

## Argentine Society of Cardiology Continuous Update Program (PROSAC)

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### SUMMARY

#### Background

The development of scientific knowledge and technology in the field of health sciences evolves so rapidly that the implementation of new ways of continuous education is essential to prevent human resource obsolescence, a circumstance that occurs more frequently than that of other resources of the area. The main activity of the Argentine Society of Cardiology is spreading the scientific knowledge by developing Congresses, publishing the *Revista Argentina de Cardiología*, organizing face-to-face courses, scientific meetings and the PROSAC, the Argentine Society of Cardiology Distance Learning Program.

#### Objective

To communicate the experience of the Cardiology Update Program, PROSAC, implemented by the Argentine Society of Cardiology since 2007.

#### Material and Methods

The PROSAC includes texts (printed material), conferences and controversies, case reports, image gallery (included in a CD provided with the printed material) and written tests at the end of each module. All the material is also available at the web site [www.sac.org.ar](http://www.sac.org.ar)

#### Results

The program started in August 2007 and 498 participants were matriculated; by December 2010 the number increased to 847 professionals, 68% men and 32% women; age ranged from 40 to 60 years. The course was published in 5 modules (10 fascicles). The test was taken and approved by 79% of those enrolled in the program.

#### Conclusions

This evaluation of the Program considered that the fulfillment of the activities and the level of retaining knowledge were very promising. The Program has been installed in a MOODLE platform since December 2010 in order to achieve more active participation and cooperative learning.

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#### Key words >

Continuous medical education - PROSAC - Distance learning - ICT

#### Abbreviations >

<b>MOODLE</b>	Modular Object-Oriented Dynamic Learning Environment	<b>SAC</b>	Sociedad Argentina de Cardiología
<b>PROSAC</b>	Programa de Actualización Continua de la Sociedad Argentina de Cardiología	<b>TIC</b>	Tecnologías de la Información y Comunicación

### BACKGROUND

The training of the staff involved in the activities concerning health, is a complex task. In fact, those in charge of health must know the most sophisticated technical knowledge that allows them to assist in a preventive or curative way. (1)

The development of scientific knowledge and technology in the field of health sciences is so dizzy that

the implementation of continuous education forms in order to prevent human resource obsolescence is essential.

Specialists are in a changeable environment and the existence of new technologies forces them to renew their academic training in order to know, understand, appreciate and implement those techno-scientific concepts for the benefit of their patients. (2)

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From the sixties the need and importance of a longlife education is emphasized. The Pan American Health Organization (PAHO) stated the Continuing Education for Health as a strategy of intervention, change and transformation of practices. (3)

The need of a continuous learning leads to the concept of Medical Education as a continuum (Table 1) in which the third stage of learning – the one following degree and specialization courses – must keep the proper formative concept of education, incorporate knowledge and promote the improvement of attitudes regarding the patient, their family, and other participants of the health team. The continuous medical professional development must be based on an educational proposal with defined objectives and contents based on physicians needs, care centers and population. (4)

We use the expression Continuous Education to design those educational activities done by professionals once they graduate and obtain the enabling register and after the formation as specialists through the system of medical residences and/or college postgraduates.

Continuous Education syllabuses are created by scientific societies and medical associations. The role of the Faculty of Medicine and the academic area is limited.

Continuous Medical Education includes all those learning experiences for physicians in order to improve their professional performance. Contents, methods and learning resources are selected in order to improve knowledge, abilities and attitudes required by physicians to improve the quality of care received by patients.

The main activity of the Argentine Society of Cardiology is the diffusion of scientific knowledge by the development of congresses, the publication of the Argentine Journal of Cardiology, the organization of courses and face-to-face scientific meetings and the PROSAC, the Argentine Society of Cardiology Continuous Update Program, which is a Distance Learning Program.

Distance Education makes possible that all professionals in the world can have access to it; makes conventional education systems more flexible and enables distant populations to integrate the programs. Argentina is a large country so this modality is appropriate for adults with active professional and familiar lives. Each person studies in their convenient time and place, with no obligation of attending classes or conferences in fixed schedules, organizing their time for reading and exercising according to their previous knowledge and particular interests.

In Distance Education modality, the relation

between “teachers and students” is mediated through specially designed educational materials. Contents and activities are offered in printed modules and computer media. The availability of Information technologies and Communication (ITC) promoted a strong development in Distance Education. What is typical in this modality is that educational materials travel- in their different formats- to students’ homes or labour addresses.

Distance Education started 150 years ago together with transportation and communication technologies typical of the industrial revolution. Nowadays, Distance Education is closely related to the telecommunications industry.

In 1840, Isaac Pitman introduced the teaching of typing using mail in the United Kingdom. Both in Western Europe and North America, distance education appeared and was developed in the industrial metropolis of the nineteenth century with the objective of giving the educational opportunity to those persons who could not attend normal schools. In the late nineteenth century, in the United States of North America and Japan a variant of distance education emerged and was used in pre-college and college studies. In 1891, in Chicago University a department responsible for the organization, implementation and development of studies through post was created. The development achieved by the postal services of North America and Europe allowed sending documents, study guides and printed material to the students; students received their credits once they solved the indicated tasks, but there was no possibility of feedback. This model was the first generation of distance education and is still the predominant model in many countries. At the end of World War II there was an explosion in the use of this modality as a strategy of facilitating the access to educational centers, mainly in those countries which needed skilled labour. In 1969, the Open University of the United Kingdom emerged. This University was a pioneer in what we know as Distance Higher Education. Teaching materials were made in printed text and audio. Moreover, videos, compact discs and transmissions through the British Broadcasting Corporation-BBC were added. (5) From 1980, Distance Education started to use the Web for the transmission of information, and interactive strategies by e-mail, chat, forums and, recently wikis and blogs (e-learning) were created.

More and more persons have the possibility to learn through the Internet. They connect with universities that have not only the system of distance education but also give the possibility to combine classroom education with blended learning (b-learning). (6) The first Argentine experiences in Continuous Medical

Degree Courses	Postgraduate residence	Professional life
6 years	4 years	40-45 years
18-23 years old	24-28 years old	29-68 years old

**Table 1.** Medical education: a continuum

Education with modality of Distance Education are in the early years of the nineties decade.

The intention of this presentation is to communicate the implementation of the Argentine Society of Cardiology Continuous Update Program (PROSAC), implemented in 2007.

### MATERIAL AND METHODS

The recipients of this course are physicians with cardiologic orientation, interested in knowing the speciality step forwards.

The educational material includes:

- Specially written texts by distinguished specialists, that are published as printed material: two modules published in 4 fascicles per year, with two main topics each one;
- Conferences y controversies, interactive clinical cases and imaging that are save d in a CD and are included in the fascicles.
- A written test of 80 questions of multiple choice, at the end of each module. The test is solved at home, with open book and it can be answered in paper or through the Web.

All these materials are also available at the web site [www.sac.org.ar](http://www.sac.org.ar), where you can consult and/or participate in forums.

Contents are provided by specialists in the topics and checked by the editorial team, which is integrated by the authors of this work.

### RESULTS

PROSAC started in August 2007 with 498 first members. In December 2010 there was a total of 847 professionals across the country participating in the Program (Figure 1) (Figure 2)

Sex distribution indicates that 68% are male and 32% female.

A total of 66% of the professionals are in 40-60 years age group.

Until December of the current year there were published:

- Five modules (10 fascicles) with the following topics:
  - Heart failure I and II
  - Diabetes and cardiovascular disease
  - Hypertension
  - Coronary heart disease
  - Valvular heart disease
  - Adult congenital heart disease
  - Cardiac arrhythmias
  - Images in cardiology
  - Cardiovascular prevention
  - Keys for a critical reading

A total of 80 professionals of 29 different care centers participated in the drafting of these topics (Table 2).

- 30 conferences and 4 controversies were saved;
- 23 interactive clinical cases were developed;
- 3 tests, each one with the possibility of compensation, were implemented.

A 79% of the students enrolled past the tests.

### DISCUSSION

One of the first topics of discussion was the medium in which the material would be available. Should PROSAC be printed, electronic or both? The decision was starting with a printed version and then to increase the electronic medium, due to the low level of computerization of the members and the difficulty in the access to broadband in some areas of the country.

The development of a program like this one needs a group of professionals committed to the idea that continuous medical education is a strategy that helps to a better patient care. The organizing institution and the coordinator-editor of the program should have ability to attract in order to make colleagues participate unselfishly. As it is observed in the tables, the SAC (Argentine Society of Cardiology) is carrying out an important cooperative work: specialists who like writing about a topic and editors who check the clarity of the text and the logical sequence of the contents are needed; it is necessary to look for

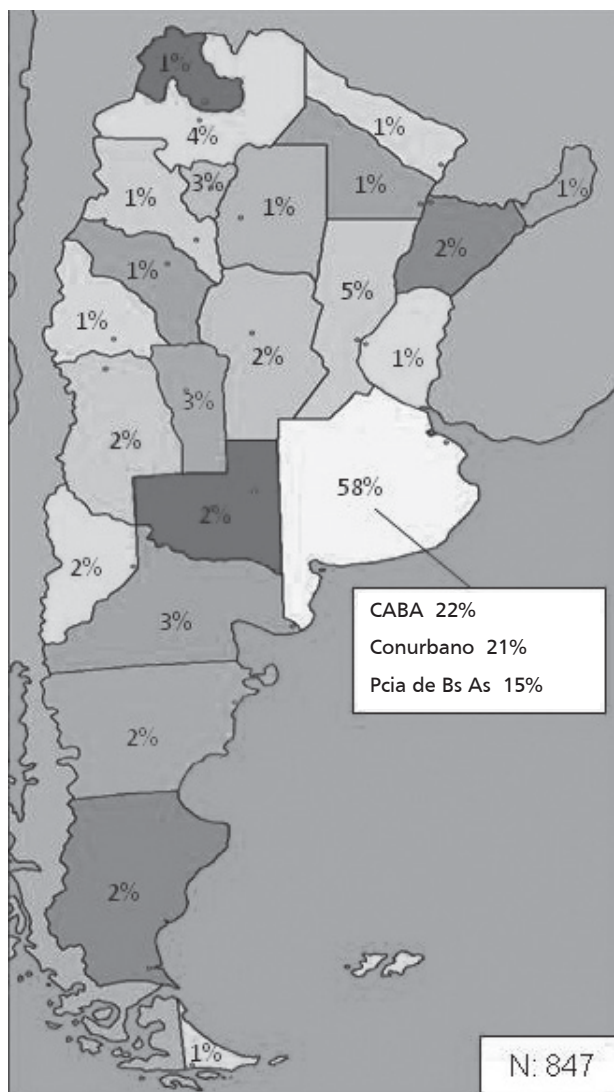


Fig. 1. PROSAC started in August 2007 with 498 members and in December 2010 there were 847 participants.

medical histories and select the cases in order to transform them in clinical exercises. Besides it is necessary to make the questions for the tests taking into account the published texts, the conferences and the recommended bibliography.

Up to the moment the experience is very successful and the partners of the SAC (Argentine Society of Cardiology) have been generous with the contribution of their knowledge. Probably, thinking in a medium-term period, it would be convenient considering any strategy that allow to finance the hours of work related to the production of modules and exams.

It is important to highlight the need of an administrative medium, as it is essential to solve frequent consultations and help the members with their doubts; it is the only "personal" contact that PROSAC students have. It is an important component of success of the program. One of the greatest difficulties has been the compliance with the terms

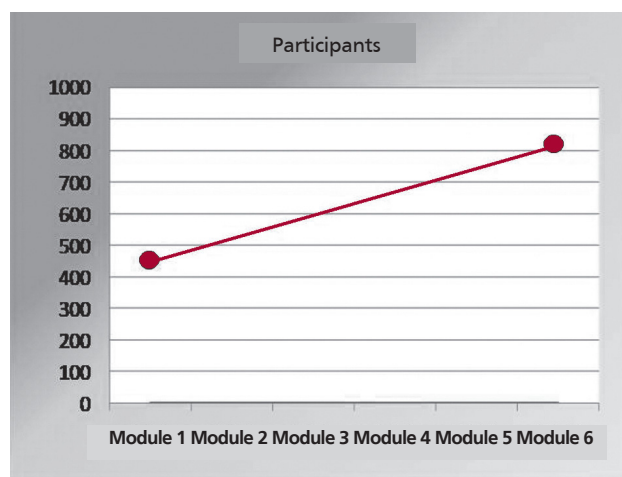


Fig. 2. Geographical distribution of the members.

CEMIC	Hospital Ramos Mejía
Centro Gallego de Buenos Aires	Hospital Pirovano
Clínica Bazterrica	Hospital Privado de Córdoba
Clínica Constituyentes (Morón)	Hospital Pte. Perón de Avellaneda
Corporación Médica Gral. San Martín SA	Hospital de Alta Complejidad Juan D. Perón (Formosa)
Fundación Falaloro	Hospital Tornú
Investigaciones Médicas SA	Hospital Universitario Austral
Hospital Argerich (GCBA)	IMECC
Hospital de Clínicas	Instituto de Cardiol. de Corrientes
Hospital El Cruce	Instituto Cardiovascular de Bs. As.
Hospital Interzonal Eva Perón	Instituto FLENI
Hospital Francés	Policlínica Bancaria
Hospital Garrahan	Sanatorio Güemes
Hospital Italiano	Sanatorio Modelo de Quilmes
Hospital Militar	

provided. It is impossible to deliver the material in the announced deadline if the delivery of the texts is not done in time. We have to remember that all the collaborations are voluntary. The organization of the topics did not allow replacing a "delayed" text with another "advanced" one.

At first, the PROSAC was thought as an educational alternative for professionals that already were cardiologists and that have attended the residence or concurrence some years before. The age of the professionals that have enrolled in the PROSAC (predominant age group 40 to 60 years) allows affirming that it could be answering to the detected needs.

In the group of members male sex is predominant; this shows that female insertion process in Cardiology is slower than in other specialities.

For example, in an update program in Paediatrics of similar characteristics, 68% of the members are female.

With the obtained results (97% of the members past the tests), we can affirm that the index of retention is excellent. It is frequent to find about 50% of desertion in programs of distance education.

The assessment of the results of a Continuous Medical Education program has many limitations because it is difficult to verify if the objective of a better patient care is achieved.

We can only make a PROSAC assessment in terms of compliance with the proposed activities, degree of acceptance of the proposal in the cardiologic community and the degree of retention achieved.

In a near future the evaluation would be increased with an opinion survey to all the members.

To finish, with the incorporation of ITC, technological mediums gave new possibilities. Programs of open technology emerged and, as they are by the Internet, allow teachers, tutors and students to communicate effectively. Such computation programs

Table 2. The list of the 29 centers to which the 80 professionals that participated in the drafting of the texts belong.



are called "Distance Education Platforms" or "Virtual Platforms". As a short-term project, PROSAC was installed in Internet, using MOODLE (Modular Object-Oriented Dynamic Learning Environment) platform, with the intention of exploiting the possibilities of active participation and cooperative learning of the platform (chat, consultation, forum, resource, survey, and workshop). Other institutions that use training programs – in medical education- using MOODLE platform refer that there are important limitations in the users and there are many demands of technical support. It would be necessary to make a gradual adaptation and offer, at least at first, a technical support to assist those members who need it.

## RESUMEN

### El Programa de Actualización Continua de la Sociedad Argentina de Cardiología (PROSAC)

#### Introducción

El desarrollo de los conocimientos científicos y de la tecnología en el campo de las ciencias de la salud es tan vertiginoso que hace indispensable la implementación de formas de educación permanente para prevenir la obsolescencia del recurso humano, que parece ser más rápida que la de otros recursos del sector. La Sociedad Argentina de Cardiología interviene en ello a través de su principal actividad, la divulgación del conocimiento científico, que se lleva a cabo con el desarrollo de Congresos, la publicación de la Revista Argentina de Cardiología, la realización de cursos y reuniones científicas presenciales y el PROSAC, que es un Programa de Actualización con modalidad de Educación a Distancia.

#### Objetivo

El propósito de esta presentación es comunicar la experiencia de la Sociedad Argentina de Cardiología en la implementación del Programa de Actualización en Cardiología, PROSAC, puesto en marcha en 2007.

#### Material y métodos

El PROSAC incluye textos (material impreso), conferencias y controversias, casos clínicos, galería de imágenes (CD que se adjunta al material impreso), exámenes escritos al finalizar cada módulo. A su vez, todo el material se encuentra disponible en [www.sac.org.ar](http://www.sac.org.ar)

#### Resultados

Comenzó en agosto de 2007 con 498 inscriptos y en diciembre de 2010 participaban del Programa 847 profesionales, el 68%

hombres y el 32% mujeres. El 66% se ubica en la franja etaria de 40 a 60 años. Se publicaron 5 módulos (10 fascículos). Los exámenes fueron rendidos y aprobados por el 79% de los inscriptos.

#### Conclusión

Esta evaluación del Programa tomó en consideración el cumplimiento de las actividades y el grado de retención, cuyo resultado fue muy promisorio. Con el objetivo de lograr una participación más activa y un aprendizaje cooperativo se procedió, a partir de diciembre de 2010, a la instalación del Programa en una plataforma MOODLE.

**Palabras clave** > Educación médica continua - PROSAC - Educación a distancia - TIC

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