

The Certification in General Surgery 42 years after the foundation of the Mexican Board of General Surgery

La Certificación en Cirugía General a 42 años de la fundación del Consejo Mexicano de Cirugía General

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ABSTRACT

Since the colonial period, all physicians wanting to exercise their profession needed to be certified by law. However, the first medical boards in our country were not founded until the XX century to certify diverse medical specialties by examination. In the beginning, these boards had a primary responsibility to legitimate the medical profession. Thence, they have become non-governmental organizations for improving and assuring optimal medical professionalism. Since the foundation of the Mexican Board of General Surgery (Consejo Mexicano de Cirugía General, CMCG) in 1977, the degree of competency of Mexican surgeons is acknowledged using a composed, standard, and staged (curricular, written, and oral) assessment. The certification process has broadly evolved from its beginning until now. This paper presents a historical overview of the MBS, its organizational structure, changes in the certification process throughout the years as well as a general perspective of the Mexican surgeons who have become certified until now.

RESUMEN

Desde la época colonial en nuestro país se ha certificado a los médicos que desean ejercer la profesión. Pero no fue sino hasta inicios del siglo XX cuando se formaron en México los primeros consejos para certificar a las diversas especializaciones médicas. En un principio el objetivo de estos consejos era el de legalizar la profesión para posteriormente asegurar una atención profesional de la más alta calidad. Hoy en día, la búsqueda del nivel óptimo de ésta mediante una evaluación compuesta de todos los cirujanos no sólo estandariza un ejercicio profesional de alta calidad a nivel nacional, sino que beneficia a los pacientes de forma directa. Desde 1977 el Consejo Mexicano de Cirugía General (CMCG) se encarga de la certificación de todos los cirujanos generales en nuestro país mediante una evaluación de tres fases (curricular, escrita y oral). Este proceso ha ido evolucionando desde su instauración hasta el día de hoy. El presente artículo presenta una reseña histórica del CMCG, de su estructura organizacional, los cambios en el proceso de certificación, así como un panorama general de los cirujanos que han sido certificados hasta la fecha por este organismo.

HISTORICAL BACKGROUND

Since the 18th century BC, the Babylonians have tried to establish rules that would ensure good quality in the provision of professional services, including physicians,

which are embodied in the code of Hammurabi. During the colonial period in our country, between 1527 and 1831, the Protomedicato fulfilled this mission by examining and certifying physicians who wanted to practice medicine.¹

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However, it was not until the beginning of the 20th century that many countries sought professional standardization of different medical specialties, including surgeons, with the subsequent formation of medical specialty boards. There is published work that has shown that the certification of a specialist is not only correlated with professional excellence, but with better results in clinical practice.² The concept of a "Specialty Board" was first introduced in the USA in 1908 by Dr. Derrick T. Vail³ as an effort to increase the quality of postgraduate medical education as well as of professional practice. However, it was not until 1933 that the American Board of Medical Specialties was established.⁴ Later, in 1936, the American Board of Surgery was founded with the primary objective of ensuring quality surgical practice for all board-certified surgeons and patients.⁵ Today, there are about 36 general specialties and 80 subspecialties in countries such as the United States, with more than 87% of specialists certified.^{6,7}

In Mexico, the National Regulatory Committee of Boards for Medical Specialties (*Comité Normativo Nacional de Consejos de Especialidades Médicas*, CONACEM) has 47 registered Boards that evaluate and endorse the professional practice of more than 100 specialties, subspecialties, and high medical specialties.⁸ This year the Mexican Board of General Surgery (*Consejo Mexicano de Cirugía General*, CMCG) celebrated its 42nd anniversary since its foundation,⁹ which is why we decided to recapitulate some important historical aspects such as the progressive participation of other states in the Republic and the growing role of women surgeons. Currently, thanks to the addition of Article 272 Bis of Chapter IX BIS in the General Health Law, certification for all general surgeons by the CMCG is mandatory.¹⁰ The following is a chronology of the most important historical events of the CMCG:

- In Mexico, the process began in **1963** with the founding of the Mexican Council of Anatomopathologists and by **1974**, 15 councils of other medical specialties had

been formed, which requested support and guidance from the National Academy of Medicine.

- On **April 24, 1975**, the *Consejo de Salubridad General* established the standards for recognition of medical specialty councils in Mexico.
- In **1976**, with the appearance of the specialty councils, at the request of Dr. Manuel Quijano Narezo, head of the Division of Higher Studies of the Faculty of Medicine at UNAM, a committee made up of 15 postgraduate professors of General Surgery was formed, which carried out consultations and surveys among societies that grouped surgeons, drafting the provisional statutes of the CMCG.⁹
- The CMCG was founded on **November 19, 1977**, with 30 counselors: 15 from the Federal District (now Mexico City) and 15 from the interior of the Country.
- Then, on **November 11, 1978**, certificates were issued for the first time to 1,769 surgeons. Of this total, 1,725 were men (97.5%) and 44 women (2.5%). Initially, the CMCG was only of a moral, ethical, and academic nature. Currently, it also has a legal character.^{9,11}
- On **December 7 and 8, 1979**, the first certification exam was given at the General Hospital of Mexico to doctors already with a formal residency in general surgery. On that date, 53 surgeons (98%) and only one surgeon (2%) were evaluated.¹¹
- In **1980**, only 100 surgeons took the second certification exam. This process was also recognized by the Secretariat of Health.
- In **1981**, the provincial certification exam was taken for the first time at the San Luis Potosi Medical School. This year, the Mexican Academy of Surgery and the American College of Surgeons recognized it. Since then it is a requirement to have the certification to be eligible to enter these societies.
- In **1982** the fourth certification exam was held and the second one, in the province, this time at the School of Medicine in the city of Leon, Guanajuato.

- In **1983**, for the first time, simulators were used for the oral phase. About 75 synods participated in this evaluation.
- In **1984** a session of clinical-pathological integration in the examination was put into practice for the first time. A guide to the individual results is provided as a reference for further study.
- In **1986**, the examination was applied for the first time simultaneously in Mexico City and Monterrey, NL.
- In **1987** the written phase was divided from the oral phase and applied simultaneously in Mexico City, Guadalajara, Monterrey and Veracruz.
- In **1988** the exam is applied for the first time in the month of February so that the new graduates of the residences in surgery can present it.
- In **1992** the bases and definitive functioning of the CMCG are consolidated in the government statutes.
- In **1995**, the use of optical sheets and statistical analysis of the results of the CMCG exam was introduced. That same

year, the Councils of Medical Specialties were convened to jointly form the CONACEM.^{12,13} From then on, each council receives the suitability for certification of the different medical specialties existing throughout the country.

- In **1996** the first recertification examination and contact with the American Board of Surgery began.
- In **1998** the CMCG website was created. Besides, the procedures for the registration of certification certificates with the Directorate-General for the Professions were carried out.
- In **2000**, the directory of certified and re-certified surgeons began to be published on the CMCG website so that any patient, person, or hospital could verify it.
- Until **2006**, the Mexican Legislative Power modified article 81 of the General Health Law and gave the CONACEM the indispensable legal status in the certification of medical specialists throughout the Mexican Republic.¹⁰ Also in this year and during the period of Dr. Patricio Rogelio Sánchez Fernández, the support book for the study is published.
- In **2008**, the online certification exam was inaugurated in 10 locations throughout Mexico under the presidency of Dr. Luis Humberto Ortega León. The CMCG headquarters moves to the WTC in Mexico City, where it is currently located.
- On **September 1, 2011**, under the presidency of Dr. Adriana Hernández López, the President of the Mexican Republic, Mr. Felipe de Jesús Calderón, signed the publication in the Official Gazette of the Federation of the decree that reforms and adds various provisions to the General Health Law, reinforcing the importance of certification to be able to practice as a specialist in general surgery in our country.¹⁰ Some of these important changes to the General Health Law include: 1) the issuance of specialty diplomas is the responsibility of higher education and health institutions (art. 81); 2) the specialist surgeon must have a specialist certificate in addition to the current certification by the CMCG for the practice of the profession



Figure 1: Board of Directors 2016-2018 from left to right: Dr. Antonio Moreno (Administrative Manager), Dr. Jordán Zamora (Vice President and President 2018-2020), Dr. Héctor Noyola (President 2016-2018), Dr. Ma. Graciela Zermeño (Secretary 2016-2018), Dr. Enrique Jiménez (Treasurer and Secretary 2018-2020).



Figure 2: Oral phase of the competency test. The student is evaluated by collegiate peers on non-cognitive aspects such as judgment, professionalism, ethical attitude towards patients and collaboration with other specialists, among other aspects.

(chapter IX bis art. 272 bis); 3) those who practice professional activities must display the current specialty certificate (art. 83); 4) CONACEM has official recognition, to supervise the training, skills, and abilities for certification and re-certification, but the councils are the only ones in charge of certifying 10 and 5) the councils of medical specialties that are recognized by CONACEM are empowered to issue certificates of their respective specialty. In this year, the American Trust Register, S.C. of the CMCG is also certifying the quality of the CMCG. Also, the first certification in Bariatric Surgery is carried out with the collaboration and support of the Mexican College of Surgery of Obesity and Metabolic Diseases. The first 67 certificates in Bariatric Surgery are delivered.

- In **2016** the certification exam for Transplant Surgery is applied for the first time under the presidency of Dr. Hector Faustino Noyola Villalobos.

GENERAL STRUCTURE OF THE CMCG AND THE CERTIFICATION PROCESS

The CMCG is constituted by a board of directors, advisors representing the states

in the country, an administrative manager, academic advisors, computer systems engineers, administrative staff, as well as administrative, legal, and other advisors important to the CMCG. The board of directors is formed by the president in turn, vice-president, treasurer, general secretary, an administrative manager, and the advisors (15 from the metropolitan area and one or two from each state). *Figure 1* shows the CMCG board of directors for the period 2016-2018. The term of the board is two years and the president-elect is appointed by a vote in the ordinary assembly, the rest of the board is appointed by the new president.¹⁴ So far there have been 20 presidents, all general surgeons of recognized prestige, both in the academic and scientific and surgical areas.

The format of the CMCG examination has changed due to the development of evaluation methods and obviously of technology, going from handwritten examination to multi-perforated sheets, then on an online platform and currently being applied in several locations in the Republic simultaneously, in addition to the fact that the subject immediately knows the result of his or her successes. To be certified in general surgery, the subject must be considered competent in the three phases: 1) curriculum, 2) written test to evaluate the different cognitive levels and 3) oral test of non-cognitive and professional skills (*Figure 2*). An insufficient or inadequate grade in any of these phases will automatically invalidate the certification. Besides, the final decision to certify or not a surgeon is not taken personally or unilaterally, but based on the consensus consideration of the entire board of directors of the results obtained by the subject in the different standardized and validated instruments (written and oral exams), through adequate statistical markers that allow the consideration of multiple aspects.

Technological advances have also made it possible for surgeons to register online from anywhere in the Country,¹¹ to scan and upload their documents to the electronic platform, choose their location and, if approved, have the option of being certified at home.

GENERAL OVERVIEW OF CERTIFIED SURGEONS

The precise number of general surgeons in Mexico is unknown; however, the proportion of certified surgeons is very low, since only the most important universities such as UNAM, the University of Guadalajara, the Autonomous University of Nuevo León and the *Benemérita Universidad Autónoma de Puebla* endorse at least 300 surgeons each year. Also, in the last decade, 35 more universities have been authorized to endorse these residencies, with 160 hospitals between sites and subsites, in the last two years the number of graduates would be around 450 per year. Up to 2019, the AMCG reports having 3,405 associated surgeons registered, although 2,703 associated and non-associated surgeons attended the last national surgery congress (Guadalajara, 2018).

On the other hand, the CMCG has 10,232 surgeons registered up to 2019 who have ever been certified, of which 1,164 are women (11.4%), 9,007 men (88%) and 61 (0.6%) are of undocumented gender. Of this total, 4,357 surgeons are currently certified, of which 725 are women (16.6%), 3,631 men (83.3%), and 1 (0.02%) are of unspecified gender. The proportion of women on average and throughout the history of the CMCG is 10.5%, although it has increased on several occasions, but always less than 32% each year, as shown in *Figure 3*.

Figure 4 illustrates the representation of surgeons certified by the CMCG according to the states of our country. As can be seen, the largest number of certified surgeons is concentrated in Mexico City, the State of Mexico, Nuevo Leon and Jalisco; probably because these are the states of the Republic where the universities have a considerable student population, which offer more

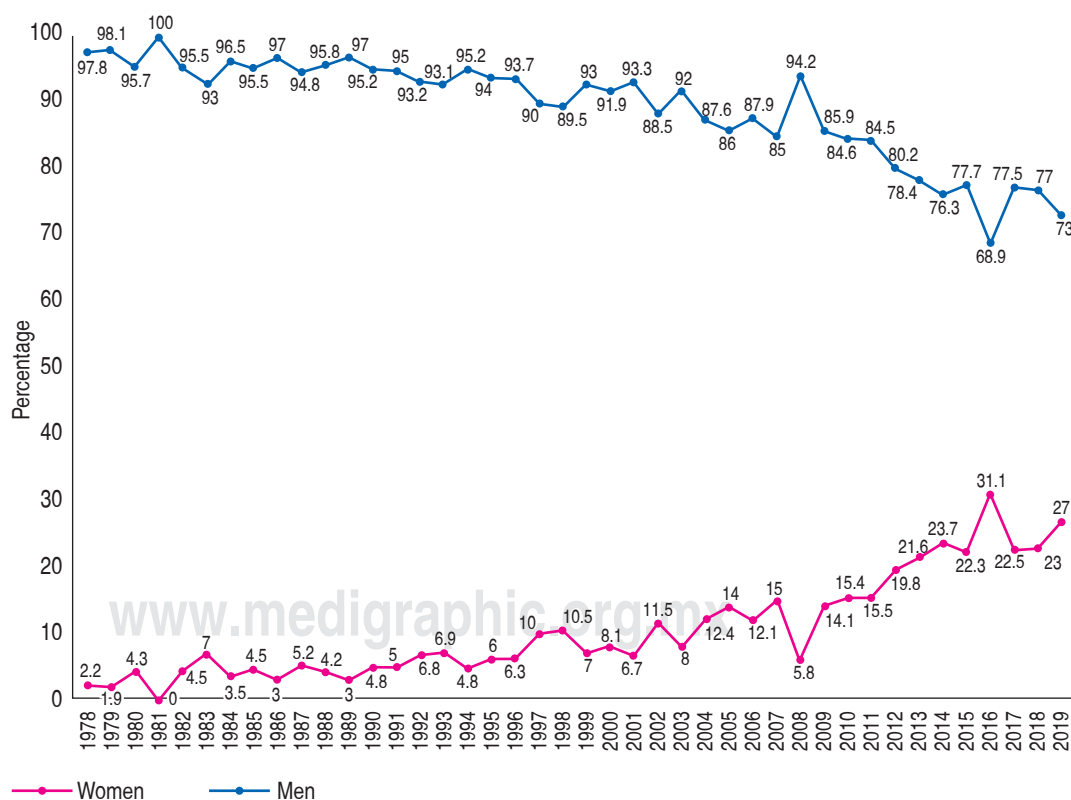


Figure 3: Percentage of surgeons certified by gender and year (data provided by Jorge A. Kobeh, CMCG).

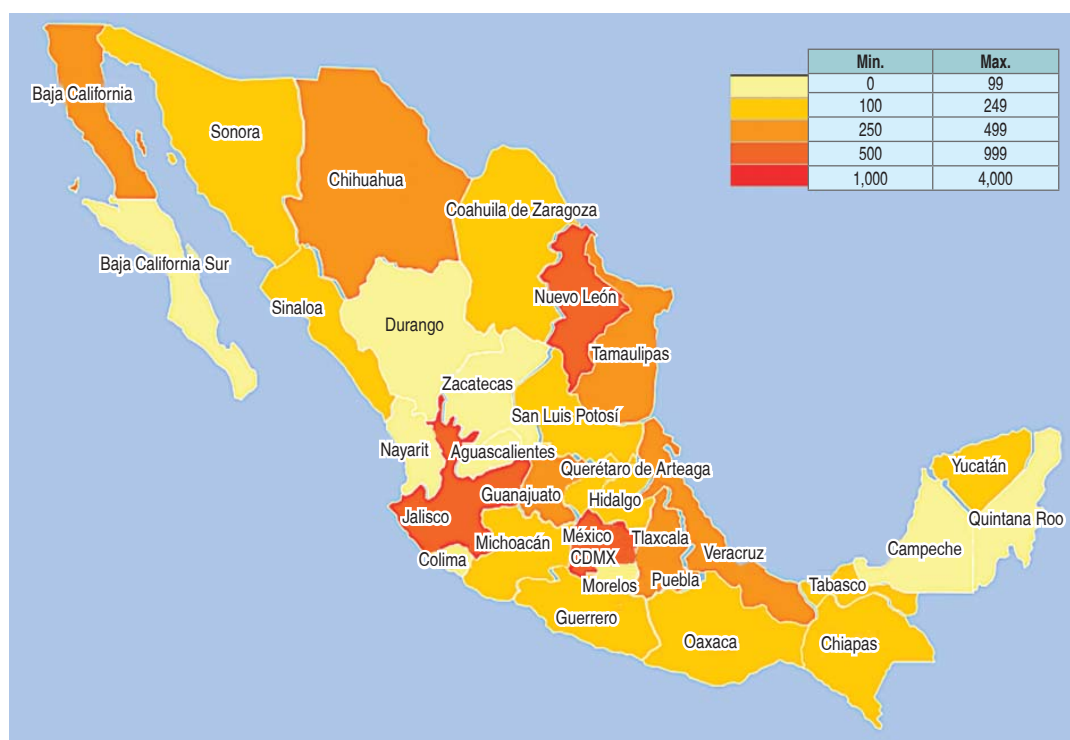


Figure 4:

Heat map representing by colors the number of surgeons certified by the CMCG (data provided by Jorge A. Kobeh, CMCG).

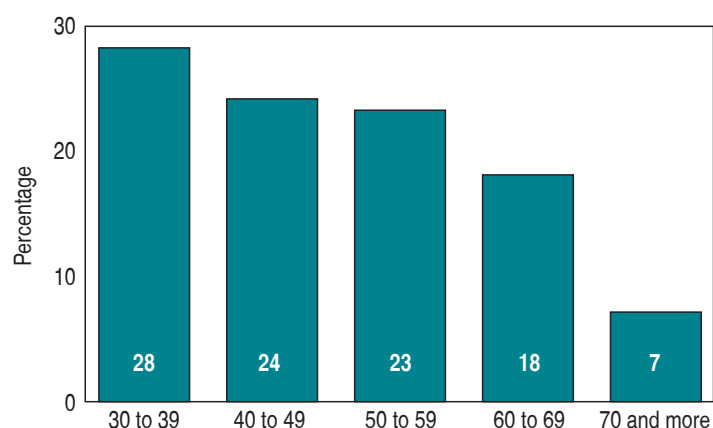


Figure 5: Percentage of surgeons with current certification by decade of life (data provided by Jorge A. Kobeh, CMCG).

postgraduate surgery programs and have more hospitals for residency, and therefore, have the majority of certified surgeons in the country. It is noteworthy that states like Baja California Sur, Durango, Nayarit, Zacatecas, Aguascalientes, Colima, Tlaxcala, Morelos, Campeche, and Quintana Roo have the lowest concentration of certified surgeons, with some

of these states having important population density figures.

Figure 5 shows the percentage of currently certified surgeons registered with the CMCG to date. It can be seen that the highest proportion (52%) are first certified between the ages of 30 and 50, while only 25% are certified above 60. This is probably because the most productive age of the surgeon is between the third and sixth decade of life; however, in the seventh decade many surgeons are still active (about 25%) mainly in the academic and research fields.

We also investigated the number of surgeons who have been certified more than once and how many times more have done so after this first certification, considering that re-certification is every five years, from the foundation of the CMCG to date one should have a maximum of eight re-certifications. Figure 6 shows the percentage of surgeons with one or more certifications. As can be seen, there is a higher proportion of male surgeons who are recertified more than once in comparison to women (χ^2 ; $p < 0.0001$). It is important to note that the probability

of becoming certified on more than one occasion also decreases with age; however, in multivariate analysis both age and gender remain independent factors for certification on more than one occasion (logistic regression; $p < 0.038$).

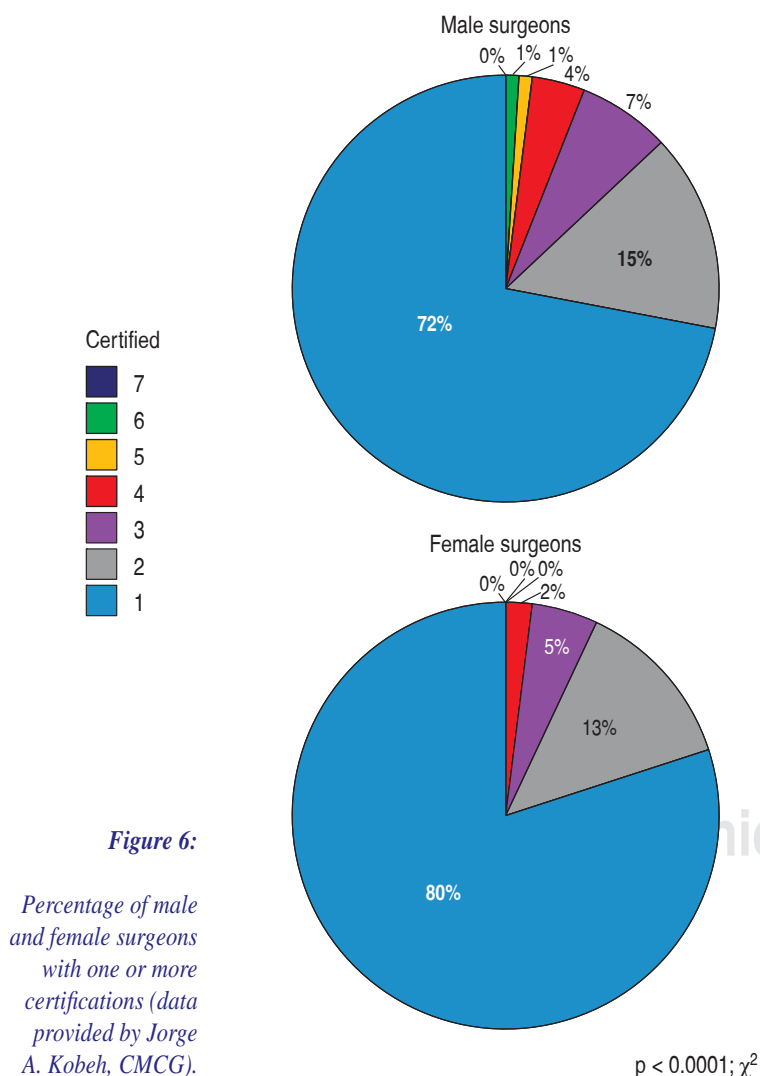
CONCLUSIONS

Over the four decades since its founding, the CMCG has progressed from a paper-based assessment of theoretical knowledge to the assessment of various professional domains and competencies on a virtual platform. To date, a total of 10,232 general surgeons have been certified from all over the country,

predominantly from the states of Jalisco, Nuevo Leon, and Mexico City. Of this total, only 11.4% are women, fortunately, this proportion has been increasing in recent years; however, the number of women who are recertified more than once is significantly lower than that of men. Since the amendment of the General Health Law, in which certification becomes mandatory, the number of surgeons throughout the country has increased considerably. However, it is likely that this number still underestimates the actual total of general surgeons practicing to date throughout the country.

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