General surgery residency in Brasil – very far from real practice

Residência médica em cirurgia geral no Brasil - muito distante da realidade profissional

ELIZABETH GOMES DOS SANTOS, TCBC-RJ[1]

A B S T R A C T

The author presents the Residency in General Surgery in Brazil from its inception, outlining its changes up to the present day. She discusses her doubts and thoughts about the best model for General Surgery residency programs and the declining demand for General Surgery as a career and the causes for such decline.

Key words: Residency in General Surgery. Education. Teaching.

"Given one well-trained physician of the highest type he will do better work for a thousand people than 10 specialists"

William J. Mayo - 1920

INTRODUCTION

After six years coordinating a Medical Residency Program in General Surgery, I have found that undergraduate medical students at their various levels, and even residents, are almost completely unfamiliar with the subject. They know it is necessary to "do residency" and that the proportion applicants/position increases year by year. The opinion of most is that if they do not attend a preparatory course, the possibilities of conquering the so much desired position are minimal. However, they ignore the history of medical residency, as well as the laws and regulations that govern it.

The first great name of surgery in the modern medicine era is William Stewart Halsted. Considered to this day one of the greatest surgeons of the United States, Halsted was born in New York in 1852, and lived his life fully devoted to the practice and teaching of surgery until his death on September 7th, 1922. Halsted realized that the teaching of surgery after graduation, conducted through direct exposure to the medical practice (classical practice: apprentice–master), was flawed and inefficient. From that observation, he established new methods for more efficacious, specialized and supervised training, which he named "Residency" because doctors actually lived in the hospital. His was the pioneering idea, in 1889, for the implementation of the first professional training program in hospital service, at the Johns Hopkins Hospital, where he became Chief of Service in the following year[1].

The history of Medicine and Surgery in Brazil effectively begins with the arrival of the Royal Family in 1808. Up to that time, whoever wanted to become a doctor needed to go to Europe. Along with D. João VI's entourage came Dr. José Correia Picanço, from the state of Pernambuco, who was the major-surgeon of the Court, graduated by the School of Medicine of Montpellier. He assisted D. João VI in opening, in Salvador, Bahia state, on February 18th, 1808, the fist medical school in Brazil – the "Escola Anatômico-Cirúrgica e Médica da Bahia", which is now the "Faculdade de Medicina da Universidade Federal da Bahia". In November of that same year, soon after Dr. Picanço's arrival in Rio de Janeiro, the "Escola de Anatomia, Medicina e Cirurgia do Rio de Janeiro" was instituted, which later became the "Universidade do Brasil" and is known today as the "Escola de Medicina da Universidade Federal do Rio de Janeiro". That was how university teaching began in Brazil [2].

Around 1948, as it had happened in the United States in Halsted's time, there was a concern on the part of preeminent surgeons in Rio de Janeiro and São Paulo over the formalization of surgical training after graduation. In view of that, Professor Mariano de Andrade at the "Hospital dos Servidores do Estado" in Rio de Janeiro and Professor Alípio Correa Neto at the "Hospital de Clínicas" in São Paulo conceived the first medical residency programs in surgery in Brazil, yet still without the methodization and regulation that took place later.

On September 5th, 1977, the President of the Republic at the time, General Ernesto Geisel, by signing

From the General Surgery Service, HUCFF-UFRJ, RJ, Brazil. F.
1. Coordinator, Residency Program in General Surgery, HUCFF-UFRJ, RJ, Brazil.

decree No. 80281, sanctioned the creation of Medical Residency in Brazil, defined as a "modality of graduate teaching for medical doctors in the form of a specialization course characterized by in-service training at health institutions, whether university-affiliated or not, under the guidance of medical professionals of high ethical and professional qualification" [3].

Medical Residency (MR) abides by specific laws and regulations, and only training programs accredited by the Ministry of Education (MEC) are entitled to that designation. The program is directly accountable to the National Committee of Medical Residency (CNRM – Comissão Nacional de Residência Médica), which in turn is under the Higher Education Secretariat (SESu). The Secretariat is linked to the Department of University Affairs of the Ministry of Education[3].

After completion of the MR, the medical doctor is awarded a Certificate of Specialist in his/her field of specialization.

State Committees were created in 1987, composed of the general coordinators of the various residency programs of all hospitals, and each hospital facility came to have its own Medical Residency Committee (Comissão de Residência Médica – COREME), consisting of the coordinators of each program offered by the respective facility.

Residency programs have some aspects in common: start on the first day of February; a minimum of 2,280 work hours per year, divided into 60 hours weekly, including 24 hours on call and 24 hours off work; 28 consecutive days of vacation; 4 months of maternity leave (the resident must complete her work hours at a later time; she keeps her stipend). Residents are to be evaluated yearly through a written/oral test and every quarter by the "scale of attitudes" designed by the CNRM. In order to receive accreditation, a program must fulfill minimum requirements, such as to have bylaws, offer housing and meals, provide a library with subscriptions to national and international journals, offer pay in the form of a stipend. In surgery, one of the requirements is that there must be one resident for every five hospital beds in the in-patient unit, and either one full-time preceptor for every six residents or one part-time preceptor for every three[3].

Program accreditation also follows a protocol. First the unit requests it, and, if granted, accreditation initially holds for the length of the program, after which time an evaluation is conducted. If approved, the residency program is given full accreditation. Every five years, the program is re-evaluated by CNRM representatives[3].

Before taking on the current format, the Medical Residency in General Surgery (MRGS) went through a number of changes. In May 2002, the CNRM decided, after a plenary discussion, that there would be direct-access programs as well as programs with prerequisites. Direct-access programs are those pertaining to the major basic areas of medicine: General Surgery (GS), Internal Medicine, Pediatrics, Obstetrics/Gynecology and Preventive Medicine. Some surgical specialties have General Surgery as a prerequisite: Plastic Surgery, Thoracic Surgery, Vascular Surgery, Pediatric Surgery, Urology, Proctology and Surgical Oncology.

The GS program is two years long. After that time, the CNRM authorizes a complementary year for furthering knowledge in the fields of practice Videolaparoscopy and Trauma, both with one year's duration.

The fields of practice, as well as the specialties, were defined and published in Resolution No. 1666/2003 by the Joint Committee of Specialties, in an agreement between the CNRM, the Brazilian Medical Association (Associação Médica Brasileira) and the Federal Council of Medicine (Conselho Federal de Medicina)[3].

Admission to the programs is through a public exam and comprises two or three phases (Table 1) at the institution's discretion.

If an institution chooses to conduct an interview and/or curriculum review, that phase must be divulged in the media in order to clear any doubts that might arise concerning the good faith of the interview.

Access to the optional third year of residency in the fields of practice is also gained through a public exam, with the same phases, but the required syllabus only involves General Surgery.

The whole structure of the MRGS has been defined by the CNRM. Therefore, it has been established that 25% of the 2,280 yearly hours are to be spent at the Surgical Suite, 25% at the in-patient unit, 15% in Emergency/Urgency, 15% for outpatient clinics and 10% of that time must be reserved for theory. The remaining 10% of the time can be allocated for whatever the Program Coordinator finds more appropriate. The syllabus is defined by the CNRM as well, and is comprised of didactic lectures, seminar presentations and discussions of cases and published articles. The CNRM also established that the first-year resident (R1) must assist on 48 medium-complexity operations and perform 24 of them. Second-year residents (R2) must perform 48 major operations and assist on 24. The mandatory 30-day internships are in Thoracic, Vascular, Plastic, Head and Neck and Pediatric Surgery, as well as in Proctology, Urology, Surgical Technique and Emergency. The internships may be carried out in the first or second year of residency at the Program Coordinator's discretion. Rotations in GS, Gastrointestinal Surgery, Coloproctology and Emergency must be allocated equally between years one and two.

For the fields of practice, the syllabus is specific to the respective field[3].

Brazil has currently (up to the submission of the present paper) 176 medical schools in activity, and 61 awaiting accreditation by the MEC to start work. The schools are divided into federal, state, municipal and private, the latter being the most numerous (101)[4]. In 2008, a total of 17,294 vacancies were offered for the first year of medical school (Table 2).

It can be concluded from table 2 that if all vacancies for the first year of medical school are taken, 32.14% of graduates will not do medical residency. There is, however, a percentage of unfilled slots, both in medical schools and residency programs.

Table 1 - Phases of the admission exam for direct-access specialties.

Exan	Number of questions	Weight in evaluation
Objective (mandatory)	100 - basic areas	50%
Practice (optional)	with patient	40 to 50%
Curriculum review or interview		Maximum 10%

Table 2 - Proportion of vacancies: 1st year medical school/1st year residency (Source: MEC).

Regions	Vacancies 1st year Medical School	Vacancies 1st year Residency	Proportion student/resident
North	1.462	369	3,96
Northeast	3.456	1.522	2,27
Southeast	8.960	6.449	1,38
South	2.476	1.722	1,43
Center-West	940	777	1,20
Total	17.294	10.872	

With regard to GS, a total of 1,148 positions were offered for R1s in 2008. Table 3 shows that the Southeast holds the most vacancies for General Surgery residency. The same is true regarding vacancies for the fields of practice.

Over the years, we have been watching a decline in interest for General Surgery on the part of newly-graduates. This problem is not exclusively Brazilian. In the United States, Canada and Europe, the same phenomenon can be observed. Every year, fewer graduates are choosing General Surgery as a career, and it is no longer seen as a specialty[5,6].

The advent of new technologies such as video-surgery and robotics, which demand specialized and time-consuming training for the acquisition of the required skills, helped demonstrate that the training was lagging behind: the time to shape a surgeon had become insufficient[7].

By the definition of the Brazilian College of Surgeons (Colégio Brasileiro de Cirurgiões, CBC), "the General Surgeon is the medical doctor with the knowledge of the disease, the diagnosis and treatment of those conditions that can be managed surgically, particularly as far as urgency procedures are concerned. The surgeon's training should prepare him/her to perform basic interventions in all specialties"[8]. Based on such premise and concerned about the serious flaws in the established system of training surgeons, and also for wishing the General Surgeon the same treatment given to the other surgical specialties, the CBC presented a proposition to the CNRM for a change in the program. After much debate, on October 14, 2004, o MEC announced the decision to extend the duration of the Residency in General Surgery. Thus the General Surgery-Advanced Program (GS-AP) was created, a 2-year program having General Surgery as a prerequisite. The idea behind the inception of this program, which embraces a more in-depth syllabus, is the shaping of highly-qualified professionals. But surprisingly, GS-AP was not considered a new specialty[3,7].

Table 3 - Geographic region/Vacancies for R1s in General Surgery (Source: MEC).

Regions	Vacancies for General Surgery
North	55
Northeast	166
Center-West and Federal District	88
South	195
Southeast	647

Few hospitals have been accredited to offer the program, and only some from the Southeast have been granted accreditation (Table 4).

The consequence of this unbalanced offer of the two programs is the migration of newly-graduated MD's throughout the country to the Southeast region; most of the times, these doctors do not return to their home states after finishing residency. Even though there are no statistical data to prove it, a large number of those professionals can

Table 4 - Distribution of vacancies for the Advanced Program (Source: MEC).

States	No. of Accredited Hospitals	No. of Vacancies open/Hospital
São Paulo	5	17
Minas Gerais	3	20
Rio de Janeiro	1	4

be found in the Southeast, quite often in badly-paid jobs, which creates a shortage of trained professionals in other regions of the country.

Taking the HUCFF-UFRJ* as an example (Table 5), a decline is seen in the demand for residency in General Surgery when 2007 and 2008 are compared. On the other hand, regarding the Advanced Program (AP), there has been a slight increase in demand, which must be interpreted with caution, since the HUCFF-UFRJ is the only AP-accredited hospital in the state of Rio de Janeiro.

According to Maker[9], every surgeon's career starts with the Residency in General Surgery, or at least it should. Data published by the MEC reveal that not all positions are filled. As remarked earlier, this fact has occurred over the last years and is not exclusive to Brazil. Among the reasons found for the exodus is, first of all, the search for better quality of life. A General Surgeon, over his/her training period, and even after completing Residency, has a work load that makes it difficult to reconcile professional and personal life, which entails high levels of almost permanent stress, leading to burnout. This fact, added to the scant personal gain and the type of current practice mostly dependent on health insurance companies, makes GS a specialty of little or hardly any appeal nowadays[10]. The economic aspect (i.e. outrageous pay) has also been an important barrier to choosing the specialty. Turning GS into a prerequisite for other surgical specialties ultimately served to devalue the General Surgeon, since the individual who chooses to pursue a surgical specialty eventually collects two specialist certificates. General Surgery is the foundation for all surgical fields, and should be taught to all who opt for surgical specialties. However, it seems unfair that the surgeon who is devoted to General Surgery as a specialty receives the very same certificate of qualification as specialists in other surgical fields. The quality drop in the programs and the progressive decline of the public health system, which offers the professional less than minimal conditions to practice his/her specialty and compromises surgical training, are adjunct factors contributing to the lack of interest in the specialty of General Surgery. The want of competent, proficient, ethical professional models to be emulated is also a weighty factor. All these aspects have discouraged medical school graduates when it comes to choosing General Surgery as a career, since they generate doubts, disrespect and loss of professional credibility[11]. According to Rasslan[12], 45% of the residents who finish the General Surgery program (two years) have no access to a complementation of their training, be it an optional third year in the field or the Advanced Program, often as a result of total lack of interest on the part of the applicant – a worrying fact, in that it leads to the entry of young, still unprepared professionals in the job market, who hold, nevertheless, the certificate of specialist awarded by the MEC.

In view of these facts, some questions arise:

1. Should the curriculum (rotations in specialties) of the General Surgery

Residency, implemented by the CNRM, be changed?

This issue has been discussed in Brazil, and the same concern exists in other countries as well. The debate refers to which specialties should be included in the training. Furthermore, is 30 days long enough time for the medical school graduate to acquire a minimum of skills in the Surgical Specialties for his future practice?

2. Are 14 months of training in General Surgery (24 months minus 2 months of vacation minus 8 months of rotations) sufficient for adequate capacity-building?

How to certify the General Surgeon? In the opinion of Férnadez-Cruz[13] the core curriculum for the education of the General Surgeon should be comprehensive and in-depth. He is not so sure himself whether it is possible for a resident to acquire the necessary skills to qualify as a General Surgeon, even in a 5-year residency program as is the case in the United States and Europe. With regard to Brazil, when one realizes that a young surgeon will likely be the only one on call at some in-country health unit or in places farther away from the big cities, it becomes easy to see that the current training time is insufficient and does not allow for the development of skills that are necessary for this medical doctor to take such a responsibility.

3. Should residents in surgical specialties have the same kind of training as those who will choose General Surgery as a specialty?

Much has been discussed on the subject. There seems to be an agreement on the part of specialists in surgical areas and general surgeons in that everyone who practices surgery in any specialty needs and must be trained on the fundamentals of surgery. However, they also agree that such training must be different from that which is given the General Surgeon. There is a great deal to be discussed before the ideal training formula is found.

And the most important of all:

4. Should the Certificate of Specialist awarded by the MEC be the same for those who complete 2, 3 and 4 years of residency?

In an agreement signed between the Federal Council of Medicine (Conselho Federal de Medicina), the Brazilian Medical Association (Associação Brasileira de Medicina) and the National Committee of Medical

Table 5 - Proportion applicants/vacancy, HUCFF-UFRJ 2007-2008.

General Surgery (G.S.)	G.S.-Advanced Program
Proportion applicants/vacancy in 2007= 29.67 / 1	Proportion applicants/vacancy in 2008= 7/1
Proportion applicants/vacancy in 2008= 26.83/1	Proportion applicants/vacancy in 2008= 4 /1

** HUCFF-UFRJ – the only accredited hospital in Rio de Janeiro state.*

Residency (Comissão Nacional de Residência Médica), the Joint Committee of Specialties was created, with powers to establish which medical areas of interest will be recognized as specialties and which among them will simply be regarded as furthering of knowledge, thus termed Fields of Practice.

By creating the General Surgery-Advanced Program (GS-AP), the MEC acknowledges that two years' training in General Surgery do not suffice to qualify a Surgeon, although the Ministry awards him/her, at the finish of the program, a Certificate of Specialist. By creating the GS-AP without recognizing it as a Specialty, the CNRM, instead of stimulating the training of surgeons and valuing the General Surgeon, has made the program into something unnecessary and worthless. If the Certificate is the same for the completion of both programs – Specialist in General Surgery –, what are the benefits of doing both?

And doubts:

1- In times of subspecialization, is there still a place for the General Surgeon?

2- Is General Surgery still a specialty?

3- Is the General Surgeon the one who provides primary care to the patient and next calls the specialist? Or the one who refers the patient to a better-equipped unit where specialists are present?

4- Is the fate of the General Surgeon to be left with Emergency and Trauma only?

5- The 20th century was the Century of Surgeons. Will the 21st century be known for the decline and demise of these specialists?

Many believe – General Surgeons among them – that the practice of this modality of Medicine is no longer admissible, or if it does exist, should be reserved for the population living away from the big cities, in places where the lack of nosocomial infrastructure coupled with the limited knowledge of the surgeon on call would provide the patient with "the best possible care in such conditions". They also believe General Surgeons as we have been to this day will no longer exist; rather, the future generations will gradually be working fragmented into several subspecialties. There are still those who believe that in the future there will be the "Hernia Surgeon" , the "Small Bowel Surgeon", the "Abdominal Wall Surgeon" and so forth. As surgery becomes increasingly compartmentalized, the surgeon's broad and general knowledge, which makes him/her effectively able to care for and treat patients presenting with diseases related to a variety of surgical areas, especially urgent care patients, will no more be acquired and furthered during Medical Residency. Thus, these surgeons will be unable to make decisions regarding the priorities of patient care[13].

The future of General Surgery as a specialty, and of the General Surgeon for that matter, is seriously at risk. Professionals involved with training future generations of surgeons unanimously declare that there is a great need for change in the format of the residency program, although there is no consensus as to what kind of change, exactly. The decisions to be made toward changing the Residency in General Surgery for the better will determine the future of this specialty. The models of learning of the pre-Halsted era, when the apprentice would simply "watch" the master and learn passively throughout endless hours of arduous work, are past and cannot be adopted any longer. The residency program has to be solid in order to enable residents for their tasks. A broad and in-depth preparation as required by General Surgery demands time, and demands that the resident perform a given number of procedures. Every patient, from the big cities and even the most remote regions of the country, deserves and is entitled to be treated by a broadly trained surgeon[14].

The ultimate goal of the Medical Residency in General Surgery is to provide the resident with training in a hospital with adequate conditions such that the future Surgeon can offer society the maximum standard of excellence: a well-trained professional, capable of applying, both in big cities and small towns, in a humane way, the skills acquired in the most advanced technologies[7].

Being a surgeon requires leadership skills and the ability to make snap decisions, in addition to strong emotional control, a great deal of self-confidence, tenacity and patience, and above all, total dedication to the patient. In order for surgeons to practice General Surgery in the best possible way, it is necessary to rescue some values such as adequate pay, social respect and safety in the workplace, in conjunction with a work load fitting their need for continuing development and their personal life.

Surgery is a dynamic science in constant evolution. The General Surgeon is not merely a technologist, not just the medical doctor who performs operations, not the one who refers the care of a patient to a specialist. Even if General Surgery is the basis for the practice of the various surgical specialties, it must be seen as a discipline in its own right during graduation, and as a Specialty after[14]. According to Ritchie[15], with whom we agree: "The broadly educated General Surgeon possesses great virtue..... when trained in this way, he or she can provide total patient care in much surgical disease...". As professionals who are responsible for, and participants in the education of future surgeons, it is our duty to encourage them to develop and nurture the exercise of science and the art of surgery with competence, quality and dignity.

R E S U M O

A autora apresenta a organização atual da Residência Médica em Cirurgia Geral no Brasil desde sua implantação, suas várias modificações até chegar ao modelo atual. Discute suas dúvidas e idéias sobre questões tais como o melhor modelo para a Residência em Cirurgia Geral, a diminuição da procura da Cirurgia Geral como especialidade e suas causas.

Descritores: *Residência Médica em Cirurgia Geral. Educação. Ensino.*

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Correspondence address:
Dra. Elizabeth G. Santos
E-mail: eligsant54@gmail.comm