enhance your ability to provide high quality care and effective response to Infectious Emergencies and Sepsis in the PICU"



General Objectives

- ◆ 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



You will be qualified to perform differential diagnosis of Common Infectious Diseases in the PICU and to manage associated complications, such as Multiple Organ Failure"





Specific Objectives

- ♦ 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 program faculty are experts in the field of Pediatric Medicine and in the management of Severe Infectious Diseases in children. In fact, many of them are involved in the research and development of updated clinical guidelines for the treatment of pediatric Sepsis and other Serious Infections, imparting knowledge based on scientific evidence and current clinical practices. In addition, through their experience and dedication, these mentors will be instrumental in training graduates to meet emerging challenges in the care of sick pediatric patients.



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The faculty is comprised of physicians specializing in Pediatric Intensive Care and Emergency Medicine, with extensive clinical experience and a strong academic background”

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. 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. 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. Millán Zamorano, José Antonio

- ♦ FEA in the Neonatal and PICU 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. 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

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

04

Structure and Content

This academic program will address initial management strategies, including fluid resuscitation and appropriate use of antimicrobials, as well as understanding and application of current guidelines for treating pediatric Sepsis and other Serious Infections. In addition, they will explore differential diagnoses of Common Infectious Diseases in the PICU, management of associated complications, such as Multiple Organ Failure, and interpretation of relevant laboratory and radiological studies.



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You will be equipped with the skills necessary to recognize, stabilize and treat pediatric patients in emergency situations, supported by the revolutionary learning methodology known as Relearning”

Module 1. Infectious Emergencies and Sepsis in the Pediatric Intensive Care Unit

- 1.1. Sepsis and Septic Shock in Pediatrics
 - 1.1.1. Diagnostic Criteria for Sepsis and Septic Shock in Pediatric Patients for a Timely and Accurate Diagnosis
 - 1.1.2. Hemodynamic Resuscitation of Children with Septic Shock: Optimizing Tissue Perfusion and Administration of Fluids and Vasopressors
 - 1.1.3. Response to Antimicrobial Therapy in Pediatric Patients with Sepsis and Septic Shock Adjustment of Therapies according to Culture and Sensitivity Test Results
- 1.2. Management of Severe Infections and Antibiotics
 - 1.2.1. Appropriate Selection and Prescription of Antimicrobials in Pediatric Patients with Severe Infections: Local Microbiology, Age and Weight of Patient and Pediatric Pharmacokinetics
 - 1.2.2. Comprehensive Management Strategies for Patients with Serious Infections: Monitoring of Vital Signs, Interpretation of Laboratory Tests and Ongoing Clinical Evaluation
 - 1.2.3. Implementation of Protocols for Appropriate Antimicrobial Use in the PICU: Duration of Treatment and Escalation of Antimicrobials when Necessary
- 1.3. Opportunistic Infections in ICU
 - 1.3.1. Opportunistic Infections that can Affect Pediatric Patients in the ICU, especially those with Underlying Medical Conditions or Immunosuppression
 - 1.3.2. 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
 - 1.3.3. Risk Assessment and Management of Opportunistic Infections in Immunocompromised Patients: Management Strategies According to the Individual Needs of Each Patient
- 1.4. Nosocomial Infection Prevention and Control
 - 1.4.1. Design and Implementation of Effective Strategies to Prevent Transmission of Nosocomial Infections in the PICU: Hand Hygiene, Asepsis and Proper Management of Medical Devices
 - 1.4.2. Infection Prevention Practices in the ICU by Monitoring Infection Rates and of Infection Rates and Identification of Areas for Improvement
 - 1.4.3. Training of Healthcare Personnel and Patient Caregivers on Nosocomial Infection Prevention Measures, Promoting a Culture of Safety and Prevention
- 1.5. Tropical Diseases in ICU
 - 1.5.1. Recognition and Diagnosis of Tropical Diseases in Pediatric Patients Admitted to the ICU, especially those with a History of Travel to Endemic Areas
 - 1.5.2. Specific Management Plans for Tropical Diseases: Selection and Administration of Anti-parasitic and Antiviral Treatments
 - 1.5.3. Prevention Strategies to Reduce Patient Exposure to Tropical Diseases in the ICU: Protection Against Vectors and Education to Patients and their Families
- 1.6. Immunodeficiencies and ICU Management
 - 1.6.1. Clinical Management of Pediatric Patients with Immunodeficiencies Requiring Intensive Care
 - 1.6.2. Management Protocols in the Administration of Immunoglobulins and Prophylaxis of Opportunistic Infections in Patients with Severe Immunodeficiencies
 - 1.6.3. Collaboration with Immunology Specialists to Optimize the Management of Pediatric Immunodeficiency Patients: Planning of Stem Cell Replacement Therapies if Necessary
- 1.7. Management of the Immunosuppressed Patient
 - 1.7.1. Causes and Degree of Immunosuppression in Pediatric Patients: Patients who have Received Organ Transplantation or Immunosuppressive Therapies to Customize their Clinical Management
 - 1.7.2. Infection Prevention Strategies in Immunosuppressed Patients: Administration of Antimicrobial Prophylaxis and Education on Hygiene Measures and Risk Avoidance
 - 1.7.3. Collaboration with Transplant Teams and Immunology Specialists: Coordination and Supervision of the Comprehensive Care of Immunosuppressed Pediatric Patients in the ICU
- 1.8. Central Nervous System Infections
 - 1.8.1. Central Nervous System Infections in Pediatric Patients, Meningitis and Encephalitis, by Interpretation of Clinical Findings and Laboratory and Neuroimaging Studies
 - 1.8.2. Development of Specific Management Plans for Patients with Central Nervous System Infections: Choice and Dosage of Antimicrobials and Neurological Support Therapies
 - 1.8.3. Neurological Evolution of Pediatric Patients with Central Nervous System Infections: Treatment Strategies



- 1.9. Severe Viral Diseases
 - 1.9.1. Severe Viral Diseases in Pediatric Patients in the ICU: Serious Viral Respiratory Infections and Emerging Viral Diseases
 - 1.9.2. Management of Viral Diseases: Antiviral Administration, Advanced Respiratory Support and Viral Load Monitoring in Critically Ill Patients
 - 1.9.3. Viral Disease Prevention and Control Strategies in the ICU: Application of Isolation Protocols and Protective Measures for Medical and Nursing Staff
- 1.10. Isolation Protocols and Barriers
 - 1.10.1. Isolation Protocols in the PICU to Prevent the Transmission of Infectious Diseases: Route of Transmission, Duration of Isolation and Specific Precautions
 - 1.10.2. Isolation Measures and Appropriate use of Personal Protective Equipment (PPE) to Minimize the Risk of Infection
 - 1.10.3. Evaluating the Effectiveness of Isolation Protocols and Making Adjustments to Improve Patient Safety

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Bet on TECH! Its comprehensive approach will ensure you acquire the knowledge and skills necessary to provide high quality care to pediatric patients in critical 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.



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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. 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.

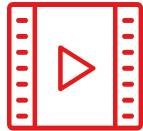
Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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

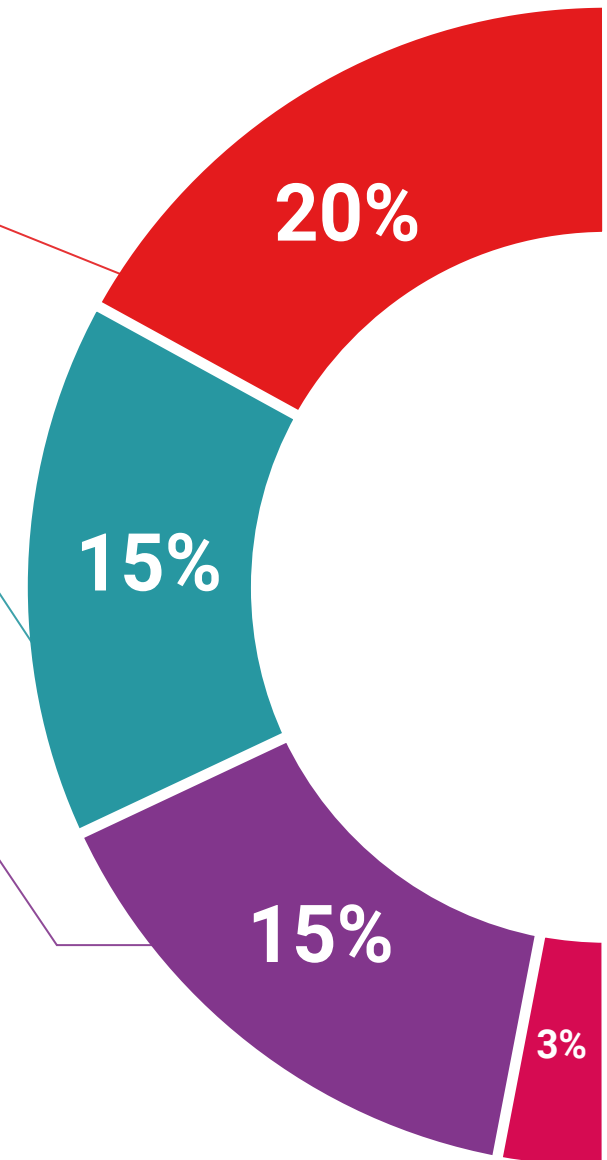
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

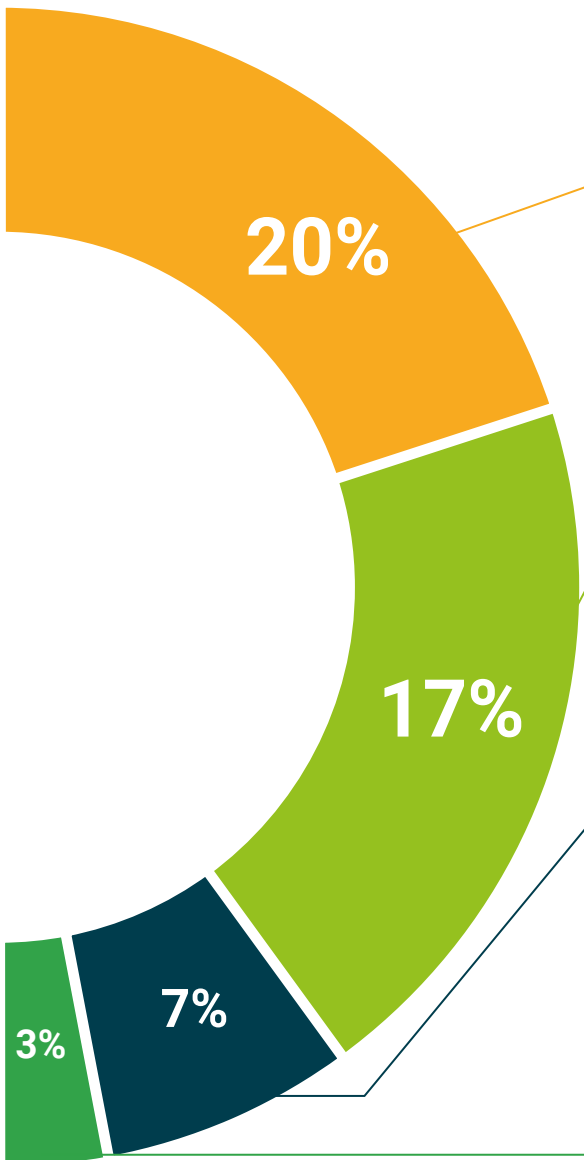
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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 Certificate in Infectious Emergencies and Sepsis in the PICU guarantees, in addition to the most accurate and up-to-date education, access to a Postgraduate Certificate 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 Certificate in Infectious Emergencies and Sepsis 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 Certificate in Infectious Emergencies and Sepsis in the PICU**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 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 Certificate
Infectious Emergencies and
Sepsis in the PICU

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Postgraduate Certificate

Infectious Emergencies and Sepsis in the PICU

