

Internship Program

Advances in Antibiotic Therapy and Antibiotic Resistance



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and Antibiotic Resistance

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01 Introduction

Biotechnology is researching new therapeutic strategies every day to treat diseases caused by viruses and bacteria. These scientific studies have led to the discovery of methods to diagnose antibiotic resistance and determine the presence of Superbacteria. The rapid evolution of this academic field requires the Epidemiology professional to keep updated on its main novelties. However, there are no academic programs, of a practical nature, that facilitate the physician's rapid and flexible assimilation of the competencies most in demand within this health area. For this reason, TECH has devised this 100% practical, face-to-face and intensive program through which the professional will be updated on all these aspects, in a 3-week stay in a prestigious hospital center.



This intensive, face-to-face internship will bring you up to date on the main discoveries related to super-resistant microbes and the most innovative therapeutics to treat patients affected by them"





Antibiotic resistance has become a daily problem in hospitals around the world. International studies report that this condition is the result of many variables, such as the excess of medical prescriptions without an adequate definition of pathologies or self-medication, among others. In addition, the abuse and misuse of antibacterial therapies contributes to the creation of drug-resistant bacteria. These situations often generate long admissions of patients to health institutions and drive up health care costs. Therefore, the sector demands professionals with an updated qualification on the most innovative criteria for the application of Antibiotic therapies in daily medical practice.

TECH, aware of this problem, has developed a new Internship Program. Through it, the epidemiologist will be updated on the latest developments in the health field facing infectious diseases caused by viruses, bacteria, fungi, and parasites. This will be done without having to worry about an excessive theoretical learning load, since this pedagogical modality focuses on the development of specific competencies and skills based on the student's face-to-face and intensive stay in prestigious medical facilities.

The specialist will move to the centers of their preference or geographical proximity for 3 weeks. From that institution, their preparation will be supported by experts with extensive experience in the area of Antibiotic Therapy. You will also be supervised by an assistant tutor. This figure will help you to master the most advanced care dynamics, as well as the most modern technologies in use in the sector and the methodologies for interpreting results. In this way, you will be able to keep up to date with the main innovations in this health area, providing direct attention to real cases and using the most competent equipment on the market.

02

Why Study an Internship Program?

Currently, theoretical learning programs on Advances in Antibiotic Therapy do not offer the epidemiologist all the aspects of direct care of patients with viral, bacterial, fungal or parasitic infections. For this reason, TECH has designed an intensive, practical and face-to-face stay of 3 weeks duration, in which the specialist will be updated on the main advances in this area of care. Through direct contact with real cases, and personalized learning with the best experts, the doctor will acquire competencies and skills more quickly and flexibly. In addition, they will have the possibility of applying all these updates in their daily work environment.



This course will provide you with updated methodologies to read and interpret the Antibiogram of patients and, thus, be able to determine which drug will provide greater security of recovery"

1. Updating from the Latest Technology Available

Throughout this study program, the specialist will handle modern technologies such as Antibiograms to evaluate which bacteria affect the human organism and the most precise drug to combat them. At the same time, the specialist will examine other innovative tests for diagnosis and to prevent the patient's sensitivity or resistance to a given therapy.

2. Gaining In-depth Knowledge from the Experience of Top Specialists

The specialist who takes this qualification will have the support of a team of renowned health professionals in the area of epidemiology and antibacterial therapies. Through these professionals, the physician will develop the latest methodological skills for the reading and interpretation of diagnostic tests, which will make it possible to choose the most appropriate treatment for each virus or bacterium.

3. Entering First-Class Clinical Environments

TECH's Internship Program in Advances in Antibiotic Therapy and Antibiotic Resistance will take place in prestigious and rigorous healthcare centers. In these facilities, the physician will have access to the best equipment to perform drug resistance or sensitivity tests. At the same time, they will work with distinguished experts who possess advanced skills for the management of these technologies.



4. Putting the acquired knowledge into daily practice from the very first moment

The academic market has educational programs focused on the theoretical assimilation of the latest developments in the area of Epidemiology. However, this qualification stands out in the educational scenario for providing 100% practical preparation to professionals and the opportunity to execute their competencies first-hand, in order to attend to various real cases.

5. Expanding the Boundaries of Knowledge

TECH, the largest digital academic institution in the world, focuses on the practical preparation of the student through an innovative mode of study. Through it, the professional will have access to international centers to develop their on-site stay and, therefore, update their skills with respect to the most recent advances in Antibiotic Therapy.

“

*You will have full practical immersion
at the center of your choice”*

03 Objectives

This syllabus examines the main developments in the field of Antibiotic Therapy and Antibiotic Resistance. In this way, the epidemiologist will be brought up to date in an exclusively practical way, in direct dialogue with the best experts in the sector and applying their new skills when dealing with real cases. The aim of the program is to provide graduates with all the resources they need to update their practice through their own experience.



General Objectives

- Provide students with advanced, in-depth, up-to-date, and multidisciplinary information that allows them to comprehensively approach the health-infectious disease process, the use of antibiotics, and antibiotic resistance
- Provide training and - practical/theoretical improvement that will enable a reliable clinical diagnosis supported by the efficient use of diagnostic methods to indicate an effective antimicrobial treatment
- Encourage the acquisition of technical skills and abilities, through a powerful audiovisual system, and the possibility of development through online simulation workshops and/or specific training





Specific Objectives

- ♦ Develop skills to implement prophylactic plans for the prevention of these diseases
- ♦ Assess and interpret the epidemiological sanitary characteristics and conditions of countries that lead to the emergence and development of antibiotic resistance
- ♦ Explain the complex interrelationships between the host, the microorganism, and the antibiotic to be used
- ♦ Address the important role of microbiology and the diagnosis and control of infectious diseases
- ♦ Describe the main mechanisms of antimicrobial resistance
- ♦ Highlight the importance of rational therapeutics in the rational use of antimicrobials
- ♦ Address the most important elements among the resistance mechanisms of superbacteria and other germs in a general sense
- ♦ Delve into drug usage studies within pharmacoepidemiology to facilitate the selection of antimicrobials in daily clinical practice
- ♦ Emphasize the role of interpretative reading of an antibiogram and the identification of new resistance genotypes that present clinical relevance
- ♦ Explain the pathophysiologic and pathogenic interrelationships between antimicrobial use and the immune response
- ♦ Justify the importance of controlling the use of antimicrobials as a means of reducing antibiotic resistance
- ♦ Emphasize the role of immunity and new alternatives for the treatment of infections
- ♦ Address the crucial issue of super-resistant microbes and their relationship to antimicrobial use based on the most up-to-date concepts
- ♦ Advise pharmaceutical and biotechnology industry teams in the process of research and production of new antimicrobials and alternative treatments for infectious diseases
- ♦ Emphasize the future challenges of infectious diseases in decreasing infectious diseases morbidity and mortality and antimicrobial treatment



Thanks to this qualification, you will update your practical skills on the absorption, transport, distribution, metabolism, excretion of antibiotics”

04 Educational Plan

This Internship Program in Advances in Antibiotic Therapy and Antibiotic Resistance will take place over consecutive 8-hour days, from Monday to Friday, to complete 3 educational weeks. Throughout this period, the epidemiologist will develop a face-to-face and intensive stay in a first level hospital center. This health institution stands out for its prestigious medical team, updated with the latest healthcare trends within this health discipline.

In this completely practical Internship proposal, the activities are aimed at developing and perfecting the competencies necessary for the provision of medical care in areas and conditions that require a high level of qualification, and are oriented towards specific training for the practice of the activity.

TECH wishes to provide personalized guidance to professionals enrolled in this course. For this reason, it has created the figure of the assistant tutor, who will be in charge of supervising all academic progress. This expert will be in charge of clarifying doubts and concepts of interest, as well as inserting the physician in the work dynamics of a medical practice or unit specialized in the development of antibacterial and antiviral therapies.

The practical education will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other fellow trainees that facilitate teamwork and multidisciplinary integration as transversal competencies for of medicine praxis (learning to be and learning to relate).

The procedures described below will form the basis of the practical part of the internship, and their implementation is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:



Receive specialized education in an institution that can offer you all these possibilities, with an innovative academic program and a human team that will help you develop your full potential"



| Module | Practical Activity |
|--|--|
| Pharmacology and therapeutics based on the generalities of microbiology | Implement prophylactic plans for the prevention of these infectious pathologies |
| | To inquire into the environmental, social and economic aspects of the patient that lead to the emergence and development of infectious diseases and antibiotic and antibiotic resistance |
| | Evaluate history of infectious disease in the patient's immediate environment, and examine the response of the family environment to the use of a given drug |
| | Prescribe medications safely, taking into account size, weight, and age of each patient |
| Antivirals and Antibiotics today | Treat the patient antiviral drugs or antibiotics that fit the specific type of pathology that affects them by means of Antibiogram studies |
| | Indicate Antivirals or Antiretrovirals, taking into account their latent differences and how they may affect the patient |
| | Verify the impact of Antiviral and Antibiotic therapies on the patient's individual microbiota to combat other health problems resulting from pharmacological excess |
| | Specify, in detail, the duration of Antiviral and Antibiotic therapies to the patient to avoid over-consumption of drugs or early and unwarranted discontinuation of these |
| Antimicrobials, Antimycotics, Antiparasitics nowadays | Using Antimicrobials as Alternatives to Reduce Antibiotic Resistance |
| | Prescribe therapy with injectable Fluconazole to patients presenting with yeast infections following chemotherapy or radiotherapy sessions |
| | Perform a metabolic panel of women with persistent C auris (vaginal candidiasis) to determine the antifungal best suited to their disease |
| | Combining antiparasitic drugs such as Albendazole with surgical techniques to combat serious conditions such as the dog tapeworm that can damage various organs |
| Antibiotic resistance and therapies of the near future | To perform a genetic analysis of patients, based on pharmacogenomics, in order to determine which drugs are most accurate for them according to their DNA |
| | Indicate to the patient a blood, urine, or sputum culture to assess their sensitivity to antibiotics their sensitivity to antibiotics |
| | Develop alternative and innovative therapies with Bacteriophages, non-harmful viruses that feed on harmful bacteria to the human body |
| | Treat patients with infections with novel techniques such as Liposome nanoparticles, used as bait to trap bacterial toxins |
| | Use novel technologies such as RA01, an anti-infective therapy based on the existence of antibodies that act as facilitators of infections |

05 Where Can I Do the Internship Program?

Students in this program will have access to hospital centers located in different cities and countries around the world. This unique learning opportunity will offer them the possibility to be updated with respect to international standards in the field of Antibiotic Therapy. All the locations chosen by TECH for this Internship Program have prestigious experts and operate the most innovative technologies in this professional field.




Enroll in TECH and you will put into practice the most up-to-date therapeutic procedures against viral and bacterial infections"





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The student will be able to do this program at the following centers:



Policlínico HM Sanchinarro

| | |
|--------------|--------|
| Country | City |
| Spain BORRAR | Madrid |

Management: Av. de Manoteras, 10,
28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

Related internship programs:

- Gynecological Care for Midwives
- Nursing in the Digestive Tract Department



Make the most of this opportunity to surround yourself with expert professionals and learn from their work methodology"

06

General Conditions

Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.



General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

1. TUTOR: During the Internship Program, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor, whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

2. DURATION: The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

3. ABSENCE: If the students do not show up on the start date of the Internship Program, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

4. CERTIFICATION: Professionals who pass the Internship Program will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: The Internship Program shall not constitute an employment relationship of any kind.

6. PRIOR EDUCATION: Some centers may require a certificate of prior education for the Internship Program. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

7. DOES NOT INCLUDE: The Internship Program will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

07 Certificate

This **Internship Program in Advances in Antibiotic Therapy and Antibiotic Resistance** contains the most complete and up-to-date program on the professional and academic scene.

After the student has passed the evaluations, they will receive their corresponding TECH Internship Program issued by TECH Technological University via tracked delivery.

The certificate issued by TECH will reflect the grade obtained in the test.

Title: **Internship Program in Advances in Antibiotic Therapy and Antibiotic Resistance**

Duration: **3 weeks**

Course Modality: **Monday to Friday, 8-hour consecutive shifts**

Total Hours: **120 h. of professional practice**



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