

# Translation, implementation and evaluation of a medical informatics distance learning course for Latin America

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# Abstract

- Growing need and interest worldwide for healthcare professionals trained in medical informatics. Distance learning technologies are increasingly used to deliver such education, but mainly limited to the English language.
- We describe the implementation of a medical informatics course delivered in Spanish for a Latin American audience.
- The course was based on the 10x10 program of the American Medical Informatics Association and Oregon Health & Science University and translated and adapted to the Latin American setting. The course consisted of ten one-week units. A total of 152 individuals enrolled in the course, 93% of whom completed it. Most of the students were healthcare professionals and the largest proportion were from Argentina. Student satisfaction with all aspects of the course was high.
- The initial experience obtained in training healthcare professionals in medical informatics in Latin America in their own language demonstrated that it can be used across the region, and this could represent a model for disseminating knowledge of medical informatics across other languages and cultures.



# Introduction

- Growing need to train individuals in medical Informatics (MI)
- International programs using distance learning to deliver MI education have been developed in the United States, New Zealand and Europe.
  - No experience in Latin America
  - Internet tools, may be a possible strategy to deliver MI education



# Introduction

- In 2005, the American Medical Informatics Association (AMIA) and the Department of Medical Informatics & Clinical Epidemiology of Oregon Health & Science University (OHSU) launched the 10x10 Program.
- Develop a training program in Spanish language
  - MI task force of the Hospital Italiano de Buenos Aires (HIBA) entered into an agreement with OHSU.
  - Translate and adapt the OHSU 10x10 course to the Latin American region.



# Materials and Methods

The course adhered to roughly the same outline as the English version from OHSU, covering the following main topic areas:

1. Overview of the discipline
2. Biomedical Informatics
3. Electronic Health Records
4. Decision Support and Health Care Quality
5. MI Standards: Privacy, Confidentiality and Security
6. Information Retrieval and Digital Libraries
7. Multimedia and Telemedicine
8. Organization and management issues in biomedical informatics
9. Biomedical Informatics Subspecialties
10. Information Systems in Public Health



# Materials and Methods

- Teaching modalities

- Lectures

- Reading material (pdf)
- Voice-over-Power Point presentations.

- Threaded discussion boards

- Recommended readings

- Shortliffe et al., *Biomedical Informatics: Computer Applications in Health Care and Biomedicine - 3rd. Edition*, Springer-Verlag, 2006

- Self-assessment



# Materials and methods

- Learning management system

→ Moodle

- free, open-source package designed to help educators create effective online learning communities.



# Results

- Launched in March 2006
- 152 registered students.
  - 93% completed the course.
  - 68% physicians.
  - 84% from Argentina.





# Results

- Students' evaluation of the course (Likert scale 1-5)

Question	Score
1. Did the course content meet the program's description?	4,5
2. The course gave me practical and useful information for my daily work	4,1
3. Was the course correctly balanced? Was it interesting?	3,9
4. Did the teacher have adequate knowledge regarding the topics?	4,7
5. Was the teacher organized when presenting the contents?	4,6
6. Did the teacher answer the questions promptly?	4,6
7. Was the length of the course correct?	3,8
8. Were the course materials effectively presented? Was the surfing process easy?	4,4
9. Did the course fulfill my expectations?	4,2
10. Would I recommend this course to my colleges?	4,3
11. Which is my score regarding the e-learning part of the course?	4,3
12. Which score would I give to the whole course?	4,2



# Results

- Students were also asked how they planned to use the knowledge obtained from the course.
  - 42% preliminary training for an electronic health record implementation
  - 17,5% how to use the electronic health record
  - 7% how to assume a new role such as Chief of Medical Informatics in their institution



# Discussion

- MI education can be provided in Latin America via distance learning.
- Training was received positively by students.
- Future efforts will focus on improving the course and offering to a wider audience, particularly as MI applications become more prevalent in the region.
- Model for translation and dissemination of MI education to audiences in other regions of the world who speak other languages.



# References

- Hersh W. Medical informatics - improving health care through information. Journal of the American Medical Association. 2002;288:1955-8.
- A view of medical informatics as an academic discipline. Computers and biomedical research, an international journal. 1993 Aug;26(4):319-26.
- AMIA 10x10. 2006 [cited 2006 01-07-2006]; Available from: <http://www.amia.org/10x10/>
- AMIA - Academic & Training Programs. [cited 01-07-2006]; Available from: <http://www.amia.org/informatics/acad&training/>
- AMIA - Academic & Training Programs: International. [cited 01-07-2006]; Available from: <http://www.amia.org/informatics/acad&training/international.asp>

