

## Do the Different Pathways to Become Specialist in Cardiology Have Similar Results?

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### SUMMARY

A medical specialty may be defined as the body of knowledge corresponding to a specific medical field. This knowledge is provided by postgraduate training programs after completing the medical doctor degree.

The goal of the present study is to review the different options available in our country to become a specialist in cardiology and, thus, determine if these diverse pathways produce equally trained cardiologists.

Training should be understood as a long-term process that shapes professional thinking and social behavior. This process must be permanent and should have core regulations to ensure equal and homogenous training in the specialty.

There are many ways of becoming a specialist in cardiology; most of these pathways may be combined and all of them use different tools for selecting, training, supervising, evaluating and controlling trainees.

Thus, these differences in training and evaluating specialists might produce professionals with different levels of competencies.

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Key words > Specialization - Residency Program

### BACKGROUND

A medical specialty may be defined as the body of knowledge corresponding to a specific area of the human body (organ or system), diagnosis or treatment techniques, specific disorders or subpopulations defined by age. This knowledge is provided by postgraduate training programs after obtaining a medical degree.

Training should be understood as a long-term process that shapes professional thinking and social behavior. This process must be permanent and should have core regulations to ensure equal and homogenous training in the specialty.

The legislative framework concerning medical specialization in our country was laid for the first time on January 24, 1967, in the article 21 of the national law 17,132, which refers to "The practice of Medicine, Dentistry, and allied health care professions". This article was modified by the national law 23,873, passed and enacted in 1990. (1-3)

In this way, the article 1 of the law 23,873 replaces the text of the article 21 of the law 17.132 by the following: "health professionals accreditation function as specialists is to be approved by the Ministry of Health and Social Services for professionals meeting

the following requirements":

- Have a license given by Special Accreditation Boards designed for such purpose by the enforcement authority, under regulatory requirements, which should include a minimum of five (5) years after graduation and three (3) years of seniority in specialty practice; assessment of academical qualification, work experience, and written theory and practical examination of competence;
- Have a specialist degree or specialized training degree granted or confirmed by national university or private university accredited by the State;
- Be a professor by competitive selection in the subject and currently active;
- Be a certified professional from a scientific organization in the specialty recognized for such purpose by the enforcement authority, under regulatory requirements;
- Have a certificate of satisfactory completion of residency after a minimum of three (3) years of postgraduate training in a public or private institution recognized for such purpose by the enforcement authority, under regulatory requirements.

*The official accreditation will last five (5) years and may be recertified every five (5) years by demonstrating active practice in the specialty, a personal interview or examination of competence, under regulatory requirements.*

*The enforcement authority will draw up a list of recognized specialties, regularly updated with the participation of accredited universities and institutions.*

#### **ANALYSIS OF THE PRACTICE OF THE DIFFERENT ALTERNATIVES**

The five conditions cited in the law correspond with the following alternatives in professional training and acknowledgment that we can find in our current medical practice: I. Residency; II. Attending a hospital unit (concurrencia médica); III. University course; IV. Be a professor; and, V. Through medical colleges and scientific societies.

##### **I. Residency programs**

Residencies are full-time postgraduate training programs with scheduled and supervised activities with the goal of training young physicians in medical practice inside and outside the hospital environment. Residents get paid for their activities. (4) Selection of applicants is made on a competitive basis; this initial condition makes this system different from other training programs.

Residency programs have other distinctive features which lack other training programs. In residency programs, education strategies: a) are practice-based training, b) are based on the interaction with staff physicians; c) create responsibility and commitment; d) integrate theory with practice; e) promote interdisciplinary work; and f) establish a supervision and evaluation chain. (5)

##### **a) Practice-based training**

The residency program is focused on training the young physician in medical practice with the permanent stimulus of the clinical case; thus, the resident faces the broad spectrum of diseases in the specialty. Among all the possible pathways to become a specialist, the medical residency requires greater number of hours to interact with the patients, providing medical care to acute and complex cardiovascular cases. The level of practice-based training provided by residency programs is a hard act to follow.

##### **d) Interaction with staff physicians**

The resident-staff physician dyad provides an essential link to transmit information in a bidirectional fashion. The staff physician plays the role of an instructor, pointing up the theoretical concepts illustrated by daily medical practice. In addition, residents are curious and eager to learn, and this feature keeps the staff physicians active and stimulates them to be up-to-date.

##### **c) Create responsibility and commitment**

The residency program includes medical care of patients supervised by staff physicians. The responsibility of residents progressively increases according to the development of competencies which contribute to create commitment and responsibility with medical practice and with the patient.

##### **d) Integrate theory with practice**

The program has scheduled educational activities such as classes and clinical seminars which allow a permanent interrelation with medical practice.

##### **e) Promote interdisciplinary work**

The program allows residents to understand the magnitude and complexity of the health care system and to recognize the different scenarios and medical strategies available due to the direct contact with daily health care issues. The system contributes to train professionals through the development of competencies to interact with other medical specialties and allied health care professions, facilitating the interdisciplinary work and the models of integration in medical care.

##### **f) Establish a supervision and evaluation chain**

The residency program is based on a programmed and gradual medical practice with decision-making supervised by staff physicians. It also establishes the knowledge and competencies the resident should achieve which should be evaluated at each stage of the training program. The activities of the residency program are supervised by a coordinated and joint work of different areas: Teaching and Training Human Resources Directorate, Chiefs of Departments, Directors of Residency Programs, Staff Physicians, those responsible for rotations, Chiefs Residents and Instructors Residents.

However, the cardiology residency program on the whole is far from being an ideal system nationwide. The performance of the program is undergoing an evident impairment, characterized by the heterogeneity among the different residency programs. Each program has different requirements for applicants, goals and objectives and ways to achieve them. In particular, these differences are greater in the commitment of the institutions responsible for ensuring the necessary conditions for an adequate performance of the program. (6) These failures may be due to the lack of a centralized control authority compromised with the program.

##### **II. Attending a hospital unit (Concurrencia Médica)**

The Concurrencia Médica is a postgraduate medical program similar to the residency program developed in medical units from each specialty. This program must differentiate from other options as they are also effective training systems to organize practices and useful and significant activities for promoting

learning in the setting of medical practice.

This type of postgraduate training is similar to the residency program regarding the interaction with staff physicians, creation responsibility and commitment, integration of theory with practice, promotion of interdisciplinary work and establishing similar supervision chains. The requirements of the system of concurrencia seem to be considered in the regulatory decree 10/2003 which specifies the duties of medical practice as follows: “...*accreditation of seniority in specialty practice will require a minimum of TWENTY (20) hours per week and TWO HUNDRED (200) days per calendar year of accredited activity and a minimum prescriptions of low, medium and high complexity practices according to regulations, in public or private hospital units approved and recognized by the Enforcement Authority*”

The weakness of this system is mainly due to the fact that physicians in this program are not paid by their work with the consequent reduced work hours at the hospital. Therefore, they have fewer obligations and are less controlled. This limited hospital activity affects the responsibilities of the medical practice in the learning process and makes the supervision of in-training physicians difficult.

The implementation and the activities of this program reveals lack of homogeneity in the selection process, in the responsibility of medical practice and in the level of requirements and evaluation. The performance of this system improves when it works collaboratively with the residency program within the same hospital unit.

### III. University course

Universities are the only entities with power to grant the academic degree of specialist in cardiology. The courses should be given by public or private universities accredited by the National State. To

be registered, the degrees or certificates should be included in the nominee list of Medical Specialties recognized and approved by the Ministry of Health of the Nation.

The diversity of academic institutions in which the postgraduate course in cardiology is given and the lack of common standards and regulations produce a wide disparity in the admission criteria, contents and different evaluation methods among the institutions. As an example, the requirements to apply for admission into the cardiology course are available at the web site of each university (Table 1).

In this way, few university postgraduate courses grant the academic degree of specialist in cardiology only through a theoretical on-campus course to physicians who had participated in a concurrencia or a residency program in internal medicine with no experience in medical care of patients or in competencies in acute cardiovascular diseases.

### IV. Be a professor

A professor can announce himself/herself as specialist. According to the article 1 of the law 23,873: “A professor in the subject and currently active can announce himself/herself as a specialist”. The article does not establish whether the professor should be a specialist before applying as a faculty. It seems obvious that any medical professional applying as a faculty in the subject by competitive selection should have the degree as specialist. However, this issue is not clear and sets up a possible contradiction not contemplated in the law or in the universities.

### V. Through medical colleges and scientific societies

One of the targets of the scientific societies and medical colleges is to establish common standards and regulations for the development and the practice of medical care.

**Table.** Characteristics of the university specialization courses or degrees

Requirements and conditions	Universities				
	A	B	C	D	E
Previous clinical activity	Proven experience in internal medicine (residency or concurrencia)	n/a	Two year of internal medicine, cardiology or intensive care medicine residency or concurrencia	Having completed a residency program in internal medicine or cardiology	1-year experience in internal medicine and 1-year experience in cardiology
Medical practice during the postgraduate university course	Not proposed	Full time residency program	Not proposed	Medical practice of the specialty in a unit accredited by the university	Completing the last two years of a residency program in Cardiology
Course: theoretical classes	3 years	n/a	3 years	n/a	Biennial course
Final evaluation	Comprehensive examination	n/a	Final exercise	n/a	Written exam and patient case-based oral examination

Source: Universities web sites.

Therefore, they can play the role of a controlling and regulatory authority of the professional quality. At present, they grant the specialist certificate. In a way, scientific societies and medical colleges are responsible for the specialist's behavior.

These entities should be recognized by the Enforcement Authority (contemplated in the decree 10/2003) for the purpose of granting the Certificates of Specialist; the limits of the field of specialization are observed and regulated in the same decree.

The independence of these institutions is one of the main problems, as the regulatory decree 10/2003 only specifies the limits of the field of specialization and observes that the regulation about certification of medical specialties is not opposed to the norms of the "section a" of this decree insofar as requirements, work experience, accredited services, training in accredited services and seniority in medical practice and in the specialty.

Thus, medical colleges and scientific societies must fulfill minimal norms leading again to heterogeneity in training and evaluating specialists. Therefore, these regulatory entities may use very different criteria for the requirements about the level of training and previous education to define the guidelines and passing grades of the examinations of competences. These differences produce inconsistencies in the requirements to apply for the certification of the specialty; in addition, they also determine the recertification process.

It should be mentioned that scientific societies and medical colleges can only grant a "specialist certificate", while the "academic degree of specialist" is only granted by the universities.

Although there are different pathways to become a specialist, the system offers the possibility to combine them and, thus, become a specialist by different ways (Table 2).

## CONCLUSIONS

In 2003, the Ministry of Health created an Advisory Board for Medical Specialties made up with representatives of the areas of the Policy, Regulation and Health Relations Secretariat, dependent on the Ministry of Health, the Government of the Autonomous City of Buenos Aires, national or private universities with postgraduate programs, professionals' associations, scientific societies and medical unions to give advise in the development of rules of procedure for revalidation of medical specialists, lists of medical specialties with updated information and registration of specialists. (3)

This process marks progress regarding policies in the regulation of medical specialties. However, there are still many ways of becoming a specialist in cardiology; and although most of these pathways may be combined, all of them use different tools for selecting, training, supervising, evaluating and controlling trainees.

**Table 2.** Possible options and combination in training and/or certification of physicians specialists in cardiology

1.	Participating in a residency program
2.	Participating in a concurrencia
3.	Taking a university course
4.	To be granted by a medical college or scientific society
5.	To complete a concurrencia and be granted by a scientific entity
6.	To complete a residency program and be granted by a scientific entity
7.	To complete a residency program and take a university course
8.	To complete a concurrencia and take a university course
9.	To complete a concurrencia, take a university course and be granted by a scientific entity
10.	To complete a residency program, take a university course and be granted by a scientific entity
11.	Be a professor

There is no objective information comparing the quality in training and educating the specialist in cardiology among the diversity of possible pathways, we may infer that they all lead to very different results. Obviously, the level of training and education of the residency program -a training system based on full time supervised medical care of patients during four years, is better than the concurrencia -with reduced work load and less responsibility in medical practice -and markedly higher than a 2-year theoretical course.

In our opinion, the most adequate available option is the combination of a residency program with the academic training provided by a university course. To be certified as a Specialist in Cardiology by the University of Buenos Aires, physicians should attend the course given at the main location of Argentine Society of Cardiology . About 70 residents from 24 institutions from the city of Buenos Aires and outskirts attend the course each year. This course has been given for more than 20 years. Training in medical practice is achieved by the residency program during four years. The theoretical university course is taken during the last two years of the residency program. The course lasts for 360 hours and requires approval of eight midterm exams, a monograph, the presentation of a scientific paper in a congress, a final theoretical and practical exam taken at a Department of Cardiology plus a final written exam which is taken at the School of Medicine. This training model could be easily implemented nationwide, using a regional criterion according to the geographical distribution of the universities and residency programs.

Regulatory agencies should urgently promote the best learning opportunities available in the different levels of the health care system to ensure equity and homogeneity in training specialists. This process should actively engage the different training institutions and those with authority to grant the

specialty, such as universities, scientific societies and medical associations.

To achieve these objectives, it is a priority to advance in the consensus and the definition of homogeneous programs including goals and training strategies, establishing the evaluation methods and requiring the levels of knowledge and minimum training required to be a specialist in cardiology. Yet, it is currently unavoidable to deepen the debate on the need of having centralized regulatory and control agencies within national jurisdiction and with the aptitude to guarantee equality of opportunities, homogeneity and quality in training the specialist in cardiology.

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## RESUMEN

### **Especialista en cardiología: diferentes caminos, ¿iguales resultados?**

Una especialidad médica puede definirse como un conjunto de conocimientos correspondientes a un área específica. Estos conocimientos son adquiridos por medio de estudios de posgrado luego de obtener el título de médico.

El propósito de este trabajo es hacer una revisión de las diferentes opciones disponibles en nuestro país para llegar a ser médico especialista en cardiología y, así, tratar de determinar si estos diferentes caminos podrían conducir a formaciones similares y equiparables entre los profesionales. La formación debe entenderse como un proceso de largo

alcance a través del cual se modelan el pensamiento y el comportamiento socioprofesional. Este proceso debe ser permanente y debería ser regulado en forma centralizada de modo que permita asegurar la equidad y la homogeneidad en la formación del especialista.

Existen diferentes maneras para llegar a ser médico especialista en cardiología, muchas son combinables y todas emplean diversas herramientas de selección, formación, supervisión, evaluación y control.

En conclusión, esta heterogeneidad en la forma de instruir y peritar al especialista podría devenir en diferentes niveles de profesionales formados.

**Palabras clave** > Especialización – Residencia Médica

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