

Internship Program Emergency Toxicology



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Internship Program
Emergency Toxicology

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01 Introduction

Emergency Toxicology has recently come up with much more comprehensive diagnostic and therapeutic procedures. Thus, specific management protocols have emerged for pregnant women, the elderly, drug addicts and for personnel who work directly with chemical products. However, not all specialists manage to keep up to date with these new developments. In order to keep up to date with the advances in this discipline, TECH has created an innovative certification program. This program is characterized by a face-to-face and intensive stay in a rigorous hospital center, where the specialist will apply techniques and expand their skills. Throughout this educational process, they will be accompanied by the best trained experts.



Enroll in this degree and get up to date on the latest advances in Emergency Toxicology for the management of different conditions such as drug overdose in drug addict patients"





With scientific evolution, medicine has found better therapeutic strategies to deal with poisoning in emergency departments. Proof of this is the emergence of specific diagnostic tools, such as molecular toxicology, or the use of devices such as dialysis machines to remove harmful substances from the body. Although all these advances are of significant importance for the practice of healthcare, many specialists are not up to date on their applications. This is due, to a large extent, to the fact that existing teaching programs place more emphasis on theory than on practice.

TECH has proposed to solve this problem with an innovative qualification. Thus arises this Internship Program in which the doctor will acquire first level skills from a prestigious hospital facility. They will go there for 3 weeks, on 8-hour consecutive days, from Monday to Friday. This will be the appropriate space to come into contact, in a face-to-face and immersive manner, with state-of-the-art technologies for the care of patients affected by heavy metals, industrial substances, insect bites and poisonous reptiles or the improper inhalation of gases and cleaning products.

These skills will be applied to real patients, under the close supervision of an assistant tutor. This academic figure will supervise the specialist's progress and will include other duties of greater complexity in his or her tasks. Likewise, the graduate will have the opportunity to work together with great experts and discuss intervention strategies for different cases with specific pathologies. Through them, they will also learn about the most exhaustive tendencies to give an integral follow-up to the evolution of this kind of patients. Upon completion of the entire educational process, the physician will have developed a praxis of excellence that they will take back to the workplace

02

Why Study an Internship Program?

Currently, theoretical learning programs on Emergency Toxicology are not enough to keep specialists up to date. For this reason, TECH has devised a 3-week intensive face-to-face clinical practice. In it, physicians will be updated on the most significant advances in this area of care. The doctor will acquire skills quickly and flexibly thanks to direct contact with real cases and personalized learning with the best experts. These elements make this program a unique academic opportunity of its kind.



Thanks to this intensive face-to-face training, you will be able to interpret the results of analysis of intoxicated patients with greater speed and precision"

1. Update from the latest technology available

Throughout this study program, the specialist will handle modern technologies to evaluate the state of the human organism in the face of different types of poisoning and how to determine the most accurate treatments to combat them. Based on this knowledge, the physician will be up to date on excellent therapeutic management that will broaden his professional practice.

2. Gain in-depth knowledge from the experience of top specialists

The specialist who takes this program will have the support of a team of renowned health professionals. Through these professionals, the physician will develop the latest methodological competences for the reading and interpretation of diagnostic tests, which will make it possible to choose the most appropriate treatment for each type of disease.

3. Enter first-class clinical environments

TECH's Internship Program in Emergency Toxicology will take place in prestigious and rigorous health centers. In these facilities, the physician will have access to the best equipment to perform diagnostic tests and to specify more comprehensive treatments. At the same time, they will work with distinguished experts with advanced skills in the use 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 Emergency Toxicology. However, this program distinguishes itself in the educational panorama by providing 100% practical preparation to professionals and the opportunity to execute their competencies in first person, to attend various real cases.

5. Expand the boundaries of knowledge

TECH, the largest digital academic institution in the world, focuses on the practical preparation of students through an innovative study mode. Through it, the professional will have access to international centers to develop their on-site stay and, thus, update their skills with the highest possible excellence.



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

03 Objectives

This syllabus examines the main developments in the field of Emergency Toxicology. Thus, the physician 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 competencies in the care of real cases. The aim of the program is to provide graduates with all the resources they need to update their practice with excellence and rigor.



General Objectives

- Define the basic and general principles of care for the severely poisoned patient
- Identify the main toxins available in our environment
- Describe the main signs and symptoms related to severe acute poisoning and its organ involvement
- Put in place mechanisms to protect the severely poisoned patient and those around them
- Detect complications related to the related toxicant or to the patient's state of health
- Explain the process of care, diagnosis and treatment of the severely poisoned patient in all its dimensions





Specific Objectives

- ◆ Perform assessment of the acutely poisoned patient
- ◆ Explain the process of applying life support in the acutely poisoned patient
- ◆ Apply preventive techniques for gastrointestinal absorption
- ◆ Diagnose the alterations of water and electrolyte balance in the acutely poisoned patient
- ◆ Describe toxicokinetics and its implication for emergency treatment
- ◆ Implement decontamination procedures in acute dermatological intoxications
- ◆ Define the toxicological mechanisms in the male and female genitourinary tract
- ◆ Identify the effects of xenobiotics
- ◆ Describe the ECG alterations that can be seen in intoxications that produce cardiac involvement
- ◆ Recognize the possible arrhythmias to be detected in acute intoxications
- ◆ Manage the hematological involvement that occurs in acute poisonings
- ◆ Carry out procedures for the examination of the patient poisoned by smoke inhalation
- ◆ Determine the therapeutic approach to be carried out in the patient poisoned by smoke inhalation or other respiratory agents
- ◆ Establish the differential diagnosis between the different toxic renal syndromes
- ◆ Identify the clinical pictures that can occur in poisoning with neurological involvement
- ◆ Describe the systemic repercussion of eye poisoning
- ◆ Know those toxins that cause hepatic affectation and their repercussions at the organic level
- ◆ Assess violent and autolytic behaviors in relation to psychiatric toxicology

- ♦ Determine the organic repercussion of toxicology in athletes and the different products used
- ♦ Evaluate poisoning related to possible pharmacological errors in pediatric patients
- ♦ Apply specific protocols to be followed in case of overdose in pregnant women
- ♦ Identify the principles of teratogenesis and all those products that can produce it
- ♦ Master the products that can pose a risk of intoxication in both the mother and the newborn during lactation
- ♦ Examine the epidemiology, etiology and repercussions of acute intoxications in the pediatric and neonatal age
- ♦ Diagnose the characteristics of intentional and unintentional poisoning in the elderly
- ♦ Evaluate the toxicokinetics of paracetamol, antihistamines and decongestants and protocols for their management
- ♦ Recognize the toxicokinetics of antifungal and anti-inflammatory drugs and therapeutic strategies against them
- ♦ Examine the toxicokinetics of opiates, bisphosphonates and antineoplastics and their treatment in case of acute intoxication
- ♦ Determine the toxicokinetics of antiepileptics, antidiabetics and hypoglycemic agents and their appropriate clinical approach
- ♦ Identify the toxicokinetics of selective β_2 -adrenergic agonists, cardioactive steroids, antiarrhythmics, antithrombotics, anticoagulants, thrombolytics, and antifibrinolytics and their treatment in case of acute intoxication
- ♦ Explain the toxicokinetics of antibiotics, antifungals and antivirals, antimalarials, antiparasitics and their correct clinical management
- ♦ Manage the toxicokinetics of SSRI and other atypical antidepressants, sedative hypnotics and barbiturates, benzodiazepines and muscle relaxants and therapeutic approach
- ♦ Know the toxicokinetics of local and general anesthetics, antipsychotics and lithium
- ♦ Master phytotherapeutic and vitamin intoxications
- ♦ Evaluate the toxicokinetics of phencyclidine, ketamine, amphetamines and designer drugs, inhalants, ethanol, cannabinoids and marijuana, cocaine, hallucinogens and their treatment in case of acute intoxication
- ♦ Differentiate the toxicokinetics of substances for chemical subduction and the most recent protocols for their correct management
- ♦ Manage the toxicokinetics of arsenic, lead, iron, taking into account their individualized care
- ♦ Recognize the toxicokinetics of mercury and cyanides, as well as the strategies to prevent the death of the patient and an adequate follow-up of their evolution
- ♦ Recognize the toxicokinetics of petroleum derivatives, fluorine, hydrofluoric acid, methanol, ethylene glycol and other toxic alcohols and their treatment in case of acute poisoning
- ♦ Interpret the toxicokinetics of asphyxiants and pulmonary irritants, antiseptics, disinfectants and sterilants, as well as the most effective protocols of action against them
- ♦ Identify the toxicokinetics of herbicides, organochlorines, organophosphates, organophosphates, carbamates, pyrethroids and insect repellents
- ♦ Introduce specific treatments against these products in case of acute poisoning
- ♦ Evaluate specific poisoning produced by substances such as soaps, shampoos, hair dyes, hairsprays and other hair products
- ♦ Manage general therapeutic measures against poisoning caused by household products
- ♦ Master the physiopathology of caustic poisoning and the protocols to intervene in patients suffering from them
- ♦ Describe the possible serious poisoning produced by marine animals, arthropods, arachnids, tarantulas, scorpions, ants, hymenoptera, butterflies, termites, beetles, reptiles and their clinical approach
- ♦ Classify toxic mushrooms and their possible antidotes
- ♦ Recognize plants with toxic potential and their possible antidotes



“ Thanks to this qualification, you will update your practical skills on how to proceed with clinical data obtained through molecular toxicology diagnostics”

04

Educational Plan

This Internship Program in Emergency Toxicology will be extended in 8 consecutive hours, from Monday to Friday, until completing 3 educational weeks. Throughout this period, the specialist 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 in this health discipline. These experts will provide the professional with personalized guidance. In addition, the figure of the assistant tutor will support this face-to-face educational process, supervising the progress in a dynamic way.

In this completely practical Internship Program, the activities are aimed at developing and perfecting the skills necessary to provide healthcare in areas and conditions that require highly qualified professionals, and are oriented towards specific expertise for practicing the activity, in a safe environment for the patient and with highly professional performance.

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 who facilitate teamwork and multidisciplinary integration as transversal competencies for the practice of La medicine (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 |
|--|---|
| New diagnostic methods in Emergency Toxicology | Apply molecular toxicology tests to patients suspected of having been subjected to pesticide toxicokinetics |
| | Monitoring, by means of biomonitoring, of patients susceptible to heavy metal poisoning |
| | Indicate blood and urine tests to measure the levels of toxic substances in the body |
| | Detect drug abuse as early as possible in order to provide effective treatment through rapid patient questionnaires or medical history review |
| Therapeutic strategies against poisoning in the Emergency Department | Treat patients diagnosed with substance abuse or opioid-based drugs through withdrawal treatment based on a thorough physical and psychological examination |
| | Clean the blood through dialysis of patients contaminated with potent industrial products |
| | Use the chelating agent EDTA to remove heavy metals from the patient's body through urine |
| | Implement ion-exchange based treatment for calcium or resin contamination |
| | Address animal contact intoxications and their possible antidotes |
| | Recommending specific diets to patients after acute chemical poisoning |
| Follow-up protocols for of patients who have suffered from chemical poisoning | Monitor the functioning of kidneys and other organs affected by chemical poisoning |
| | Supervise the evolution of the ocular apparatus after contact with any topical substance |
| | Identify violent and self-injurious behaviors derived from psychiatric toxicology |
| | Apply personalized care procedures for pregnant women, children and the elderly |

05

Where Can I Do the Internship Program?

Through this program, physicians 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 up to date with international standards in Emergency Toxicology. All the locations chosen by TECH for this Internship Program have prestigious experts and operate the most innovative technologies in this professional field.

“

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 intoxications caused by insect stings or reptile bites”





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



Medicine

Hospital HM Modelo

| | |
|---------|-----------|
| Country | City |
| Spain | La Coruña |

Address: Rúa Virrey Osorio, 30, 15011, A Coruña

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

Related internship programs:

- Anaesthesiology and Resuscitation
- Palliative Care



Medicine

Hospital HM San Francisco

| | |
|---------|------|
| Country | City |
| Spain | León |

Address: C. Marqueses de San Isidro, 11, 24004, León

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

Related internship programs:

- Update in Anesthesiology and Resuscitation
- Nursing in the Traumatology Department



Medicine

Hospital HM Regla

| | |
|---------|------|
| Country | City |
| Spain | León |

Address: Calle Cardenal Landázuri, 2, 24003, León

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

Related internship programs:

- Update on Psychiatric Treatment in Minor Patients



Medicine

Hospital HM Nou Delfos

| | |
|---------|-----------|
| Country | City |
| Spain | Barcelona |

Address: Avinguda de Vallcarca, 151, 08023 Barcelona

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

Related internship programs:

- Aesthetic Medicine
- Clinical Nutrition in Medicine



Hospital HM Madrid

Country: Spain
City: Madrid

Address: Pl. del Conde del Valle de Súchil, 16, 28015, Madrid

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

Related internship programs:

- Palliative Care
- Anaesthesiology and Resuscitation



Hospital HM Montepríncipe

Country: Spain
City: Madrid

Address: Av. de Montepríncipe, 25, 28660, Boadilla del Monte, Madrid

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

Related internship programs:

- Palliative Care
- Aesthetic Medicine



Hospital HM Torrelodones

Country: Spain
City: Madrid

Address: Av. Castillo Olivares, s/n, 28250, Torrelodones, Madrid

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

Related internship programs:

- Anaesthesiology and Resuscitation
- Palliative Care



Hospital HM Sanchinarro

Country: Spain
City: Madrid

Address: Calle de Oña, 10, 28050, Madrid

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

Related internship programs:

- Anaesthesiology and Resuscitation
- Palliative Care



Medicine

Hospital HM Puerta del Sur

Country City
Spain Madrid

Address: Av. Carlos V, 70, 28938,
Móstoles, Madrid

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

Related internship programs:

- Palliative Care
- Clinical Ophthalmology



Medicine

Hospital HM Vallés

Country City
Spain Madrid

Address: Calle Santiago, 14, 28801, Alcalá
de Henares, Madrid

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

Related internship programs:

- Gynecologic Oncology
- Clinical Ophthalmology

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 internship program 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. TUTORING: during the Internship Program the student will be assigned two tutors who will accompany them throughout the process, solving 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 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 of practical training, distributed 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: in case of absence on the day of the beginning of the Internship Program, the student will lose the right to the same 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: students 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. PREVIOUS STUDIES: some centers may require a certificate of previous studies 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. NOT INCLUDED: The Internship Program will not include any element not described in these 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's Degree **in Emergency Toxicology** contains the most complete and up-to-date program in the professional and academic landscape.

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

The diploma issued by TECH will state the score obtained in the test.

Title: **Internship Program in Emergency Toxicology**

Duration: **3 weeks**

Attendance: **Monday to Friday, 8-hour consecutive shifts**

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



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