

ARTIGO DE PERSPETIVA

Israeli Residency Program in Anesthesia: A Narrative Review

Programa de Formação em Anestesiologia em Israel: Uma Revisão Narrativa

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Afiliação

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INTRODUCTION

The residency program is a complex system that includes many rules and regulations and is governed by several stake holders. These include the departments and hospital managements, who actually run the programs and use the residents and a major workforce running the hospital. The Israel Medical Association as both a professional entity (via its scientific council) governing the rules and requirements on the one hand, and as the employee representative, often objecting to these requirements in the name of employee's rights. On top of these players is the Ministry of Health, which eventually grants the licenses (according to the scientific council recommendation), supervises the departments and is also the employer of many of the residents. In the following pages, we will try to explain the system and how it works. However, it should be noted that things are constantly changing. We will try to illustrate the expected changes as well, but the timeframe of these changes is not always clear. Before we introduce the residency program, we should explain the internship – an intermediate state between medicine school and the residency. Graduates of Israeli as well as foreign medical school, are required to undergo a mandatory one-year internship program before they obtain an unrestricted license to practice medicine in Israel. The program includes obligatory periods of internal medicine, surgery, pediatrics and one month of anesthesia and critical care as well as one month of vacation and two electives (each of one month) during which they choose a department of their liking. The internship program is controlled by a committee of medical school's deans, so many consider it another year

of advanced med school education. Some residency programs (specifically internal medicine and pediatrics) may consider the time spent in the department during internship as part of the respective residency, providing that both electives and mandatory periods were performed in the department. This may shorten the residency by up to six months. However, this option is not opened for anesthesia residency yet. With the success of this program for internal medicine and pediatrics, we are expecting this option will be opened to other professions, including anesthesia.

Upon receiving the unrestricted license to practice medicine, at the end of the internship. Graduates may choose to begin a residency program in Anesthesia. Unlike the United States and some European countries, the residency program is controlled and performed by a specific anesthesia department, under the supervision of the Scientific Council of the Israeli Medical Association. The departments may be affiliated to a university or a faculty of medicine for the purpose of medical student education and academic affiliation of the faculty. However, such an affiliation is not mandatory, and the university has no involvement in the residency program. Residency is considered a professional period rather than an academic one. This distinction is important as it has significant implications on the duties and expectations of the health system from the resident and vice versa. For many years, resident physicians in Israel have been considered first and foremost the backbone of the hospital's workforce. Learning was considered a side benefit, and residents acquired the practice by "osmosis" from observing their senior colleagues; formal education for residents was considered secondary at best. This tendency has radically changed during the last two decades following better understanding of the importance of the structured educational process and the allocation of more time and resources towards this end. The competition

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between departments for recruiting the top graduates has also incentivized departments to invest in better education of their residents. Most of the in-house night calls in Israeli hospitals are performed by residents (Anesthesiology is one of the few professions where attending physicians also routinely cover in-house night calls). The Israeli Ministry of Health and the Israeli Medical Association are trying to cut down the long on-call hours (routinely 24-26 hours today). However, analysis of the effect of this move revealed a drastic increase demand of the already deficient anesthesiologists work force in Israel. Thus, at this point it seems unrealistic that such a move could work without significantly increasing the workforce.¹ The residency system (for all medical professions) in Israel is currently under scrutiny. Many programs (including anesthesia) are in the process of switching to a competency based medical education (CBME). This process is occurring at the national level. However, the process is slow with multiple issues needing solutions and significant financial implications. As these changes have yet to be implemented at the macro level, they are not about to significantly modify the global structure of the residency program in the foreseeable future. Thus, we will describe here the current program, and the changes that are expected to be implemented in the near future, but the discussion of the long-term plans remains outside the scope of this manuscript.

THE RESIDENCY PROGRAM

The program consists of five years working as a resident. Most of this time is spent working in the hospital where the residency occurs. Of these five years, thirty-nine months (3 ¼ years) are taking place in the anesthesia department (including operating rooms, preoperative clinics, labor and delivery, sedation service, etc.). Outside anesthesia, six months are performed in the critical care unit, three months in the chronic pain service, six research-oriented months (called a “basic science” period), and six months of elective periods chosen by the resident in departments such as internal medicine, cardiology, nephrology, pediatric intensive care unit and other professions according to a list published by the scientific council.² Thus, overall, the residency includes 4 years in anesthesia and immediately related professions (critical care and pain clinic) and one more year dedicated to personal-professional development (research and electives). Throughout this time the resident is employed by the hospital where his program originates. Internal rotations: While the months spent in the department of anesthesia (39 months) are organized by the department according to its needs, residents are expected to conduct a pre-determined number of procedures and administer a minimal number of cases in certain sub-specialties such as cardiac and pediatric (see Appendix A). smaller hospitals, lacking departments such as neurosurgery, cardiothoracic and pediatric surgery are required to send their residents for periods of three, six, and sometimes nine months to a larger department, where they

are exposed to these specialties, gain experience, and fulfill the minimal number of cases in the specific sub-specialty. Larger departments may choose to expose the residents via dedicated periods (internal rotations) or spread the exposure throughout the residency period, as long as the resident is completing the required list of cases. Basic science period: All residents are allocated six months of their residency for research purposes. During this time, they are expected to conduct a research project. They start by finding a mentor and submitting a proposal, which has to be approved by the Israeli Scientific Council before the beginning of this period, and they must submit a scientific report (which may be a manuscript in which they are the lead author) at the end. The proposal and final report undergo a peer-review process and need to be approved in order for the resident to graduate. Residents who have a previous research experience such as a PhD or a master’s degree are exempt from this requirement. Recently, a number of programs were opened by the scientific council in collaboration with industry and with research institutes to improve the exposure of resident to relevant education. However, most residents still undertake regular research project paths. Beyond the exposure periods described, the resident is required to undergo a trauma care course. Up until 2023, the only recognized course was the American College of Surgeons ATLS® (Advanced Trauma Life Support) course, which was only offered in Israel by the Military Medical Corpse. Since 2023, the Israeli Medical Council, the Surgical Association, and the Israeli Society for Acute Care and Trauma Surgery are offering a combined online and hands-on course that is recognized as an equivalent to the ATLS with regards to fulfilling the residency requirements. The European trauma course is not, at this point, recognized as an acceptable equivalent course in Israel.

RESIDENCY EXAMS

To complete the residency, residents must succeed in passing a national written exam and an oral/simulated exam. The written exam (step A) is planned as a mid-residency exam, determining the resident’s theoretical knowledge. Residents are allowed to take the exam two years after starting the residency. The exam is held once a year. The oral / simulation exam (step B) may be taken towards the end of the residency period, four years after starting the residency, and only after successfully passing the written exam. This exam concentrates on clinical decision making and on managing critical events (as is tested in a standardized, simulated environment). Unlike the United States, there is no “board eligibility” in Israel. A resident cannot complete his residency until he successfully passes both exams. He will remain a resident until he can pass even if all other requirements are met. The Israeli Step B exams were of the first to incorporate simulated parts, and to these days consists of a simulated emergency situation in the Operating Theatre, Emergency

Department or Post Anesthesia care unit, a simulated pre-operative interview with an actor and a simulated US / Model peripheral nerve blocks station.³

RESIDENCY COMPLETION

At the conclusion of the five years of residency (four and a half for those exempts from the basic science period), including the mandatory rotations as described above, after passing both exams, submitting a research project which was approved, and successfully completing an approved trauma course, the resident has to submit the paperwork proving he has done all that, together with a list of all the procedures he performed (from the hospital's computer). The list must include the minimal number of procedures and cases in each sub-specialty as described above. Once this is done, he is entitled to apply for a license as a specialist. At that point, a letter of support from the chair of his department is also required, but this is a technical issue that has no effect beyond the formalism. All the paperwork is approved by a committee within the Scientific Council, which issues a recommendation to the Ministry of Health who issue the actual license. Israel has no CME (Continuing Medical Education) requirements, or follow up qualifying exams. Thus, a professional license is valid indefinitely unless revoked by the ministry of health (an extremely rare event that requires a semi-judicial procedure, following major criminal acts or gross medical negligence).

SUMMARY AND PLANS FOR THE FUTURE

The Israeli system is using residents as a major work force in academic hospitals. To do that, they are delegated them with responsibility that might not be given in other programs (such as in the United States) at an early stage. The advantage of this approach is that by the time most residents finish five years of residency, especially in the larger medical centers, they have a wide clinical experience, usually more than is required. Therefore, at the end of their education, they are ready to work as independent and safe practitioners. The major drawback of the Israeli system is the lack of formal intra-residency summative assessment. Such assessments could enable allowing residents that requires more time the extra education, and preventing them from taking the final exams and becoming licensed before they can safely practice independently. This puts an unrealistic expectation on the oral and simulative exams that must decide whether a candidate is deemed to be a "safe" independent anesthesiologist, a task which is beyond the scope of any exam, no matter how structured and well designed. Hand In hand with the Israeli and European movement towards CBME as a base for residency training, the Israeli Society of Anesthesiologists has been working on updating the residency requirements (that were last updated in 2016). The goal is that the residency requirements will be in tune with modern scope of practice, including a heavier emphasis on mandatory simulation-based education, required competencies, and including

non-operating room anesthesia (NORA) procedures such as brain angiography, TAVI and cardiac ablations in the syllabus. Changing the base from time and case-based syllabus to a competency based one requires a prominent feedback component that will allow obtaining competencies and verifying this. This requires education of the teachers, and assuring appropriate staffing which carries a significant financial burden. Furthermore, it is expected that this change will cause an increased variability in the length of the residency, a variability that may conflict some of the Israeli work legislation. Due to these difficulties, much more time, planning, work and funding are required until we can switch to a competency-based residency. However, the process is ongoing, and the change is gradually taking place.

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NS, AR: Conception, design, writing, supervision and critical revision of the manuscript

All the authors contributed equally to the design and writing of the manuscript. All approved the final version to be published

NS, AR: *Conceção, desenho, redação, supervisão e revisão crítica do manuscrito*

Todos os autores contribuíram de igual forma para o desenho e escrita do manuscrito. Todos aprovaram a versão final a ser publicada

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