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Online continuing interprofessional education on hospital-acquired infections for Latin America



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ABSTRACT

Introduction: Latin America is a large and diverse region, comprising more than 600 million inhabitants and one million physicians in over 20 countries. Resistance to antibacterial drugs is particularly important in the region. This paper describes the design, implementation and results of an international bi-lingual (Spanish and Portuguese) online continuing interprofessional interactive educational program on hospital-acquired infections and antimicrobial resistance for Latin America, supported by the American Society for Microbiology.

Methods: Participation, satisfaction and knowledge gain (through pre and post tests) were used. Moreover, commitment to change statements were requested from participants at the end of the course and three months later.

Results: There were 1169 participants from 19 Latin American countries who registered: 57% were physicians and 43% were other health care professionals. Of those, 1126 participated in the course, 46% received a certificate of completion and 54% a certificate of participation. There was a significant increase in knowledge between before and after the course. Of 535 participants who took both tests, the grade increased from 59 to 81%. Commitments to change were aligned with course objectives.

Discussion: Implementation of this educational program showed the feasibility of a continent-wide interprofessional massive course on hospital acquired-infections in Latin America, in the two main languages spoken in the region. Next steps included a new

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edition of this course and a “New Challenges” course on hospital-acquired infections, which were successfully implemented in the second semester of 2015 by the same institutions.

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Introduction

Latin America is a large and diverse region, where the predominant languages are Spanish and Portuguese, comprising more than 600 million inhabitants and one million physicians in over 20 countries, from Mexico in the North to Argentina and Chile in the South.

Resistance to antibacterial drugs is particularly important in Latin America. In this regard, a serious public health problem has been identified in the region on account of the emergence of resistance mechanisms and dissemination of these clones – particularly extended spectrum beta-lactamases (ESBLs) of the CTX-M type, and carbapenemases (KPC).^{1–4}

Among non-fermenting Gram-negative bacilli infections, *Acinetobacter baumannii* has increased in most of South America and the Caribbean. As a result, in the last decade, resistance of *A. baumannii* to antibiotics has increased substantially probably due to the relative impermeability of the outer membrane and environmental exposure to a broad group of resistance genes.^{5–7}

Moreover, in the last few years *Clostridium difficile* emerged worldwide as the main causative agent of nosocomial diarrhea. The Centers for Disease Control and Prevention (CDC, US Government) report an annual incidence of 453,000 cases in 2011, with 30,000 deaths per year related to “*Clostridium difficile* infection” (CDI). In Latin America there are few published studies, mainly of outbreaks reported in Brazil, Argentina, and Chile, but the real impact of CDI in this region as an agent of endemic infection is unknown. Only CDI cases caused by hypervirulent strains (ribotype 027) have been reported in Costa Rica and Chile but most likely this is underdiagnosed.^{8–11}

Gram-positive cocci infections such as methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *Enterococcus* constitute a long-standing problem, but its real impact on hospital-acquired infections (HAI) has not been properly evaluated in our region.¹²

This complex situation is a challenge health care professionals in the region face everyday as to which is the best antimicrobial strategy – not only to cure their patients, but also to care for the ecosystem. Moreover, contact isolation policies for multi-resistant microorganisms, proper hospital hygiene, and compliance with hand hygiene procedures are highly variable and impact on patient safety.

A challenge of this online course was to address the problem described above, and its main objective was to provide comprehensive continuing interprofessional education about HAI caused by the most frequent microorganisms in Latin America. The target audience was the health personnel involved in this process: professional nurses certified in infection control, members of Committees of

Hospital-Acquired Infections, members of Committees for Bacterial Control, medical doctors specialized in infectious diseases, intensive care and internal medicine, microbiologists, bacteriologists, and other health professionals related to this topic in Latin America.

The use of information and communication technologies (ICT) is evolving constantly, with innovations and the potential for more interactive and engaging strategies to be incorporated into educational programming, still allowing for massive participation of physicians, some of them from more remote locations of the countries. Therefore, in 2014, EviMed was invited by the Society for Worldwide Medical Exchange, a non-profit organization based in Miami, to implement together with the American Society for Microbiology and the Department of Infectious Diseases, School of Medicine, Universidad de la República, Uruguay, the integration of ICT into their more traditional formats, based on its record of blended multifaceted programs in Latin America.^{13–16}

The Faculty coordination, development of multimedia study materials, and tutoring roles were in charge of professors from four universities: Universidad de la República, Uruguay; Universidade Federal de São Paulo – Brazil (UNIFESP); University Clinical Hospital, School of Medicine, University of São Paulo – Brazil (HCFM-USP); School of Medical Sciences, Federal University of Rio de Janeiro – Brazil.

A collaborative work was done together with the American Society for Microbiology (ASM), Centers for Disease Control and Prevention (CDC), Pan American Health Organization (PAHO/WHO) and the Pan American Association of Infectious Diseases (API), which provided information for the needs assessment, international and regional experts to develop teaching materials, speakers for the launching event, and dissemination across the region.

This paper describes the design, implementation and results of a multi-country bi-lingual (Spanish and Portuguese) continuing interprofessional education program on HAI and antimicrobial resistance for Latin America.

Methods

Program content and structure

The course was implemented in the months of July to September 2014. The topic was HAI and antimicrobial resistance. A needs assessment with experts from the region and the target audience was performed through telephone interviews, in order to prioritize the topics to be addressed. The program design was then developed in conjunction between the Uruguayan and Brazilian central Faculty and the ASM liaison expert from Brazil (co-author LT), for which a two-day live workshop was organized.

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