Editorial

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Medical education in Critical Care. What is the standard and what are the minimums? The theory of competencies in perspective

Educación médica en Medicina Crítica. ¿Cuál es el estándar y cuáles los mínimos? La teoría de las competencias en perspectiva

Formação médica em Medicina Crítica. Qual é o padrão e quais são os mínimos? A teoria das competências em perspectiva

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The education construct is the art of communicating and transmitting to new generations, as well as the substance, foundation and content of a culture, encompassing not only teaching *per se*, but learning, process through which the human being acquires or modifies his abilities, skills, knowledge and or behaviors, building experience and adapting it for future occasions, and achieving the integral development of the individual in benefit of society as a whole; by doing this consciously, it allows us to distinguish ourselves within living beings.

There is a great historical tradition in education in the medical profession, having been a necessarily evolutionary process in search of the best model to respond to the needs of society according to the particular time.

Critical Care Medicine in particular, is surrounded by an important technological aura, more than many other areas of medicine, with a significant economic impact on health systems, which in a globalized world but with notorious socioeconomic-cultural imbalances, generates concern in the sense of defining which is the best training model in the specialty, what are the minimums, how to standardize the training processes in such different international societies, with such heterogeneous economic resources in the different geographical regions of the world. Clearly, the educational process is very different in highly developed countries with a high gross domestic product compared to less developed nations and with less fortunate health systems from the point of view of organization, planning and, above all, economics.

Around the theory of education there are many somewhat abstract concepts, however within the label of education, very different formulas are accepted in time and space, even more so among regions, cultures and countries with different degrees of development who live not only different realities, but also have different ideals of life and projects of society.

On the other hand, standardizing education and knowledge is complex; education is the task of subjects and its goal is also training subjects, in this case intensivists, not objects or precision mechanisms, although society has the right to receive health care of the best possible quality in its particular field, which reinforces the idea of describing what are the minimums to train future intensive care professionals; accountability and responsibility to the public is clearly shifting the paradigm of medical education in all areas.

Whoever intends to educate becomes responsible before society, clinical professors, instructors, medical staff, advanced degree residents, hospitals, medical schools, health systems and medical societies among others. Thus, one of the initiatives of the WFICC is to generate a document that tries to agree on the educational minimums in critical care applicable in low- and middle-income nations, assuming that they are met in high-income nations, promoting a kind of democratic universality of education as Savater has described; if potentially each culture is all cultures, cultural differences lose their ineffability becoming concrete and changeable manifestations of a common human nature.

There are multiple examples of Critical Care educational programs of excellence in the world, belonging for example, to some North American, European, Korean and Japanese universities, or the elaborate document CoBaTrICe (Competency-Based Training in Intensive Care Medicine in Europe) of the European Society of Intensive Care Medicine (ESICM) and the European Union's Leonardo da Vinci Programme, based on the educational theory of competencies as its name says, a construct not fully understood by clinicians and those responsible for the educational process due to its complexity as it is integrated not only by medical knowledge, but also by skills and attitudes, and also incorporating assessment guidelines, online educational resources and establishing on the other hand some minimum standards, all of them difficult tasks that must be applied with caution since the application of an approach based in technical and vocational fields to the complex,

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judgment-based profession of medicine can be light dark. This program, an international partnership of professional organizations and critical care clinicians working together to harmonize training in intensive care medicine worldwide, is integrated by 12 domains plus basic sciences: 1. resuscitation and initial management of the acutely ill patient, 2. diagnosis: assessment, investigation, monitoring and data interpretation, 3. disease management, 4. therapeutic interventions/ organ system support in single or multiple organ failure, 5. practical procedures, 6. peri-operative care, 7. comfort and recovery, 8. end of life care, 9. pediatric care, 10. transport, 11. patient safety and health systems management and 12. professionalism).

Almost 20 years ago, the shift from a traditional content-based curriculum in Medicine to a competency-based curriculum was called the «Flexnerian revolution of the 21st century»; in spite of the fact that competence broadly, and competence-based education specifically, are both old and evolving ideas, much discussed in higher-education institutions and in the professions. Calls for competency-based education go back more than half a century, nostalgically recalling the details of the discussions of this theory during the master's studies more than 20 years ago. Competence-based education has been defined as a form of education that derives a curriculum from an analysis of a prospective or actual role in modern society and attempts to certify student progress on the bases of demonstrated performance in some or all the aspects of the specific role. Competency frameworks have multiplied conceptually as well as geographically and now underpin all medical training in the Western world.

There are apparently no boundaries to the domains in which competence language is pertinent and applicable in clinical medicine and there is a full range of candidate competencies that have been promoted in recent years. In fact, as universities and their affiliated teaching institutions and hospitals recognize that attention to patient safety, team-based practice, lifelong learning, and the ability to understand and navigate systems are crucial to the delivery of safe and effective care, new competencies have become the *lingua franca*.

There are many words to define competence: capability, known-how, experience, aptitude, fitness, skill, and proficiency, but questions still remain about competence.

We can consider the construct of clinical competence in general as the application of current knowledge and scientific evidence with required skills and judgement needed to meet the patient's medical needs. The framework of competencies is based on empirical research, educational design and health professionals' consensus. Besides strong scientific knowledge and excellent clinical technical skills, key qualities are also required as: to communicate effectively with patients, their families and colleagues, to act in a professional manner, to cultivate an awareness of one's own values and prejudices and to provide care with an understanding of the cultural and spiritual dimensions of patients' lives. This in a context that allows recognizing the central role of emotional competence in medical training as it sits uneasily at the intersection between objective scientific fact and subjective humanistic values as a site of productive contestation; emotional intelligence, emotional regulation, to do the right thing and integrating these emotions into medical practice are key and essential issues, as well as developing a comprehensive, intuitive, strategic, reflective and deliberative clinical judgment.

Now, it is important to highlight the ultimate aims of CoBaTrICE: first to assure a high quality level education in intensive care medicine, second to harmonize training in this medical field without interfering with national specific regulations and last to allow for free movement of intensive care medicine professionals across the European continent, all of them outstanding and significant goals, that with certainty will contribute to improvements in the quality of delivered care to patients and their families. A sister medical society of COMMEC, the Spanish Society of Intensive, Critical Medicine and Coronary Units (SEMICYUC) has participated in the past in the development of this project and in the translation of the skills program into Spanish. The Pan-American and Iberian Federation of Societies of Intensive Medicine and Intensive Therapy (FEPIMCTI) has established a collaboration framework with the ESICM to work on the CoBaTrICE project in the countries that are part of this Federation, including Mexico, that analyzes the current situation of training of medical professionals in Intensive Care Medicine in the different member countries of the Federation, to develop a competency training program based on CoBaTrICE itself, but adapted to the peculiarities and idiosyncrasies of the particular geographical environment of the Federation, which hopefully allows offering a framework of competencies that help reduce variability in the training of medical professionals in Intensive Care Medicine in the different countries, regardless of the national regulation itself. Also seeking to have educational tools that offer the highest quality training for Intensive Care Medicine professionals, which is expected to result in better results for critically ill patients and their families. Finally, it seeks to promote strategies that favor the incorporation of this training model in the different countries of the region. There is an updated CoBaTrICE document recently published in Intensive Care Medicine.

A similar initiative was taken in Mexico when the different universities in the country agreed to adhere to

the unique plan of medical specialties (PUEM) of the National University of Mexico (UNAM) in all specialties, including of course Critical Care. This is a living program, originally published in 1976 but that has been updated and perfected over a little less than fifty years and is an example of vision, effective collaboration and leadership of distinguished Mexican specialists and teachers from different health institutions integrated in the academic subcommittee of the specialty. Today this program is still based on a teaching-learning methodology focused on solving both theoretical and practical problems, which favors in students the acquisition of the necessary habit and ability to reason and act critically and reflectively in the face of health problems in their professional field, but it is moving towards a competency-based program, like the new Pulmonology and Critical Medicine program recently approved by the UNAM University Council, a fully competency-based one.

The learning process of the traditional program is focused on problem solving and requires the student to be able to transfer past experiences to new situations, determine relationships, analyze the new setting, select among the known principles those that are appropriate to solve the problem condition and conveniently apply said principles. Throughout this process, the student collects and organizes data, analyzes and interprets documents, makes inductive and deductive inferences; procedures that will vary depending on the type of matter and problem. This, like other educational programs, will certainly turn in the near future to the competency-based model.

However, and even with all the previous international work in the area, what are the educational minimums in Critical Care applicable in the different societies of the planet is still an open question. We as Intensive Care Medicine specialists need to generate novel and innovative ideas and viewpoints and cordially request an ongoing debate, discussion, reflection, and further research in this educational area with a global vision; our specialty, society and the critically ill patient deserve it. It has been said that excellence in the education and training of future experts is crucial to the success of all professions, a truth entirely applicable to our reality in the ICU.

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