



**ACADEMIC EXAMS**  
AT THE FACULTY OF MEDICINE OF THE UNIVERSITY OF LISBON  
INSTITUTE OF ADVANCED TRAINING

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**Masters:**

Emerging Infectious Diseases (5th Edition)

**Name of Student:**

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**Subject of Thesis:**

Vigilance of Infections associated to Health Care and Importance of Consumption of Anti-microbials in Intensive Care.

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**Jury:**

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**ABSTRACT**

Being aware of the dimension of Health care-related infections (HCRI), particularly by drug-resistant organisms, is of great importance due to the negative impact in hospitalised patients and public health in general. Studies in this area are crucial, in order to contribute to its prevention, control and treatment. The main goals of this study were the study and characterization of HCRI and the use of antimicrobial treatment in Intensive Care (ICU). The antimicrobial resistance pattern and the economic impact of these infections were also studied.

During a period of six months, a prospective observational study was conducted in two ICU in Hospital Fernando Fonseca. The HCRI were defined as a positive isolate collected 48 hours after the entry of the patient in the ICU. All the patients that had antimicrobial prescription and more than 48 hours of stay in the ICU were included in the study. It was detected 93 HCRI, being the majority of the respiratory tract and bloodstream. *Candida albicans* (19,2%), methicilineresistant *Staphylococcus aureus* (19,2%) and *Pseudomonas aeruginosa* (14,1%) were the most frequently observed isolates. It was also observed that the high prevalence of *Candida* spp. and drug-resistant bacteria HCRI may be related to the high consumption of large spectrum antibiotics, like Meropenem, Piperacilline/tazobactam and Ceftriaxone, the three most prescribed ones.

However, although the resistance was high for some antibiotics, it was not possible to establish that relationship, possibly due to the short period of the study. It was observed a strong connection statically significant ( $p < 0,001$ ) between the occurrence of HCRI and the length of stay, duration of the antimicrobial treatment and the cost of antimicrobial treatment by patient. The high prevalence of drug-resistant organisms causing the HCRI in this study highlights the importance of their epidemiological vigilance and treatment, in a way that may contribute more and more to patient safety.

**Key-words:** Health-care related infections; Intensive Care Unit; Antibiotics; Drug-resistant organisms; Economic impact.