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# CHARACTERISTICS OF THE MENTOR IN SURGERY AND ITS CONTRIBUTION IN THE EDUCATION OF THE FUTURE

CARACTERÍSTICAS DEL MENTOR EN CIRUGÍA Y SU CONTRIBUCIÓN EN LA EDUCACIÓN DEL FUTURO

Alberto Córdova-Aguilar<sup>1,a,b</sup>, Lucy Perla Gulliana Cedillo-Ramirez<sup>2,c</sup>

## ABSTRACT

Mentoring in surgery is the art of guiding a future surgeon toward specific academic and professional goals that are likely to determine career success. It requires a solid mentor-resident relationship and a mentor with certain characteristics such as research productivity, understanding of pedagogy and the application of educational technology. The mentor in surgery is the one who adequately guides the resident's various clinical-surgical experiences to achieve meaningful learning. Experience and motivation are the main characteristics of a good mentor, but currently the availability of time and knowledge of educational technology will be essential to build a good relationship with the mentee.

**Key words:** Mentor; Medical teacher; Residency; Surgeons; Education (source: MeSH NLM).

## RESUMEN

La mentoría en cirugía es al arte de guiar a un futuro cirujano hacia objetivos académicos y profesionales específicos que determinarán probablemente el éxito en su carrera. Esta mentoría requiere una sólida relación mentor-residente y un mentor con ciertas características como: la productividad en investigación, la comprensión de la pedagogía y la aplicación de la tecnología educativa. El mentor en cirugía es el que guía adecuadamente las diversas experiencias clínico-quirúrgicas del residente para lograr un aprendizaje significativo. La experiencia y la motivación son las principales características de un buen mentor, pero actualmente la disponibilidad de tiempo y el dominio de la tecnología educativa serán fundamentales para construir una buena relación con el mentoreado.

**Palabras clave:** Mentor; Docente médico; Residencia; Cirujanos; Educación (fuente: DeCS BIREME).

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## INTRODUCTION

The "residency" is the common term for the period of formal medical specialization or second specialty in human medicine<sup>(1)</sup>. Currently in Peru, residency in any of the surgical specialties lasts between three to five years<sup>(2)</sup>. During this period, the resident physician is a graduate student at a university, and as such, must acquire various knowledge, attitudes, and skills before becoming a specialist surgeon. This learning process will require the dedication of the resident, but also adequate mentoring.

For more than a century, mentoring in surgery has been based on the teaching of anatomophysiology and pathophysiology, as well as the development of the technique and the appropriate surgical plan. However, nowadays the challenge is greater due to the restriction of working hours and the increase of institutional paperwork, which unfortunately deprives the clinical-surgical learning resident's opportunities<sup>(2,3)</sup>. Faced with this reality, the resident is forced to master a series of knowledge and skills in less time, which will require the effective guidance of a mentor.

A mentor in surgery is a specialist who shares his knowledge with a less experienced colleague -resident or mentee- through a reciprocal relationship. The mentor can guide in different aspects of life, both personal and professional, but must also adjust the resident's learning process in accordance with the objectives set and the skills found in the future specialist<sup>(4)</sup>. Like all human beings, the resident doctor, in addition to undertaking a rigorous learning process, also faces the work pressure that his role implies, which can generate physical and mental exhaustion during the residency. Because of this, a diligent mentor will know when to speed up and slow down the teaching process.

## MEANING OF THE TERM MENTOR AND ITS ROLE IN SURGERY

Currently, the dictionary of the Royal Spanish Academy refers to this term as an advisor or guide. From a more academic point of view, the mentor becomes "an active partner involved in a relationship in which a person with greater knowledge or experience helps a learner, determining the latter's development"<sup>(5)</sup>.

In the field of surgery, the mentor would oversee properly channeling the various experiences of the resident to achieve significant learning in surgical sciences. This learning includes not only the

development of surgical skills, but also the exercise of correct communication, professionalism, and ethics in patient care<sup>(6)</sup>.

## IDEAL PROFILE OF THE MENTOR IN SURGERY

There are many general characteristics that define the ideal profile of a mentor. Traditionally, experience has been the main characteristic of a mentor, and it is of great importance to create knowledge. The second characteristic, and probably the most important, is the motivation to be a mentor. However, few surgeons have both characteristics, which is why many residents should seek a mentor outside their own institution<sup>(1,6)</sup>.

In addition, an ideal mentor will provide academic support to the resident physician, favoring the establishment of professional connections and forging his autonomy as a future specialist. Furthermore, the good mentor will provide emotional support that guarantees the resident constant learning even when faced with situations of great emotional stress. The mentor will never abuse his authority and, on the contrary, will strive to develop qualities such as accessibility, humility, honesty, and objectivity; fundamental to achieve a secure bond between mentor and mentee<sup>(1,7)</sup>.

Perseverance is a characteristic that should not be overlooked in any context, as it allows the mentor in surgery to maintain contact with the resident to assess their progress, for which taking advantage of technological means is appropriate. In this sense, many mentors use diverse virtual platforms to transmit their knowledge through videoconferences when circumstances do not favor face-to-face teaching<sup>(1,8)</sup>.

## CHOOSE GOOD MENTORS IN SURGERY

Historically the formal surgical learning approach was established by surgeon William Halstead, who is credited with the world's first surgical residency program. Under this classical approach, the experience of a single mentor was transmitted throughout the resident's career. However, over time the difficulty of finding a single appropriate mentor in surgery was noted, so this model has shifted towards a team mentoring approach. The latter approach is better suited to the resident's needs, getting the best out of each mentor. However, set up



a mentoring team in surgery is a real challenge, since it implies the inclusion of an academic and research approach in surgical sciences<sup>(9)</sup>.

According to the general characteristics, there are four types of mentors. The most common is the “parent” mentor who is trustworthy and committed to the resident, has some power, has resources, and establishes the relationship with the resident from the beginning. On the other hand, the “godfather” mentor is also powerful, he attends to the resident's needs, but puts his personal priorities before those of the doctor-in-training, which makes it difficult for the resident to exercise autonomy. Another type is the “big brother” mentor who is generally the senior year resident. Although he is about the same age as the junior resident, he turns out to be a reliable and approachable person to whom one can turn for advice. However, this type of mentor may not have the best answers and may even face the same difficulties as the junior resident. Finally, the “patron” mentor, who is a successful specialist who follows the resident at a distance and helps him with little or nothing in return<sup>(9)</sup>.

Nowadays, the greater the professional work activity, the shorter the time for other activities such as mentoring. If the mentor spends more time developing the resident, he will also have less time for his personal and professional life. Therefore, it is essential to choose a mentor who has the time available to commit to the resident's development as more important than personal prestige. Generally, expert surgeons have less time availability; however, their increased experience could also be of great benefit. For this reason, it is necessary for the resident to assess between the capacity and availability of the mentor, both in the context of regularly scheduled sessions and immediate or unscheduled access. It stands to reason that a strong track record of successful mentoring provides a reliable indicator of mentor engagement<sup>(6)</sup>.

## MENTOR-MENTEE RELATIONSHIP IN SURGERY

In surgical specialties, the mentor maintains a dyadic relationship with the resident, based on respect and mutual benefit, but there is also an intangible hierarchical link. The objective of this relationship is to guide the resident in his academic and professional career. Not only is mentoring expected to be tailored to the resident's needs, but it should also be tailored to the skills of the mentor. Therefore, before forging

the mentor-mentee relationship, the objectives of the resident of any surgical area must be known. Once these objectives are clarified, realistic goals and mutual responsibilities can be established.

On the other hand, the relationship between the resident physician and the mentor is key to create a mentoring legacy over time, generating awareness of the importance of the role of the mentor in the surgery resident, who will become a potential mentor and specialist in the surgical field. Although it is true, the mentor can guide the resident doctor in different aspects of his personal and professional life, the future specialist should not become the copy of the mentor, because this would limit the development of his own abilities and skill. Moreover, it is extremely dangerous for the resident to try to please the mentor by pretending to be interested in a topic or area that they are not passionate about. Thus, there are various reasons that can lead to choosing an inappropriate mentor. If this happens, it is better for either party to realize that the relationship is not working and if it cannot be corrected, it is best to change the mentor or resident, as there will be no benefit<sup>(1,6)</sup>.

## THE FUTURE OF MENTORING IN SURGERY

The global approach of surgical education is constantly changing to achieve greater patient safety. Conventional surgical education that involved the acquisition of skills and techniques within a training or residency period is being replaced by a competency-based approach. The competence is translated as the “know-how” in a specific situation; thus, requires the application of knowledge, skills and attitudes<sup>(10,11)</sup>. To achieve these competencies, the use of educational technologies such as surgical simulators, mobile devices and virtual reality is currently required. By far, surgical simulation is probably the most powerful tool, as it offers objective learning in a risk-free environment; so that residents can develop and exercise operational knowledge, technical skills, and decision-making in surgery. This is extremely useful for certain procedures that require a lot of technical skill or those performed less frequently by residents independently<sup>(12)</sup>. In this way, they not only improve technical skills in junior residents, but also increase the pace of learning in the operating room.

Although there is a lot of information and technology available, the speed of learning is not in the transmission of the information but is the processing

of it. Therefore, mentors in surgery must know different pedagogical strategies and understand that the resident's experience plays a fundamental role in the learning process; so that knowledge is established from its transformation into experience, as Kolb puts it in his theory of experiential learning which also reads in an old phrase: "Tell me and I forget, show me and I remember, involve me and I learn"<sup>(13)</sup>.

Currently the surgical practice has become more complex for both the resident and the mentor. The latter must use educational technology to train the next generation of surgeons, which offers unique tools to help residents acquire and process the information necessary to become masters of their specialty. The learning curve decreases dramatically with the use of educational technology that provides the support for residents to learn to a greater extent than that offered to previous generations<sup>(8,14)</sup>. This is important because doctors from the so-called "millennial" generation will make up 75% of the workforce in the next five years. This generation has a great command of information technology and a trend marked by innovation, so much that a generational shock could be generated, especially in the hospital environment, where hierarchy is almost a norm for learning. This possibility forces the mentors to be interested in the management of the different technological means, not only to stay updated in their practice as surgeons, but also to be able to transmit their knowledge and experience that allows residents to develop skills and abilities own supported by the use of technology<sup>(11,15)</sup>.

## CURRENT OVERVIEW OF MENTORING IN SURGERY

Although different studies confirm the usefulness of mentoring in achieving surgical technique<sup>(16)</sup>, in many countries, such as Peru, there are still no

mentoring programs dedicated to residents of surgical specialties, nor opportunities for formal national training for those who wish to act as mentors. Also, there are no prospective randomized trials comparing the careers of resident physicians who had mentors versus those who did not. There are also no long-term longitudinal studies evaluating the value of mentoring, although several have described its positive effect, especially on professional satisfaction<sup>(16)</sup>. Therefore, it would be urgent to implement mentor training programs in Peru and countries in a similar situation, especially in surgical sciences to provide better education and professional training for the future surgeons, who will benefit from a more complete medical residency program encouraging the training of successful surgeons and mentors.

## CONCLUSION

Mentoring in surgery plays a primary role in the education of any surgical specialty and is a predictive factor for future academic surgeons. An effective mentor recognizes the potential of the resident and prepares a path for the academic success. In addition, he is enthusiastic about learning and seeks the growth of the resident regardless of age or academic position. In this way, the mentor achieves a sense of self-satisfaction in seeing others succeed and generates a possible legacy of mentors for subsequent generations. Finally, like all human beings, the resident is under the effects of constant work pressure and their learning can generate physical and mental exhaustion at each stage of the residence. Therefore, a diligent mentor will know when to accelerate and decelerate the learning process using his knowledge, experience in the surgical area and the use of educational technology to achieve a better specialist surgeon and a potential mentor.



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