

Postgraduate Certificate

Management of Patients with
Multidrug-Resistant Bacterial
Infections in Intensive Care
Units (ICU)





Postgraduate Certificate Management of Patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU)

- » 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/management-patients-multidrug-resistant-bacterial-infections-intensive-care-units-icu

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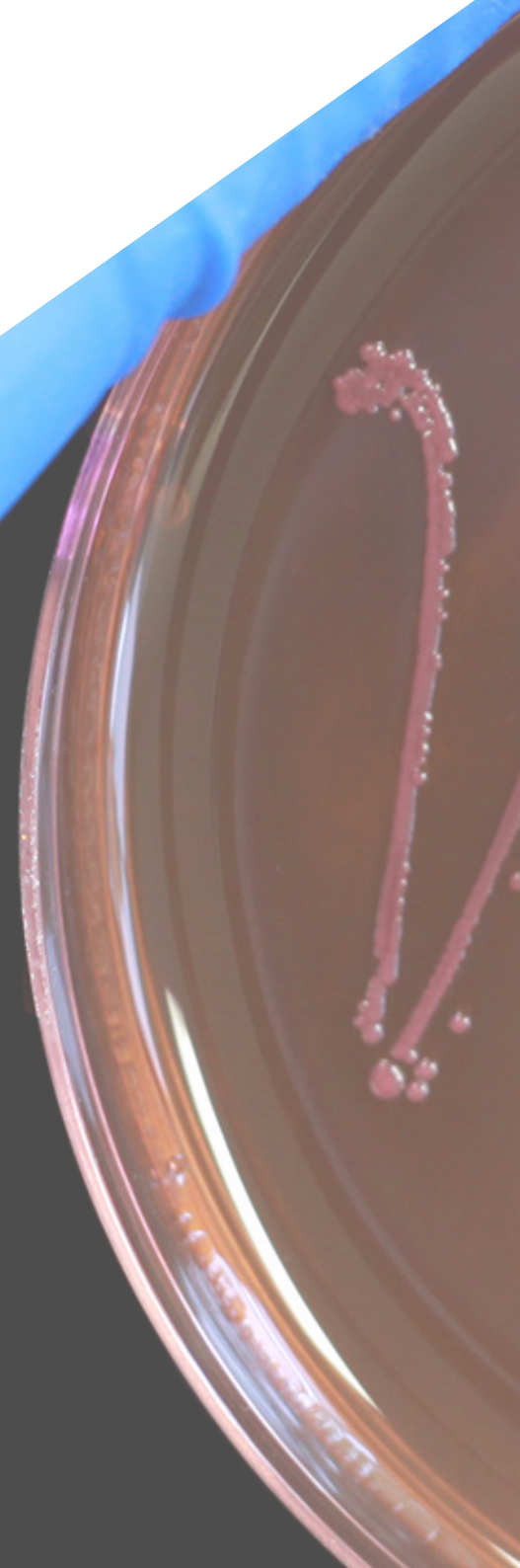
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01

Introduction

The Management of Patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units represents a major challenge in modern medicine. These environments, where the most critical and vulnerable patients are located, are especially susceptible to difficult-to-treat infections due to the presence of pathogens resistant to multiple antibiotics. Therefore, the implementation of strict control measures is crucial to prevent the spread of these bacteria. In this context, TECH has designed this comprehensive program, through which physicians will be able to acquire a complete update and prepare themselves to address complex situations in this field. In addition, they will specialize through the successful Relearning methodology.



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Thanks to this 100% online Postgraduate Certificate, you will learn in depth about the different types of pathologies associated with the field of Multi-resistant Bacteria, enabling you to fight them in the most effective way"

Properly treating patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU) is vital due to the complexity and severity of these infections in an environment where patients are already critically ill. In addition, ICUs are particularly vulnerable, as patients are often immunocompromised and more susceptible, due to their underlying medical condition and the need for invasive procedures.

Therefore, effective management of these patients requires a comprehensive, multidisciplinary approach. Specialists must collaborate with other professionals to design personalized treatment strategies based on laboratory tests that identify specific bacteria and their resistance profile. This may involve the use of last-line antibiotics, combinations of different antimicrobial agents, and evaluation of alternative treatments such as bacteriophage therapy.

In this context, TECH has designed this complete Postgraduate Certificate, which responds to the demand of professionals who wish to specialize in this complex field. Therefore, during 6 weeks, graduates will delve into diagnostic methods and treatments of pathologies such as Pneumonia and Pseudomembranous Colitis. They will also acquire skills to develop antibiotic therapy strategies, as well as to establish infection prevention plans. Likewise, they will master evaluation and continuous improvement tools.

All this, through a 100% online vanguard methodology and a complete didactic material, elaborated by contrasted experts in this field. Additionally, they will be supported by multimedia and interactive content, which will give them the opportunity to specialize in a more attractive way and acquire a more comprehensive knowledge.

In this same sense, they will have the analysis of real case studies, which will address the complexity of the area of multidrug-resistant bacteria.

This **Postgraduate Certificate in Management of Patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU)** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of case studies presented by experts in Multidrug-Resistant Bacteria, healthcare and intensive care
- ♦ 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



Update your clinical practice and become a reference professional in the field of Multidrug-Resistant Bacterial in crisis situations, through the best didactic materials, at the forefront of technology and education"



Update your knowledge of Biostatistics and the different types of variables that influence Methodological Research"

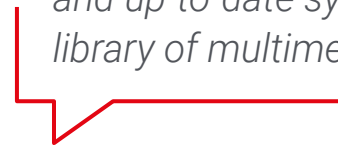
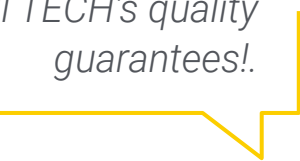
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 analyze the risk factors and the impact of Nosocomial Infections on the critically ill patient, through a complete and up-to-date syllabus and an extensive library of multimedia resources.

Prepare yourself 100% online! Take advantage of a syllabus that you can follow at your own pace, with no set schedule and from anywhere. With all TECH's quality guarantees!.



02

Objectives

This program will enable doctors to update their skills to deal with the most complex situations in the area of knowledge of this Postgraduate Certificate. For this reason, a rigorous syllabus has been developed, thanks to which professionals will develop skills for the prevention of infections caused by Multidrug-resistant bacteria in critical patients. In addition, they will acquire comprehensive specialization in diagnostic and treatment methods, as well as strategies for assessing the impact of pathologies.



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Achieve all your objectives through a cutting-edge methodology and with the support of real case studies"



General Objectives

- ♦ Understand the colonization and infection of patients in Intensive Care Units (ICUs), the different types and risk factors associated with infection
- ♦ Evaluate the impact of Nosocomial Infections in the critically ill patient, including the importance of risk factors and their impact on length of stay in the ICU





Specific Objectives

- Acquire specialized knowledge on the diagnosis and treatment of common infections in ICUs
- Develop skills for the prevention of Multiresistant Bacterial Infections in the ICU

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Create infection prevention plans for Multi-Resistant Bacteria and ensure the well-being of patients in Intensive Care Units”

03

Course Management

This TECH Postgraduate Certificate meets the highest guarantees of excellence, providing students with specialization from a team of leading experts. In fact, professionals who will teach this program have a proven track record and extensive experience in research, as well as a solid academic background. Therefore, they will be able to offer graduates a complete specialization, prioritizing the internalization of concepts for their subsequent practical application.



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You will boost your professional career thanks to the teaching support of the best team of experts, carefully selected by TECH to teach this Postgraduate Certificate"

Management



Dr. Ramos Vivas, José

- Director of the Banco Santander-Universidad Europea del Atlántico Chair in Innovation
- Researcher at the Center for Innovation and Technology of Cantabria (CITICAN)
- Academic of Microbiology and Parasitology at the European University of the Atlantic
- Founder and former director of the Cellular Microbiology Laboratory of the Valdecilla Research Institute (IDIVAL)
- PhD in Biology from the University of León
- Doctor in Sciences from the University of Las Palmas de Gran Canaria
- Degree in Biology from the University of Santiago de Compostela
- Master's Degree in Molecular Biology and Biomedicine from the University of Cantabria
- Member of: CIBERINFEC (MICINN-ISCIII), Member of the Spanish Society of Microbiology, Member of the Spanish Network of Research in Infectious Pathology



Professors

Dr. Suberviola Cañas, Borja

- ♦ Assistant Physician of the Intensive Care Medicine Service at the Marqués de Valdecilla University Hospital
- ♦ Principal Investigator and Collaborating Researcher in 6 projects with competitive funding
- ♦ Doctor en Medicina por la Universidad de Cantabria
- ♦ Specialty in Intensive Care Medicine and Resuscitation at the Marqués de Valdecilla University Hospital in Santander
- ♦ Degree in Medicine from the University of the Basque Country
- ♦ Master's Degree in Infectious Diseases in the Critically Ill Patient from the University of Valencia
- ♦ Member and Vice-coordinator of the Working Group on Infectious Diseases and Sepsis (GTEIS) of the Spanish Society of Intensive Care Medicine, Critical Care and Coronary Units (SEMICYUC).
- ♦ Member of the Group of Infectious Diseases in the Critical Patient of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC)

04

Structure and Content

The syllabus of this Postgraduate Certificate has been designed taking into account the most relevant concepts in the field of Multidrug-Resistant Bacterial Infections in the ICU. In addition, recent innovations in the field have been taken into consideration in order to provide doctors with a complete and up-to-date specialization. Through the syllabus, professionals will delve into the risk factors associated with infections in critically ill patients, acquiring competencies for the development of programs for the optimization of antibiotic use in the intensive care area.



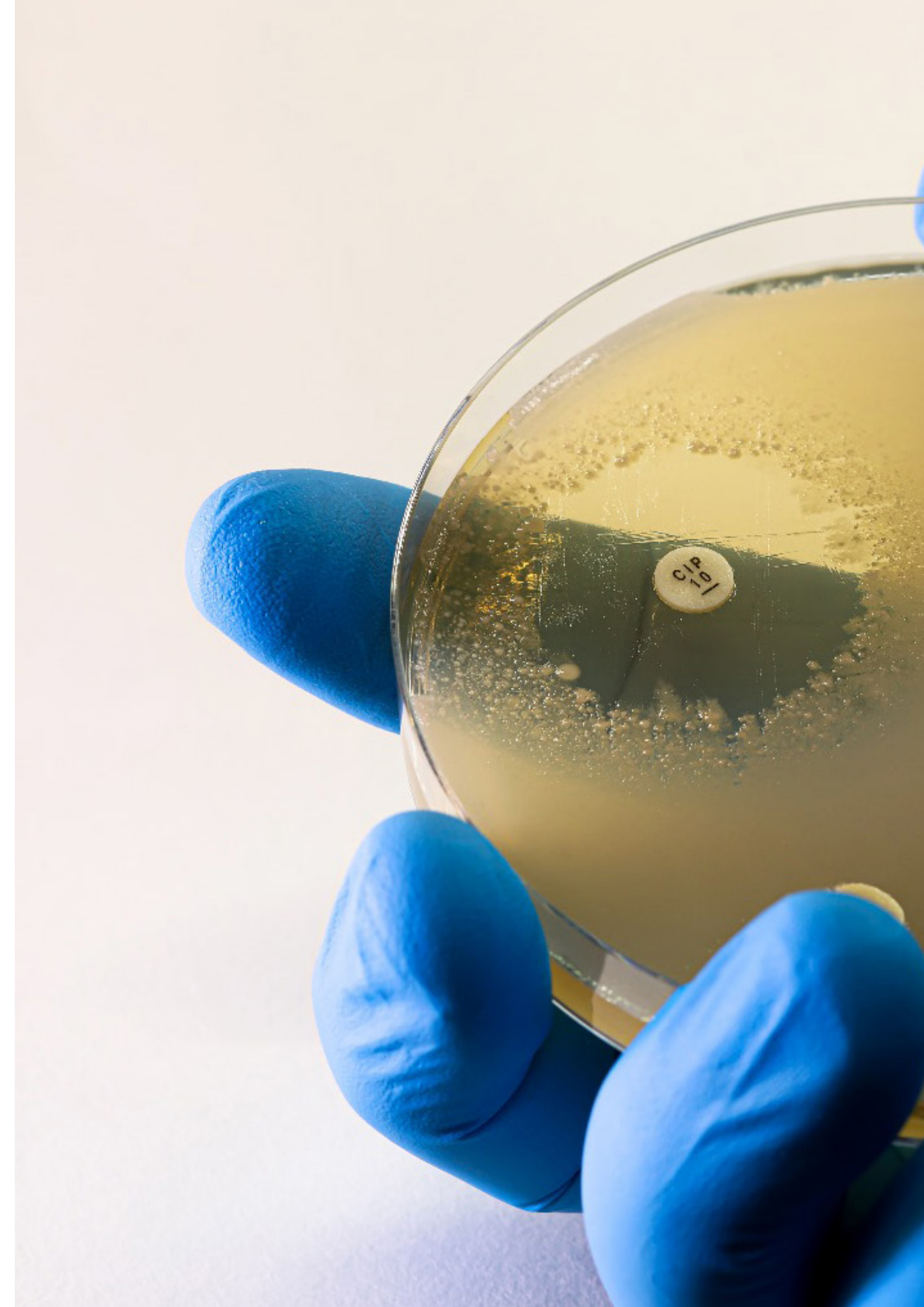
A close-up photograph of a petri dish containing a bacterial culture. The surface of the agar is covered with a dense, textured layer of bacteria, showing various patterns and colors. The lighting is warm, highlighting the intricate details of the microbial growth.

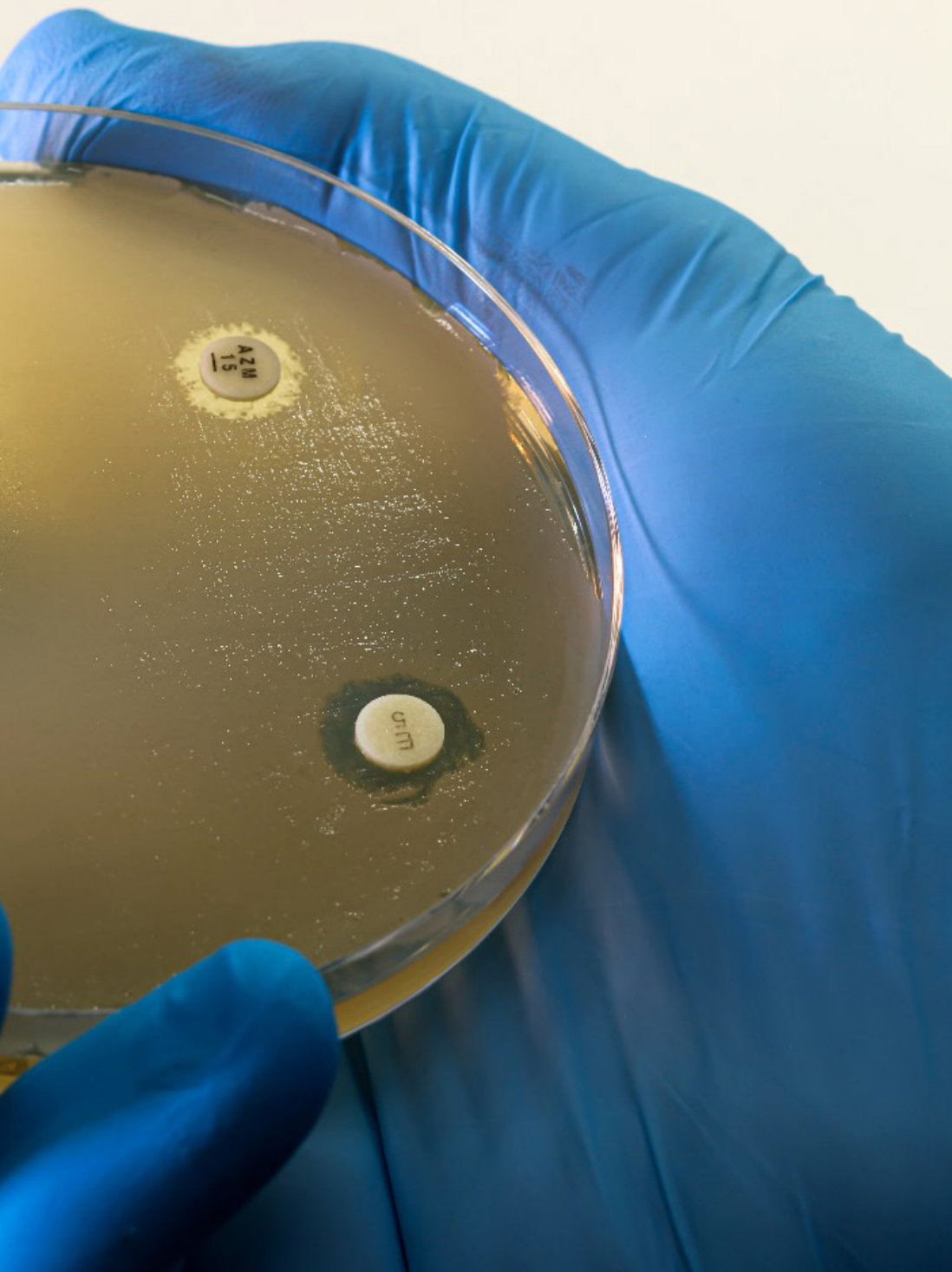
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You will have access to a complete and rigorous syllabus, with the most up-to-date teaching material on the academic scene, and with the support of a revolutionary learning methodology known as Relearning"

Module 1. Management of Patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU)

- 1.1. Colonization and Infection of Patients in ICUs
 - 1.1.1. Types of ICUs
 - 1.1.2. Epidemiology
 - 1.1.3. Risk Factors Associated with Infection in ICUs
- 1.2. Impact of Nosocomial Infections in the Critically Ill Patient
 - 1.2.1. Importance of Nosocomial Infections in ICUs
 - 1.2.2. Risk Factors for Nosocomial Infections
 - 1.2.2.1. Patient Factors
 - 1.2.2.2. Factors of the ICU Environment
 - 1.2.2.3. Factors Related to the Healthcare Personnel
 - 1.2.3. Impact of Nosocomial Infections in Immunocompromised Patients
 - 1.2.4. Impact on Length of Stay in the ICU
- 1.3. Pneumonia Associated with Mechanical Ventilation
 - 1.3.1. Etiology
 - 1.3.2. Diagnosis
 - 1.3.3. Treatment
- 1.4. Urinary Tract Infections Associated with Catheters
 - 1.4.1. Etiology
 - 1.4.2. Diagnosis
 - 1.4.3. Treatment
- 1.5. Primary Bacteremias and Catheter-related Bacteremias
 - 1.5.1. Etiology
 - 1.5.2. Diagnosis
 - 1.5.3. Treatment
- 1.6. Pseudomembranous Colitis
 - 1.6.1. Etiology
 - 1.6.2. Diagnosis
 - 1.6.3. Treatment





- 1.7. Infections by Opportunistic Pathogens
 - 1.7.1. Etiology
 - 1.7.2. Diagnosis
 - 1.7.3. Treatment
- 1.8. Appropriate Use of Antibiotics
 - 1.8.1. Programs for the Optimization of Antibiotic use (PROA) in the ICU
 - 1.8.2. Antibiotic Therapy Strategies for the Treatment of Gram-negative Patients
 - 1.8.3. Antibiotic Therapy Strategies for the Treatment of Gram-positive Patients
 - 1.8.4. Antibiotic Therapy Strategies for the Treatment of Co-infections
- 1.9. Strategies for the Prevention of BMR Infections in the ICU
 - 1.9.1. Hygiene Measures
 - 1.9.2. Infection Control Measures
 - 1.9.3. Protocols and Clinical Practice Guidelines
 - 1.9.4. Education and Training of ICU Personnel
 - 1.9.5. Participation of Patients and their Families
- 1.10. Infection Prevention Strategies in the ICU
 - 1.10.1. Infection Prevention Strategies in the ICU According to the Focus
 - 1.10.1.1. Pneumonia
 - 1.10.1.2. Bacteremia
 - 1.10.1.3. Urinary Infection
 - 1.10.2. Evaluation and Quality Indicators in the Prevention of Infections
 - 1.10.3. Evaluation and Continuous Improvement Tools
 - 1.10.4. Successful Examples of Infection Prevention in ICUs



Become a prestigious professional in the area of Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU) environments, with the best digital university in the world, according to Forbes"

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 Management of Patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU) 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 Management of Patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU)** 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 Management of Patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU)**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**





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