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POINT OF VIEW

The future of intensive medicine

E. Palencia Herrejón,^{a,*} G. González Díaz,^b J. Mancebo Cortés^c

^a*Servicio de Medicina Intensiva, Hospital Infanta Leonor, Madrid, Spain*

^b*Servicio de Medicina Intensiva, Hospital Morales Messeguer, Murcia, Spain*

^c*Servicio de Medicina Intensiva, Hospital de la Santa Creu i Sant Pau, Barcelona, Spain*

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Abstract Although Intensive Care Medicine is a young specialty compared with other medical disciplines, it currently plays a key role in the process of care for many patients. Experience has shown that professionals with specific training in Intensive Care Medicine are needed to provide high quality care to critically ill patients. In Europe, important steps have been taken towards the standardization of training programs of the different member states. However, it is now necessary to take one more step forward, that is, the creation of a primary specialty in Intensive Care Medicine. Care of the critically ill needs to be led by specialists who have received specific and complete training and who have the necessary professional competences to provide maximum quality care to their patients. The future of the specialty presents challenges that must be faced with determination, with the main objective of meeting the needs of the population.

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PALABRAS CLAVE

Medicina Intensiva;
Especialidad primaria;
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Retos

El futuro de la Medicina Intensiva

Resumen Aunque una especialidad joven en comparación con otras disciplinas médicas, la Medicina Intensiva ocupa en la actualidad un papel clave en el proceso asistencial de muchos pacientes. La experiencia ha demostrado que, para ofrecer una asistencia de calidad a los pacientes críticos, es necesario disponer de profesionales con una formación específica en Medicina Intensiva. En Europa se han dado pasos importantes hacia la homogeneización de los programas formativos de los distintos Estados miembros, pero es necesario dar un paso más, que es la creación de una especialidad primaria de Medicina Intensiva. La atención al enfermo crítico debe ser liderada por especialistas que hayan recibido una formación específica y completa, y posean las competencias profesionales necesarias para prestar una asistencia de la máxima calidad a sus pacientes. El futuro de la especialidad presenta retos que habrá que afrontar con determinación, teniendo como objetivo principal satisfacer las necesidades de la población.

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*Corresponding author.

E-mail address: palenciah@gmail.com (E. Palencia Herrejón).

The history of Intensive Care Medicine is recent compared with other medical disciplines, and its appearance and development have been conditioned both by the need to adequately care for critically ill patients and by the availability of the resources required to this effect. In each country the course taken has been influenced by the prevalent conditions in each case, and the existence of previous structures and resistances has often affected the development of Intensive Care Medicine.¹

In a recent article published in *Critical Care*, Du et al. described the evolution of Intensive Care Medicine in China.² A number of revealing points should be commented about this article. The first Intensive Care Units (ICUs) were created in the 1980s, and were initially staffed by surgeons, internists, emergency care physicians and anesthetists lacking specific training, with some learned skills, but with no global vision of the critically ill patient. The article describes how during the 1990s the "traditional specialties" were reluctant to consider the existence of a proprietary body of knowledge in Intensive Care Medicine, and preferred to retain the "property" of what they regarded as "their" critical patients - rejecting in 1996 the creation of a scientific society to cover this new discipline.

The public health crises of the following years (i.e., the epidemics of severe acute respiratory syndrome (SARS) in 2003, of *Streptococcus suis* in 2005, the avian influenza threat, and the consequences of the Wenchuan earthquake in 2008), made it necessary to reconsider this situation, and revealed the need to have trained and experienced intensivists capable of providing integral care of critical patients. This proved decisive for securing official recognition of the specialty of Intensive Care Medicine in 2009. Now, residents can choose Intensive Care Medicine as a primary specialty on coming out of Medical School, or alternatively may specialize in Intensive Care Medicine as a sub-specialty after completing their training program in Internal Medicine, Anesthesiology, General Surgery or Emergency Care Medicine. At present, work is being done to homogenize training and accreditation in Intensive Care Medicine in the context of a common program for the entire country.

As commented by Gomersall in his editorial,³ the trajectory taken by Intensive Care Medicine in China reflects the growing demand for intensive care and progressive recognition of the specialty in economically expanding countries, and stresses the need to increase and improve global training of the specialists.

Recently, the European communications media have aired the insufficient training of the physicians who treat critically ill patients,⁴ and the lack of beds in intensive care⁵ - these being problems not only of the developing countries but also to one degree or other of the countries in our own geographical setting.

The article published by Du² illustrates how recognition of the specialty of Intensive Care Medicine in China occurred once it became clear that the care of critically ill patients requires the presence of intensivists - a fact that had already been noted in the western world. Ten years ago, Vincent published an editorial in *The Lancet*,⁶ in which after reviewing the abundant evidence of the benefit of intensivists, the author concluded that "It is surprising that

some non-intensivists still consider themselves to be qualified for conducting an ICU".

In these years, important steps have been taken in Europe towards definition of the knowledge, skills and competences inherent to Intensive Care Medicine,⁷ and it seems feasible to agree on a series of universal competences, independently of the training routes followed⁸ - though the advances in this field have not yet been materialized in a homogeneous training program within the European Union.^{9,10} Two recent editorials, one of the editorial board of *The Lancet*,¹¹ and the other of the President and Vice-president of the European Society of Intensive Care Medicine (ESICM),¹² point to the need for Intensive Care Medicine to receive greater formal recognition as a specialty. This same number of the journal publishes a miniseries reviewing the current situation and the challenges facing Intensive Care Medicine in the world.

Adhikari et al.¹³ offer a global perspective of Intensive Care Medicine. They describe the expansion of intensive care throughout the world, but also point out the differences that exist among different geographical settings, both as regards to the impact of critical disease and as regards the availability of resources needed to care for such patients. The reasons why the global epidemiology of critical disease remains little understood are discussed. The tendency is towards a growing imbalance between the demand and offer of intensive care worldwide - this making it necessary to ponder questions such as the prioritization of care, and to place greater emphasis on prevention and the early detection of potentially serious disease processes. The authors in turn underscore the ease with which natural disasters, epidemics and human conflicts can quickly overwhelm the capacity of the healthcare infrastructures and give rise to sanitary crises or even humanitarian catastrophes. Another universal deficiency refers to the training of intensivists, making it necessary to consider alternatives such as telemedicine, and explaining the emigration of professionals - these being circumstances that simply add to the existing regional imbalances.

Curtis et al.¹⁴ addressed the main ethical dilemmas facing Intensive Care Medicine, where rapid and difficult decisions are continuously required; and where most deaths are preceded by a decision not to start, or to interrupt, life support measures. Good communication among professionals, patients and relatives is a fundamental element in this decision taking process. Another challenge, of possibly even greater impact, is the limited availability of resources - this inevitably influencing the decisions relating to patient admission, discharge and the care received, and in turn generating fairness and equity issues.

Lastly, Vincent et al.¹⁵ commented on the increasingly important role of Intensive Care Medicine in the hospital (not only in the ICU), and the difficulties facing research and progress in knowledge in such a heterogeneous and complex patient population. They likewise underscored the importance of clinical management: how improvements in the care processes, based on quality programs, and concern over safety, can be as important for improving the patient prognosis as the use of certain treatment interventions. Mention should also be made here of the importance of organizational models based on the intensivist, with a view to securing the best clinical results.^{16,17}

In sum, much has been done and many things have changed since the origins of Intensive Care Medicine over 50 years ago. Intensive Care Medicine was born in response to concrete problems and developed as a result of technological advances, though now that the discipline has come of age, what defines it best is a concrete doctrine and a body of knowledge, more than any given technology or location. The scientific contribution made by Intensive Care Medicine in this period of time both in Spain and in the rest of the world has been very important, and clinical research focused on the critical patient must continue in the future as an essential condition for continuous development of the discipline and - most importantly - to guarantee ever increasing quality standards in the management of critically ill patients.

The demand for intensive care has grown quickly, though for different reasons, both in the industrialized world and in developing countries, and both settings require implementation of the specialty based on criteria of effectiveness, efficiency and equity. In any case, Intensive Care Medicine presently plays a key role in the management of many patients. Care of the critical patient must be supervised by specialists with the required specific training and a series of professional competences that demonstrate their capacitation in this field. Both the present and the future pose challenges that will have to be faced, and also opportunities for development of the discipline in accordance to the needs of the population.

A brief description is provided below of what we consider to be the main challenges facing Intensive Care Medicine today:

1. Definition of the specialty of Intensive Care Medicine and of its scope of activities, in the global context of a demand that currently exceeds the available resources. In turn, consensus is required regarding the definition of a "critically ill patient", the requirements for beds in the ICU, the levels of care, the admission, discharge and prioritization criteria, and the needs relating to personnel and their qualification.
2. Positioning of Intensive Care Medicine as a cost-effective discipline capable of offering useful survival and of restoring health, wellbeing and wealth to society, with efficient and prioritized management of the available resources. Flexibility is needed in the management of these resources, including the capacity to foresee and cope with overwhelming situations such as epidemics, disasters, etc., which may require rapid reorientation of the existing material and human resources.
3. The need to improve research in Intensive Care Medicine, in relation to ethical norms, with the incorporation of social utility criteria, adequate methodology, the adoption of a global and collaborative perspective, and taking into account the heterogeneity of critically ill patients.
4. Multidisciplinary cooperation (participation of the different levels and medical specialties implicated in patient care), including adequate communication in the "key moments" of the transfer of healthcare responsibility (upon patient admission and discharge from the ICU) and times of maximum risk (patient intra- and inter-hospital transfer outside the ICU).

5. Elimination of undesirable variability in the medical care process; adaptation to the evidence-based good clinical practice guides; the use of protocols, clinical routes and standard operating procedures.
6. Commitment to safety, with rigor in avoiding errors and iatrogenic complications.
7. Development of the activity of Intensive Care Medicine outside the ICU (clinical routes, early detection of alarm signs, rapid response teams, cardiopulmonary resuscitation teams, patient follow-up after discharge, intermediate care units).
8. Ethical issues (anticipated wills, limitation of treatment effort, conditional admissions, end of life care, fairness and equity in the assignment of resources).
9. Importance of outcomes of relevance to the patient and to society (survival and functional recovery over the middle and long term, quality of life, economical efficiency), versus physiological objectives that do not result in true benefit for the patient (improvement of oxygenation or blood pressure), and short-term outcome (mortality in the ICU or in hospital).
10. Adoption of a "client satisfaction" perspective (patient preferences related to personal care, informed consent, shared and consensus-based decision taking, the importance of human relations, professional satisfaction).

Conflict of interest

The authors declare no conflict of interest.

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