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SPECIAL ARTICLE

Current situation of Specialized Health Training in pediatrics and its specific areas: Challenges and needs

Gema Arriola Pereda[a,*], **Jose I. Labarta Aizpún**[b], **María Jesús Sánchez**[c], **María del Mar Rodriguez Vázquez del Rey**[d], **María Yolanda Ruiz del Prado**[e]

[a] *Servicio de Pediatría, Hospital Universitario de Gudalajara, Guadalajara, Spain*
[b] *Servicio de Pediatría, Hospital Miguel Servet, Zaragoza, Spain*
[c] *Urgencias de Pediatría, Hospital Virgen del Rocío, Sevilla, Spain*
[d] *Servicio de Pediatría, Hospital Virgen de las Nieves, Granada, Spain*
[e] *Servicio de Pediatría, Hospital San Pedro, Logroño, Spain*

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Abstract The development of pediatric subspecialties constitutes one of the most outstanding events in pediatrics in our country since the mid-20th century. The FSE in pediatrics is currently based on order SCO/3148/2006, of September 20, which approves and publishes the training program for the specialty of pediatrics and its Specific Areas. It is a training program structured in 4 years that manages to train the resident in the necessary skills of pediatrics, including training in transversal skills, training in general pediatrics and must also include training in different specific areas. In 1995 was approved the Specific Training Area (ACE). In pediatrics, ACEs are necessary to guarantee adequate health care for the child and adolescent population, at the same level as adult medicine, ensuring through regulated training, quality and uniform care. We want to give official recognition to what today is a healthcare reality in all the Spanish hospitals.

PALABRAS CLAVE
Formación sanitariae-specializada (FSE);
Pediatría y sus áreasespecíficas;

Situación actual de la formación sanitaria especializada en pediatría y sus áreas específicas: retos y necesidades

Resumen El desarrollo de las subespecialidades pediátricas constituye uno de los hechos más destacados de la pediatría de nuestro país desde mediados del siglo XX. La FSE en Pediatría está actualmente basada en la orden SCO/3148/2006, de 20 de Septiembre, por la que se aprueba y publica el programa formativo de la especialidad de Pediatría y sus Áreas Específicas. Es un

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* Corresponding author.
E-mail address: garriolapereda@gmail.com (G. Arriola Pereda).

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programa formativo estructurado en 4 años que consigue formar al residente en las competencias necesarias de la Pediatría, incluyendo la formación en unas competencias transversales, una formación en pediatría general y debe incluir además la formación en las diferentes áreas específicas. En 1995 el Consejo Nacional de Especialidades Médicas aprueba el concepto de Área de Capacitación Específica (ACE). En Pediatría las ACEs son necesarias para garantizar una adecuada asistencia sanitaria a la población infanto-juvenil, al mismo nivel que la medicina del adulto, asegurando mediante una formación reglada, una asistencia de calidad y uniforme. Se trata de dar un reconocimiento oficial a lo que hoy en día es una realidad asistencial en los hospitales españoles, en cualquier Comunidad Autónoma.

Medical speciality training (MST) through the residency system started in the United States at the Johns Hopkins hospital in Baltimore in 1889. It arrived in Spain in the 1960s through a group of Spanish physicians who, after obtaining MST in the United States promoted the development of official training programmes in certain hospitals. The first hospitals to implement the medical intern-resident (MIR) system in Spain were the Hospital General de Asturias (Oviedo), in 1963, and the Clínica Puerta de Hierro (Madrid), in 1964.[1]

The development of paediatric subspecialties is one of the most salient events in the field of paediatrics in Spain since the mid-20th century. In 1973, in the X Meeting of the Asociación Española de Pediatría (AEP, Spanish Association of Pediatrics), the internal regulation on paediatric subspecialties was approved. The first approved subspecialties were cardiology, neurology, neonatology and nephrology, with gradual addition of others.[2] In 1978, Royal Decree (RD) 2015/1978 regulating the issuing of medical speciality degrees[3] included ''Paediatrics and its specialities'', by which paediatric specialities were conceptually and officially recognised.

Royal Decree 127/1984 consolidated the MIR system as the sole pathway for medical speciality training in Spain,[4] the highlights of which were the accreditation of teaching hospitals and units subject to regular auditing to ensure their educational quality, the introduction of a centralised university entrance examination, the definition and classification of specialities and programmes regulated by the Comisiones Nacionales de Especialidad (National Specialty Committees), the Consejo Nacional de Especialidades (National Speciality Council) and the establishment of education committees in teaching facilities. This royal decree changed the designation of the field to ''Paediatrics and its Specific Areas'', thus recognising the similarities between a speciality and a specific area, or subspeciality.

To regulate MST, the Law for the Organization of the Health Professions was approved in 2003,[5] followed by the regulation of the working conditions of medical residents in a RD in [6] and the establishment of the foundations of speciality training in the health sciences in RD 183/2008 in 2008.[7]

Speciality training in paediatrics is currently regulated by Order SCO/3148/2006, of 20 September, which approved and presented the training programme for the speciality of paediatrics and its subspecialities.[8] The training programme is structured into 4 years to train residents in the necessary competencies in paediatric care, understood as the comprehensive care offered in the period of human development spanning from conception to the end of adolescence. The 4-year programme must include training in key skills, general paediatrics and the different subspecialities. At present, a large number of hospitals—up to 73.6% based on recent surveys conducted in Spain through the completion of questionnaires[9]—deliver training in general paediatrics for 3 years and add training in one subspeciality in the last year.

The training requirements for the medical speciality of paediatrics vary between countries. In Europe, some countries require 6 years of training in a university hospital, such as Ireland, Austria or Finland, while others require only 4 years, such as Spain, France or Greece.[10,11] In Canada, the training involves a 5-year residency including multiple rotations in different subspeciality and training in community-based or primary care paediatrics for 10–12 months out of the total training period. In the United States, the paediatrics residency programme lasts 3 years, and additional training (fellowship) in a paediatric subspeciality takes another 2–3 years.[12]

In 1994, in the framework of the general updating of the MIR training programmes, la National Committee on Paediatrics and its Specific Areas presented a 5-year training programme that included ''training of paediatricians for accreditation in paediatric subspecialities'' through the completion of the last 2 years of residency (years 4 and 5) in teaching units accredited in specific subspecialities.[13]

In December 2014, the European Union of Medical Specialists (UEMS) and the European Academy of Pediatrics approved a 5-year curriculum for training in paediatrics comprising 3 years of common trunk training in general paediatrics and 2 years for paediatric speciality training.[14] This initiative was endorsed by the AEP and thereafter by the National Committee on Paediatrics and its Specific Areas. However, at present the training in Spain continues to adhere to the 4-year programme established in 2006.

In 1995, the National Council of Medical Specialities approved the definition of specific training area (STA) as the set of in-depth or expanded knowledge, skills and attitudes added to the training in a medical speciality and building on a specific area within the scope of one or more specialities that has already attracted sufficient interest in the scientific and health care community and to which a group of specialists is already dedicating significant effort.[15]

In 2003, Law 44/2003 for the Organization of the Health Professions regulated speciality training in the health sciences and established the legal framework for the award of accredited advanced degrees and certificates in response to the petition of the Health Professions Continuing Education Committee to certify the level of qualification achieved by health professionals in a specific care area through continuing education.

In 2022, the AEP, in collaboration with the societies of the different paediatric subspecialities, published the *Libro Blanco de las ACEs Pediátricas* (White Book of Paediatric STAs)[16] with the aim of providing the competent health care authorities with knowledge on the current situation of paediatric STAs. The AEP considered that the 19 subspecialities included in the book fulfilled the requirements to be recognised as an STA. These areas were: paediatric cardiology, paediatric palliative care, paediatric endocrinology, inborn errors of metabolism, paediatric gastroenterology, hepatology and nutrition, paediatric haematology and oncology, paediatric infectious disease, paediatric clinical immunology, allergology and asthma, adolescent medicine, paediatric intensive care medicine, paediatric nephrology, neonatology, paediatric pulmonology, paediatric neurology, primary care paediatrics, hospital-based internal medicine paediatrics, social paediatrics, paediatric rheumatology and paediatric emergency medicine. Child psychiatry is already a recognised speciality and the official recognition of clinical genetics is underway. The book presents the different STAs and explains for each the rationale for its recognition and the elements that differentiate it from other areas. It also presents the training curriculum for each specific area based on European syllabi and the conditions that facilities must meet to be accredited to deliver training in the subspeciality. Lastly, it presented a geographical map for each specific training area featuring the current number of specialists in each region for the purpose of future planning.

In July 2022, RD 589/2022 was passed, regulating the procedure for the proposal of new specialist titles in the health sciences and for the creation of STA diplomas.[17] This RD paved the way for the official recognition of paediatric subspecialities. It established the criteria that must be met for a specific subfield to be recognised in the form of an STA degree and the requirements to access and obtain it. It also specified the functions of STA committees, the training curriculum, organization and structure of the training bodies, evaluation and scope of practice for the awarding of an STA degree and defined the process to gain access to the training and for the allocation of the available spots. Education in an STA is meant to respond to advances in technology and scientific knowledge requiring adequate and specific training to acquire highly specialised skills with the ultimate goal of improving care quality and patient health outcomes. The procedure for the creation of a new STA degree is initiated by the National Speciality Committee, which will file the petition with the Directorate General for the Regulation of Professions of the Ministry of Health, providing documentation on the fulfilment of a series of criteria regarding the knowledge and skills required in the subspeciality, justifying the need for subspeciality training, specifying the scope of the STA and proving the availability of the resources required to guarantee adequate training, the viability of the STA and its adherence to European regulations. We ought to underscore that when a given area of knowledge or skills does not meet the criteria established for the definition of an STA, it is possible to consider the delivery of specific training in the area through continuing education, offering accreditation through official certificates and advanced certificates, as established in RD 639/2015, which introduced legislation regarding the requirements and the pathway to obtain such certifications.[18] In 2014, the RD regulating the common trunk training in paediatric s and other aspects of speciality training approved the establishment of several STAs, including neonatology, but this regulation was subsequently voided by a Supreme Court ruling.

Although there are many reasons that support the need to officially recognise STAs, the main one is the need to guarantee adequate care to the child and adolescent population, at the same level offered to the adult population, ensuring high-quality and standardised care through official accredited training. The objective is to make official what is already a reality in care delivery in the hospitals of every autonomous community in Spain. This would bring us to the level of many European countries where paediatric subspecialities are already recognised. Their recognition is necessary to promote their development and regulate administrative and educational aspects concerning the creation and appointment of positions in the health care system and the development of teaching units to deliver training programmes leading to an accredited title. While we eagerly await the recognition of STAs, it is important to stimulate and facilitate training in paediatric subspecialities through the developed teaching units, offering rigorous accreditation of such training through the corresponding paediatric speciality societies.[11,13]

The future challenges of specialised training in paediatrics are challenges we are already experiencing. We must train future paediatricians based on an awareness of the needs that emerge as a result of social, pedagogical and scientific changes currently underway that will continue to unfold in the society of the 21st century. Some of these challenges are:

- Revision of the current training programme in paediatrics and its specific areas, published in 2006, to adapt it to the emerging needs in today's paediatric care, which ought to include:
  - o General competencies and key skills, as required by RD 589/2022 of 19 July. Ethics, legislation, communication, patient safety, health care quality and humane care must be included in the new programme.
  - o Competencies based on the changes that have taken place in health care in the past few years.
    - □ Care of patients with multimorbidity and complex chronic disease. Advances in the diagnosis, treatment and prevention of diseases and accidental injuries have achieved a decrease in acute condi-

tions and an increase in survival in newborns and patients with severe diseases. This has caused a shift in care delivery, with an increase in hospital-at-home and day hospital services and the need for coordination between levels of care, in addition to the development of a care model fostering relationships with families, schools and health and social welfare institutions.
  - Child and adolescent mental health services. Conditions that lead to isolation, exacerbated by the pandemic, and the development of new information and communication tools through social networks, among other factors such as school bullying, exposure to gender violence in homes and violence in society, have increased the incidence of mental health disorders, a challenge that upcoming generations of paediatricians have to be ready to face.
  - Paediatric transport. The migration to cities and the depopulation of certain areas result in the dispersion of paediatric care services and centralization in tertiary care hospitals that are geographically distant from primary care centres. Stabilization in the sending facility and high-quality paediatric transport is necessary to adapt to this reality.
  - Globalization of infectious diseases. It is not limited to the COVID-19 pandemic, as there are other examples, like monkeypox outbreak or the risk of viral haemorrhagic fevers, which exist today and will continue to exist due to changing migratory and intercontinental transmission patterns.
  - Prevention-based medicine. Prevention is one of the tools available to the health care system to improve health outcomes.
  - Scientific and technological advances. The vertiginous growth in both diagnostic and therapeutic techniques causes continuous changes in the management of diseases. We live in the century of technology applied to health care, and we are about to witness the in-depth development of biodata export and analysis and artificial intelligence, which will be applied in our field improve health outcomes in the paediatric population.
- Balance between training in common trunk general paediatrics and subspeciality training. Multiple factors have contributed to decrease the motivation in seeking a career in primary care paediatrics, which is the cornerstone of the delivery of high-quality care to the paediatric population, such as the centralization of medical speciality training in hospitals, the current duration of the training in the speciality of paediatrics (insufficient to train in general paediatrics as well as a paediatric subspeciality), the competition with the private health care system as a source of employment, and the working conditions and scarcity of resources in primary care paediatrics. Therefore, speciality training in paediatrics and its subspecialities must guarantee adequate training in primary care paediatrics and hospital-based general paediatric care and, through the development of STAs, meet the needs of the Spanish paediatric population for specialised care for severe and rare diseases, thus ensuring equity in relation to adult care. The development of a new training programme lasting at least 5 years is necessary to address all the current needs.
- High-quality paediatrics multidisciplinary teaching units (MDTUs) to provide training to the next generation of paediatricians. The figure of the paediatrics and paediatric subspeciality MDTU coordinator must be recognised within their hierarchy, defining a specific profile and allocating the necessary human and structural resources for the performance of this leadership role. A plan to ensure quality in education, dependent not on the facilities themselves but on the National Specialty Committee, must be established to deliver high-quality, standardised and up-to-date training, introducing novel educational tools such as clinical simulation.
- Challenges related to social and generational issues. Society undergoes changes in needs and behaviours that have an impact on our relationships and habits. We are encountering a generation that expects immediacy, which elicits the need to offer quick solutions to problems, and there has been a substantial increase in the demand for urgent care and for rapid diagnostic tests and solutions, a demand that is also placed on caregivers and health professionals. Current paediatric professionals must educate parents on the basics of health care culture to provide them with tools to solve specific situations that do not require urgent care, and professionals must be trained in a health care culture based on values, sustainability and efficiency. Advances toward communication 4.0 have led to the development of telemedicine, making health care more accessible to families and producing changes in how professionals, children and families communicate with one another. Evolving family models have brought on a social transformation and required changes in paediatric care. Current hiring systems and disparities in wages, combined with improved communications between countries, have led more professionals to develop their clinical and scientific activity outside Spain.
- Motivation of professionals. Administrators tend to perceive the paediatric age group as having few health care needs, which may result in neglecting consideration of this subset of the population in health care planning and resource allocation, except for specific diseases that have a larger impact on society. As paediatricians, we must become fully qualified not only in care delivery, but also in the areas of education, innovation and research, and strive to have the care of children and adolescents perceived as a priority by society.
- Sustainability and efficiency of the system. One of the most important challenges is making the health care system more sustainable and time-efficient. To this end, we must emphasize the value of a unified strategy founded in the rational use of resources, prevention, equity, accessibility, scientific evidence, the coordination between different fields and levels of care, the humanization of care, the education of patients and parents in self-care and the integration of new methodologies. Resources are finite and we must face this challenge to make our health care system sustainable.

Future paediatricians will face numerous challenges, but the most important one will be to provide the best possible

comprehensive care to children and their caregivers, which is not an easy task in the 21st century.

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Conflicts of interest

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