

CINELA Project: Controlling Hospital Infections in Latin American countries - preliminary results

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Introduction and Background

It is well recognised that most health care associated infections (HCAIs) result from actions by health care personnel during the direct attention of patients, which facilitates and results in the transmission of microorganisms either from patient to patient, or from the environment to the patient.¹ Infection prevention and control within health care facilities involves a number of evidence based strategies that have been shown to be effective in reducing infections.²⁻⁷

Appropriate knowledge should be the first step in controlling HCAIs. Even when present, knowledge by itself may not be sufficient to change behaviour, but without it, people don't even recognise the problems. The results of studies measuring the impact of education in decreasing HCAIs show that the impact is better when the education is targeted to the HCWs own duties, to problems they know, and as a part of global strategy in which education is complemented with other actions like leadership, feedback and surveillance.^{8,9}

Knowledge and attitudes regarding practices that cause or prevent infections have been shown to be poor in most published studies, and the level of knowledge in selected practices goes from 10 to 30%.¹⁰

Latin America (LA) encompasses more than thirty countries, all with variable levels of economical development, and with considerable differences in culture, per capita income, population and Infection control services.

A recent survey carried out at the Universidad de Valparaiso (Chile) found that all the countries in LA have some initiatives and activities to prevent HCAIs, but they exhibit significant differences in terms of Surveillance, Guidelines, Regulations, Human Resources, Scientific Societies and Training. Very few countries have a national approach to reducing or preventing HCAIs.¹¹

In terms of education, only Chile has a legal basis in which supervisors require formal training in Infection control prior to being able to apply for an IC position in public health facilities.¹² As a consequence, in an important proportion of the LA countries health care facilities, there is a lack of basic knowledge in IC among Healthcare Personnel (HCP). There are many HCPs with erroneous or obsolete concepts in important areas of IC like antimicrobials, surgical practices or standard precautions. There is also evidence that in many countries there are still wide spread practices that have shown to be either ineffective or even

dangerous, like shaving, microbiologic cultures of surfaces or environment without rationality or overuse of antimicrobials.¹³

Universidad de Valparaiso, a public university in Chile established in 1911, has developed extensive expertise in the creation of education programs in Infection control for supervisors and HCP in Chile and other LA countries. Since 2001, the University also provides a Master's degree in IC for LA students. To date, more than 120 students from 11 countries have graduated from this program.¹¹

In view of the current knowledge of IC among HCP (lack of basic IC knowledge, great variability of practices, persistence of ineffective or dangerous practices, lack of networking, etc.) the Universidad de Valparaiso developed a program to establish a standard education program in IC for HCP in LA countries.

Description of the project

Cinela is a three year project of HCAs prevention and control education for Latin American countries, that started in 2009. It was designed as an extension program of the University (i.e. external activities of the University) with the support of a Grant from 3M International and the endorsement of the International Federation of Infection Control (IFIC).

The course design, methodology and contents are under the responsibility and control of the University of Valparaiso, represented by the coordinators Profs. Patricio Nercelles and Pola Brenner. The objectives of the project are to contribute to the implementation of evidence based strategies in IC among HCP and standardize basic strategies.

The project is a "train the trainers program" in which the University selects leaders from participating countries, proposes content and educative methodology and agrees on the final program of the course.

The proposal and approval of the project was made in 2008. In 2009, the first nine leaders from 12 countries were selected and during 2010, the establishment was completed with 24 leaders from 17 countries. These leaders were trained in Chile and a participative decision of the contents was conducted.

Each leader signs an agreement in which they commit to replicate the basic course at least twice a year in their country. The agreement states their responsibilities and the way to conduct the course. They can't modify the methodology, contents, workshops, slides or handouts that are sent to the leaders from the University through an administrative coordinator. Each course has 5 quizzes (1 daily) and a certificate is awarded by the university to the students that achieve the requirements of 80% attendance and 70% success in daily quizzes.

Leaders/attendees were selected from names proposed by participating countries. Nominees' CVs were reviewed and individuals were selected on the basis of their knowledge in IC, current job in IC, local leadership, education capabilities and capacity to generate and conduct projects.

The course duration is 40 hours. Content sections include Epidemiology of HCAs, Surveillance, Microbiology, Prevention of the more frequent HCAI, Sterilization and antimicrobial use. Fifty percent of the hours are in theory with the remaining 50% of the hours are spent in practical workshops.

The course budget is shared between the University, 3M and the students. University staff are given time to coordinate the project and run the certification programme. 3M International pays a fixed fee to the leaders and supports part of the local logistics. The students are expected to pay a modest fee to participate in the course, which varies between each country. Total or partial scholarships for selected countries are also covered by 3M International.

Seventeen countries participate in the project: Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Panama, Peru, Puerto Rico, Uruguay and Venezuela.

Results

As of September 2010, 63 courses were delivered with 2335 participants (65% from hospitals and 35% from ambulatory care facilities). The average success rate among participants was 71.4% (Table I).

**Table I. Number of participating countries, leaders and characteristics of the courses.
Cinela Project 2009-2010**

Year	2009	2010
Countries	12	17
Leaders	9	24
Courses	21	42
Participants	735	1600
Course success rate	71.4 % (*)	
Attendants from Hospitals	65 %	

(*) Range 50 to 100%

Table II. Perception of advantages and results of Cinela course among participants (102 participants, 13.2 %)

Question	Answer	%
Main advantages of Cinela course	Updating of concepts	82.0 %
Differences with other programs	Methodology	52.0 %
	Quality	52.0 %
	No differences	4.3 %
Practices changed due to Cinela	Expiration dates of sterile items	} Mentioned
	Surveillance, from passive to active	
	Bundle incorporation	
	Audit	
	Hand Hygiene concept	
	Incorporation of Chlorhexidine in the management of CVCs	

During August 2010, a survey was sent to all participants that attended the courses during 2009, asking about their perception of the Project and how the course contributed to their activities. The Survey was answered by 102 participants (13.9% of the attendants). Eighty-two percent (82%) stated that the main advantage of this course was the receipt of updated concepts. They also mentioned the high quality and methodology of the Cinela course as compared to other similar programmes. Only 4% replied that no difference from other courses could be identified. A number mentioned changes in practices brought about following the course, such as Surveillance, bundle approach and audit (Table II).

In the same survey, participants mentioned the difficulties in the development of IC programs. The main problems highlighted were the lack of leadership, no central guidelines and no surveillance (Table III).

As a further step in the evaluation plan, a survey was sent to the leaders, which was answered by all (2009-2010, 100% response). Their perception was that the course had good material, was easy to use and they recommend continuity as part of the IC programs in the LA countries (Table IV).

Table III. Survey of perception of difficulties in IC Programs in their countries among participants of Cinela course year 2009

Difficulties	%
No National Program	34.8 %
No guidelines	43.5 %
No surveillance	30.4 %
No education	43.5 %
No supervision	47.8 %

Table IV. Opinion regarding Cinela's tools among the leaders of the project 2009-2010

Opinion	%
Material is good	87.5 %
Is easy to use	85.0 %
Recommend continuity	84.6 %

Table V. Local endorsement of Cinela Project in LA countries.

Country	Endorsement
Argentina	Asociación de Enfermería en Control de Infecciones
Bolivia	Ministry of Health and Sports
Dominican Republic	Sociedad Dominicana de Epidemiología
El Salvador	Ministry of Health
México	Hospital Dr. Manuel Cea González
Puerto Rico	Asociación de Epidemiología de Puerto Rico
Uruguay	Facultad de Enfermería Universitaria Ministry of Health
Venezuela	Sociedad Venezolana de Infectología Sociedad Venezolana de Pediatría y Puericultura

Local endorsement

In most of the countries, the project was presented to local authorities or scientific societies to gain local endorsement. Currently, the project has been endorsed by local decision makers in the 47% of the countries (Table V).

Discussion

HCAIs remain one of the main problems in health care. In spite of new technologies, scientific research and less invasive procedures, HCP meet each day with new challenges, such as MRSA and ESBL producing gram negative organisms that usually outstrip their capabilities.

Many publications and observations, especially in low resources countries, show that an important proportion of HCP in charge of direct care do not have formal education in infection control. For the HCP who do have some knowledge in infection control, their levels of expertise vary greatly. It was also clear that a number of common practices apparently implemented to prevent infections were not evidence based or obsolete, in practice using large resources ineffectively or even dangerously.

Education seems to be one of the key issues in infection prevention that has been shown to impact preventing infections. Standardization of basic concepts ensures that personnel in charge of direct care are at least aware of the minimal requirements for preventing the most frequent HCAs.

Conclusions

Cinela constitutes the first regional approach to standardise education in infection control in LA countries. A large network of more than 2000 trained professionals has been created. The Cinela project has provided a response to frequently mentioned problems in the implementation of infection control programs in low resources countries and has been well received.

It has also provided a good opportunity for collaboration between Industry and University allowing commercial companies to be involved not only in the distribution of products but in educational activities that will permit a better and more informed decision in the selection of products, equipment and devices for health care.

The next step is to correlate this project with an estimation of its impact in changing practices, to be done during 2012. We advocate that this initiative is replicated in other world regions.

Disclosure

Design, methodology and contents are total responsibility of University of Valparaiso represented by the coordinators Profs. Patricio Nercelles and Pola Brenner

The 3M grant is an independent contribution, and it does not affect the course contents.

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