

# SEAIC Specialty Forum: Analysis of the Current Situation of Allergology in Spain and Outlook for the Future

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## ■ Abstract

*Background:* Allergology has been a recognized medical specialty in Spain, with fully defined aims and competencies for more than 4 decades. However, in recent years, its visibility seems to have decreased somewhat.

*Objectives:* To identify which specific factors have contributed to the waning of the importance of the specialty and find tangible solutions to consolidate its place as a front-line medical specialty.

*Material and methods:* An online population survey comprising 60 items of interest was prepared. The degree of agreement and the level of satisfaction with each item were assessed, and implementable initiatives in the short, medium, and long terms were defined in order to provide solutions to the issues identified.

*Results:* The survey was completed by a total of 167 specialists with an average of 18 years' experience. Most were from public reference hospitals, and 29.3% were heads of department. The line of action for which a good degree of agreement was achieved was to promote the inclusion of an allergist in multidisciplinary teams. The priority lines of action were to improve undergraduate and graduate training in allergology and specialized nursing, to identify curricula in Spain, and to develop robust teaching projects.

*Conclusions:* The results revealed a high degree of homogeneity between professionals. The basic pillars highlighted were as follows: quality training, knowledge, and research in immunotherapy; an innovative portfolio of services endorsed by clinical practice guidelines; and presence in multidisciplinary teams and relevant hospital committees.

**Key words:** Allergology. Visibility. Multidisciplinary. Strategic plan. Portfolio of services. Scientific development. SEAIC (Spanish Society of Allergology Clinical Immunology).

## ■ Resumen

*Antecedentes:* En nuestro país, la alergología constituye una especialidad médica reconocida con fines y competencias completamente definidos desde hace más de cuatro décadas. Sin embargo, en los últimos tiempos parece hacer frente a una cierta disminución de su visibilidad y reconocimiento.

*Objetivos:* Identificar qué factores específicos contribuyen a esta dilución de su peso específico y buscar soluciones tangibles que la afiancen como especialidad médica de primera línea.

*Material y métodos:* Se elaboró una encuesta poblacional online compuesta por 60 ítems considerados de interés. Se valoró el grado de acuerdo y el nivel de satisfacción con cada uno, definiendo iniciativas implantables a corto, medio y largo plazo que aporten soluciones para las cuestiones identificadas.

*Resultados:* La encuesta fue respondida por un total de 167 especialistas con una media de 18 años de experiencia, la mayoría procedentes de hospitales de referencia públicos, siendo un 29,3% jefes del servicio. La línea de acción que obtuvo un mayor grado de acuerdo fue

promover la presencia del alergólogo en los equipos multidisciplinares. Como línea de acción más prioritaria se seleccionó mejorar la formación de pregrado y posgrado en alergología, así como la de enfermería especializada, identificando planes de estudio en nuestro país y elaborando proyectos docentes robustos.

**Conclusiones:** Los resultados revelaron un elevado grado de homogeneidad entre los profesionales, destacando como pilares básicos la formación de calidad, los conocimientos e investigación en inmunoterapia, una cartera de servicios novedosa avalada por Guías de Práctica Clínica y la presencia en equipos multidisciplinares y comisiones hospitalarias relevantes.

**Palabras clave:** Alergología. Visibilidad. Multidisciplinar. Plan estratégico. Cartera de servicios. Desarrollo científico. SEAIC.

## Introduction

Allergology is a medical specialty that covers the knowledge, diagnosis, and treatment of disease produced by immunological mechanisms and relevant associated techniques (Order of the Ministry of Health and Consumption/3081/2006, of September 20, published in the Official State Gazette of Spain (BOE) no. 241, dated October 9, 2006, pages 34979 to 34982) [1]. Historically, the specialty began alongside internal medicine thanks to Professor Carlos Jiménez Díaz, who expressed his interest in allergic processes in his work "Asthma and other allergic diseases" published in 1932. However, over time, allergology has sought to build its own identity, which materialized in 1978, with its recognition as a specialty subject in a specific training program through the Spanish medical resident system. This approach differs considerably from that of most European countries, where allergology does not exist as a specialty or is a subspecialty that has to be accessed through others [2].

While allergology is a recognized specialty in Spain, with fully defined aims and competencies, it has been affected by a shortfall in professionals for more than 20 years. In 1980, the World Health Organization (WHO) recommended 1 allergist for every 50 000 inhabitants [3]. However, taking epidemiological changes into account, this figure should be reviewed. In recent years, and despite the fact that there are currently about 1200 doctors with specific training in allergology in Spain, the distribution of both allergists and skilled nursing professionals varies significantly between autonomous regional governments, thus generating long waiting lists and referral of a large number of patients to nonspecialist doctors to treat allergic diseases, increasing healthcare costs, and negatively affecting the quality of care [4,5]. According to a report published by the University of Las Palmas in 2018, the ratio of allergists per 100 000 inhabitants is 1.42 in the Spanish National Health System, that is, 28th out of 43 specialties from a total of 631 specialists. This figure rises to 2.3 if total employment is taken into account, including statutory, interim, and substitute personnel and any other type of contract, except medical residents. Of the total number of allergologists, 68.7% are women and 46.3% are aged 50 or older. The ratio varies by regional government from 0 in the Balearic Islands, 0.49 in Asturias, and 0.77 in Andalusia to 2.31 in Castilla La Mancha and 2.45 in Madrid, with an average variability between communities of 41% (Figure). As for the likelihood of changes in the need for specialists in the next 15

years, it is estimated that the demand in allergology will be stable and balanced, with the expectation of 2.3 allergists per 100 000 inhabitants by 2030 [6].

In parallel, recent years have seen a significant improvement in life expectancy, as well as the emergence of new allergens, multiple diseases, and chronicity [5], all of which imply an increase in demand for specialist care [7]. Consequently, training, teaching, and research needs, and ultimately the organization of available health care resources, must all be updated in line with this new scenario. This is particularly true for chronic diseases [8] and for diseases with a growing prevalence throughout the world, some of which, such as allergic diseases, are very common during childhood [9-13].

Research is one of the pillars of the spirit of scientific development for the Spanish Society of Allergology and Clinical Immunology (SEAIC), whose not-for-profit foundation constituted in 1986 prioritizes scientific production in the field of allergology and clinical immunology through various activities, including calls for grants for research work, scholarships, and internships for young allergists, as well as the publication of high-level manuscripts. In addition, the presence of Spanish allergists in the sections and interest groups of the European Academy of Allergy and Clinical Immunology (EAACI) is increasing and will result in improved research through collaboration in groups. However, since research in health care is scarce [14], work must continue in order to strengthen the excellence, dynamism, and creativity of scientific development in this field.

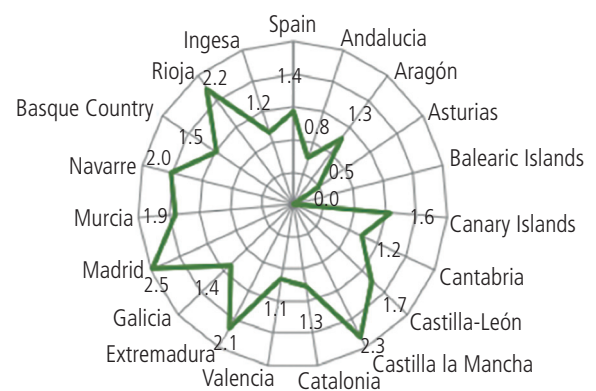


Figure. Ratio of allergist specialists per 100 000 inhabitants. Public employment in the Spanish National Health System 2018.

Table 1. Thematic Blocks, Challenges Identified, and Items Valued in the Population Validation Survey Sent to SEAIC Members

Thematic Block	Challenges	Items
1. Superspecialization, multidisciplinary units, and change in the care model	1.1: Lack of visibility of the specialty in hospitals	<ul style="list-style-type: none"> <li>– Promote the presence of the allergist in multidisciplinary teams, leveraging their specific competencies through clinical pathways that support them.</li> <li>– Encourage the participation of the allergist in clinical sessions of other relevant services and hospital committees (eg, Pharmacy and Therapeutics Committee, PROA), and vice versa.</li> <li>– Demonstrate cost-effectiveness by calculating high impact interventions (eg, interdepartmental consultations) and comprehensive approaches that avoid referrals to other specialists.</li> <li>– Prepare an annual report including the main milestones reached during the year. The Head of Department and a person responsible for supporting these functions should prepare the report.</li> <li>– Develop a specialization plan adapted to the needs of each center, agreeing on the necessary specialist consultations (both general and complex, or for emerging diseases).</li> <li>– Promote nonexclusive superspecialization, including both complex patients and for more general allergic diseases.</li> <li>– Develop a patient referral algorithm, both internally and for other specialties.</li> <li>– Identify the scope of the consultations based on their severity, managing noncomplex consultations in primary care and referring complex cases to the hospital.</li> <li>– Approach the specialty in primary care field through value training of professionals involved in the field.</li> </ul>
	1.2: Absence of guidelines for adequate superspecialization and organization of specialist consultations	
	1.3: Lack of presence in primary care field	
2. Definition of services portfolio (diseases) and technical advancement and updating of diagnostic methods	2.1: Absence of visibility due to an obsolete service portfolio that is ignored	<ul style="list-style-type: none"> <li>– Offer an updated and attractive portfolio of services by both the allergist and the allergy nurse that leverages the availability of the most sophisticated techniques.</li> <li>– Incorporate complex in vivo and in vitro techniques (eg, molecular diagnosis, BAT) and diseases with an emerging incidence or complex nature.</li> <li>– Promote projects with the institutional support of scientific societies, and ensure they continue in the medium to long term.</li> <li>– Obtain the support of SEAIC in awarding prizes for innovative initiatives and quality professional work and promote recognition of its support in scientific publications.</li> <li>– Present an analysis of the needs of each service to the administration in order to justify an increase in human and technical resources.</li> <li>– Create alliances with the pharmaceutical industry and related specialties through agreements that strengthen the role of the allergist in the management of immune-based diseases.</li> </ul>
	2.2: Lack of knowledge and an evasive attitude in the management of emerging and complex diseases with a possible or proven inflammatory or immunological basis	
	2.3: Inadequate organization that makes it difficult to expand the portfolio of services to new diagnostic and therapeutic opportunities	
3. Qualification of therapeutic tools (immunotherapy) and adaptation of new treatments	3.1: Wide diversity and variety of immunotherapeutic treatments without the necessary standardization or clinical validation	<ul style="list-style-type: none"> <li>– Promote appropriate training in immunotherapy adapted to different levels of care, consolidating and strengthening knowledge of subsidiary diseases and developing algorithms that are included in clinical practice guidelines.</li> <li>– Implement the application of molecular and “omics” techniques in immunotherapy, as well as biomarkers with diagnostic value, prognosis, and follow-up.</li> <li>– Increase the number of registered biological products and prioritize their use, establishing the minimum requirements that must be met according to their clinical relevance.</li> <li>– Restrict financing to biological products with proven efficacy only, rejecting the marketing of those that have not undergone appropriate clinical development.</li> <li>– Promote clinical trials in immunotherapy, with a design adapted to the disease under study, as well as new indications and routes of administration, and publish the results.</li> </ul>
	3.2: Ignorance of immunotherapy by other professionals, questioning of its effectiveness, and poor positioning in clinical practice guidelines	
	3.3 and 3.4: Difficulty in developing clinical algorithms with new biological treatments that include allergic diseases and strengthen the role of the allergist. Lack of recognition of the allergist as a competent and necessary professional in management of the disease	

(continued)

Table 1. Thematic Blocks, Challenges Identified, and Items Valued in the Population Validation Survey Sent to SEAIC Members (*continued*)

Thematic Block	Challenges	Items
4. Nursing training and stabilization	4.1: Poor undergraduate, postgraduate, and continuing allergology training	<ul style="list-style-type: none"> <li>– Integrate nurses in the multidisciplinary team, not only at the health care level, but also in terms of training, clinical management, organization, and research.</li> <li>– Encourage the figure of an expert nurse through a nationally endorsed specialization in parallel to the superspecialization of the service.</li> <li>– Adapt the agenda to the complexity of the consultations, encouraging the implementation of a personalized agenda for nursing.</li> <li>– Improve the undergraduate and postgraduate training of nurses through standardized programs taught by expert professors collaborating in areas of interest.</li> </ul>
	4.2: Lack of development of nursing staff's own competencies in the allergology department	
	4.3: Lack of integration of nursing in the multidisciplinary team	
5. Undergraduate and postgraduate training, and acquisition of talent	5.1: Reduced presence of teachers and, consequently, of teaching content in undergraduate training	<ul style="list-style-type: none"> <li>– Develop a talent acquisition plan, facilitating access to specialty information through digital media and search engines (eg, “choosing allergology”) and encouraging contact with residents.</li> <li>– To improve the undergraduate and graduate training of the allergist, identifying curricula in Spain and developing teaching projects with a robust approach.</li> <li>– Identify postdoctoral allergists by categories, disseminating both accreditation figures and criteria generally and among SEAIC partners.</li> </ul>
	5.2: Unattractive specialty for future residents (choice)	
	5.3: Absence of talent acquisition programs	
6. Clinical practice homogenization, accreditation, and recertification (services and professionals)	6.1: Variability in clinical practice discredits the specialty	<ul style="list-style-type: none"> <li>– Generate accredited clinical practice guidelines that guarantee minimum requirements in all areas and complex patient referral criteria, creating reference units for infrequent diseases.</li> <li>– Official agencies assign accreditation value to compliance with the clinical practice guidelines.</li> <li>– Develop a training program for new specialists and subspecialists based on the acquisition of assessable competencies that acts as the basis for implementing recertification.</li> <li>– Guarantee the unlinked accreditation of commercial interests, creating a registry of specialists and subspecialists accessible to the general population to ensure transparency of procedures.</li> <li>– Involve SEAIC and other official bodies (eg, universities, official colleges) in the support and dissemination of allergology training as well as the recertification criteria and direction of specialist consultations.</li> </ul>
	6.2: Absence of records of specialists or subspecialists in specific areas	
	6.3: A recertification tool has not been developed by the Administration or by SEAIC	
7. Research professionalization	7.1: Lack of critical mass of research staff in the allergology community	<ul style="list-style-type: none"> <li>– Include training in research methodology and languages, promoting the presentation of quality work in specialized congresses.</li> <li>– Identify emerging researchers and promote aid for their training (eg, scholarships with the ISCIII, reduced congress fees, rotations abroad) and integration into committees.</li> <li>– Organize multidisciplinary forums for the transfer of ideas between universities, pharmaceutical industry, and allergy researchers.</li> <li>– Promote crowd sourcing and the expansion of resources of current networks (eg, ARADyAL) to generate links with other national/international societies and groups (eg, EAACI).</li> <li>– Create a Biomedical Research Networking Center (CIBER) for allergic diseases, as well as a directory of centers of excellence, and promote the presentation of scientific sessions by these centers at the SEAIC congress.</li> <li>– Identify research groups that are likely to join institutes, generating a line of communication between them through conferences and forums.</li> <li>– Incorporate basic researchers from other branches of knowledge (eg, biochemists, pharmacists) into the SEAIC research strategy to increase its spectrum of action.</li> <li>– Create a committee to advise the SEAIC Board of Directors on research and is responsible for the development of clinical practice guidelines, consensus documents, and meta-analysis.</li> </ul>
	7.2: Lack of presence in the decision-making nuclei of research policy	
	7.3: Lack of clear research strategy at SEAIC	

*(continued)*

Table 1. Thematic Blocks, Challenges Identified, and Items Valued in the Population Validation Survey Sent to SEAIC Members (*continued*)

Thematic Block	Challenges	Items
8. Alliances with patients and patient associations	8.1: Inaccurate knowledge of the specialty among the general population and health professionals	<ul style="list-style-type: none"> <li>– Promote uniform education of patients through digital media, brochures, and infographics. These should be genuinely useful, with an attractive design incorporating a logo that identifies the credentials of the allergist.</li> <li>– Identify the RESCAL level corresponding to each service and make it known to the general population, explaining its implication for quality and safety.</li> <li>– Promote synergies with patient associations through SEAIC and regional societies, proposing a relationship with them.</li> <li>– Convene an annual prize/scholarship for projects presented by patient associations, which enables analysis of their real needs and provides customized solutions.</li> </ul>
	8.2: Lack of unanimity in clinical criteria and service portfolios, including shortage of educational classrooms	
	8.3: Small number of patient associations, poor professionalization, and with a local scope of action	
9. Communication strategies, new technologies, and internationalization	9.1: The allergology specialty has little visibility	<ul style="list-style-type: none"> <li>– With the support of the hospital press office, design a visibility plan adapted to the needs of each center, revisable periodically.</li> <li>– Increase the representation of the specialty in both national and international institutions, promoting the exchange of interns/residents and other specialists.</li> <li>– Encourage the use of telemedicine or virtual consultations, depending on the complexity of the disease, providing appropriate training for this at all levels involved (doctor, nurse, and patient).</li> <li>– Develop tools for self-management and deferred communication, actively involving the committees/working groups in their real-world applicability.</li> <li>– Involve SEAIC in drawing up the global communication plan, adding descriptive contents from the specialty as a whole and attractive designs for both patients and professionals.</li> <li>– Get SEAIC to lead and finance the creation of big data platforms and the use of new technologies.</li> </ul>
	9.2: Poor implementation of new technologies	
	9.3: Lack of internationalization of the allergology specialty	
10. Allergology in private practice	10.1: Feeling of helplessness and very weak position of the allergist in private practice vis à vis free medical insurance companies, especially if allergists practice alone or in a small group	<ul style="list-style-type: none"> <li>– Hire a consultant to analyze the service portfolio and the cost by center and area, and establish an appropriate percentage for each procedure to ensure a reasonable profit.</li> <li>– Compare the scales applied by the insurers between each other and with respect to ideals and demand that these be reviewed annually according to the CPI.</li> <li>– Create a committee to serve as an interlocutor with the insurers, working on an annual explanatory report of the services sent to the insurers for review.</li> <li>– Conduct an annual national survey that assesses the degree of satisfaction of private allergists and publicize the results.</li> <li>– Create a specific committee within the SEAIC, in addition to a person in charge of each regional society that reports to it, acting as an organ defending its interests.</li> <li>– Have an updated census of private allergists and create a platform for information exchange and visibility of centers and consultations.</li> <li>– Promote a homogeneous collection of information on procedures and quality of care, preparing a report and surveys that assess the degree of implementation of the measures proposed and can be disseminated as necessary.</li> <li>– Encourage communication between private and public centers, favoring the holding of clinical sessions and mixed training activities.</li> <li>– Encourage the integration of the private allergist in the structure of the SEAIC through various figures (eg, relationships in all of the Boards of Directors, Development Committee, and professional practice).</li> <li>– Create an online platform in the private sector, preferably hosted on the SEAIC website.</li> </ul>
	10.2: Lack of cohesion between specialist allergists in private practice	
	10.3: Private allergology is undervalued by public allergology	

Abbreviations: BAT, basophil activation test; CPI, consumer price index; PROA, Program for Optimal Use of Antimicrobials; RESCAL, Recomendaciones de Seguridad y Calidad en Alergología (Recommendations on Safety and Quality in Allergology); SEAIC, Sociedad Española de Alergología e Inmunología Clínica (Spanish Society of Allergology and Clinical Immunology).

## Objectives

The Specialty Forum was created driven by the ongoing commitment of SEAIC to the pursuit of clinical excellence. The Forum's main mission includes reviewing the current situation for the future development of a strategic plan that allows allergists, both at present and in the future, to face and overcome these challenges successfully. The analysis of this situation offers a triple vision that encompasses SEAIC as a scientific society, allergology as a specialty, and allergists and specialist nurses as professionals. Such an approach will enable the specialty to adapt to a constantly changing world, with new diagnostic and therapeutic opportunities. It will also identify the specific factors that contribute to the waning of its importance while looking for tangible solutions that strengthen it as a front-line medical specialty.

## Methods

The initiative was led by 2 coordinators supported by a panel of 9 experts, all of whom belong to SEAIC, thus constituting a structured process comprising 4 sequential phases: initial analysis of the current situation of the specialty; identification of the work blocks; proposal of challenges, strategic objectives, and lines of action around the issues established; and subsequent validation of the results obtained.

### *Initial Analysis of the Situation of the Specialty*

The diagnosis of the current situation was structured around 6 fundamental pillars, a series of questions of interest being raised in each of them to guide the process of establishing challenges and future perspectives in later phases. These pillars were the scope of the specialty, its clinical methods, its specific therapeutic methods, the holistic approach to the allergic patient, the resources available, and aspects relating to teaching, research, and training. A detailed list of the topics, points of interest, and questions raised is shown in the online repository (Table 1). These topics and discussion points were compiled by the 2 coordinators at the head of the initiative and shared with the remaining members of the scientific committee to enable full reflection and to identify priority work blocks.

### *Identification of the Work Blocks*

Once the work blocks and questions were shared with the scientific committee, the main conclusions and points made by each member were presented in a face-to-face meeting. After a process of individual reflection and subsequent joint debate, 10 thematic blocks considered to be of interest were identified, and each was assigned a coordinator and a corresponding working group as detailed in the online repository (Table 2).

### *Challenges, Strategic Objectives, and Lines of Action*

Through the development of 3 face-to-face workshops, the most pressing problems affecting the work blocks raised were analyzed, identifying the 3 most relevant challenges

in each of them that the specialty has to face today. Next, a series of strategic objectives and tangible lines of action were established to provide, as far as possible, solutions applicable to clinical practice in the specific challenges. To do so, each group worked individually on the block assigned and then briefly presented its conclusions to the other groups. Finally, the results obtained were compiled and shared with all of the participants for validation prior to the following phases being implemented.

### *Validation of the Results Obtained*

With the main conclusions obtained in the workshops, a population survey was prepared in an online format consisting of a total of 60 items. This was uploaded to the SEAIC website for 1 month for completion by all interested members. All respondents were required to have at least 5 years of experience in the specialty of allergology, thus excluding medical residents. The survey made it possible to determine the degree of agreement with the proposed lines of action (on a scale ranging from 1 to 10, with 1 being the maximum level of disagreement and 10 the maximum level of agreement) and to assess the priority of application for the lines of action for each block independently, assigning the number 1 to the action with the highest priority.

Subsequently, a pooled analysis of the degree of agreement obtained for each item was carried out, according to the following criteria: 1 to 4, disagreement or scant agreement; 5 to 7, moderate agreement; 8 to 10, total agreement. Next, the 30 lines of action that obtained the highest percentage of agreement were selected and grouped into 3 subsets of 10 items ordered correlatively. Using the data selected, a second analysis was carried out according to the priority level, and the average figure was obtained, with the figure closest to 1 representing the action with the highest priority.

The statistical analysis was performed using IBM SPSS Statistics 20.0.0 for Windows (IBM Corp.).

## Results

The items making up each of the work blocks submitted for evaluation, as extracted from the analysis of the information obtained in the face-to-face workshops, are listed in Table 1.

The survey was completed during the month of March 2019 by a total of 167 specialists. The participants presented an average of 18 years' experience, and 72% were women; 29.3% were heads of department, and the remaining 70.7% were attending physicians. Almost three quarters (74%) belonged to referral hospitals, with the Regional Government of Madrid registering the highest percentage of participation (26.9% of the answers obtained). A more detailed description of the sociodemographic characteristics is presented in the online repository (Table 3).

The results of the survey revealed that the participants showed a very high degree of agreement with most of the proposed lines of action for each of the blocks worked on. The highest level of agreement (94.3%) was found for the need to promote the presence of the allergist in multidisciplinary

Table 2. Lines of Action With the Highest Degree of Global Agreement Revealed in the Survey and Percentage Reached For Each of Them

No. in the Ranking	Lines of Action With the Highest Percentage of Agreement	Degree of Agreement (%)
Subset 1		
1	BLOCK 1. Promote the presence of the allergist in multidisciplinary teams, leveraging specific competencies through clinical pathways that support him/her.	93.4
2	BLOCK 1. Encourage the participation of the allergist in clinical sessions of other relevant services and hospital committees (eg, Pharmacy and Therapeutics Committee, PROA), and vice versa.	91.6
3	BLOCK 6. Generate accredited clinical practice guidelines that guarantee minimum requirements in all areas and complex patient referral criteria, creating reference units for infrequent diseases.	91.4
4	BLOCK 3. Promote appropriate training in immunotherapy, adapted to different levels of care, consolidating and strengthening the knowledge of subsidiary diseases and developing algorithms that are included in clinical practice guidelines.	91.2
5	BLOCK 3. Promote clinical trials in immunotherapy with a design adapted to the disease under study, as well as new indications and routes of administration, and publish the results.	91.1
6	BLOCK 2. Offer an updated and attractive portfolio of services that leverages the availability of the most sophisticated techniques provided by both the allergist and the nurse.	90.8
7	BLOCK 2. Incorporate complex in vivo and in vitro techniques (eg, molecular diagnosis, BAT) and diseases with an emerging incidence or complex nature.	90.1
8	BLOCK 2. Present the administration with an analysis of the needs of each service to justify an increase in technical and human resources.	89.4
9	BLOCK 5. Improve the undergraduate and graduate training of the allergist, identifying curricula in Spain and developing teaching projects with a robust approach.	89.4
10	BLOCK 6. Involve SEAIC and other official bodies (eg, universities, official professional organizations) in the support and dissemination of allergology training, as well as in recertification criteria and direction of specialist consultations.	87.6
Subset 2		
11	BLOCK 7. Identify emerging researchers and promote aid for their training (eg, scholarships with the ISCIII, reduced congress fees, rotations abroad) and integration into committees.	87.0
12	BLOCK 3. Implement the application of molecular and “omics” techniques in immunotherapy, as well as biomarkers with value for diagnosis, prognosis, and follow-up.	86.9
13	BLOCK 9. Increase the representation of the specialty in both national and international institutions by promoting the exchange of interns/residents and other specialists.	86.7
14	BLOCK 1. Demonstrate cost-effectiveness by calculating high-impact interventions (eg, interdepartmental consultations) and comprehensive approaches that avoid referrals to other specialists.	83.8
15	BLOCK 4. Achieve the integration of nurses in the multidisciplinary team not only at health care level but also in terms of training, clinical management, organization, and research.	83.7
16	BLOCK 7. Include training in research methodology and the English language, committing to the presentation of quality work at specialized congresses.	83.5
17	BLOCK 7. Create a Biomedical Research Networking Center (CIBER) for allergic diseases, as well as a directory of centers of excellence, and promote the presentation of scientific sessions by these centers at the SEAIC congress.	83.3
18	BLOCK 4. Improve the undergraduate and postgraduate training of nurses through standardized programs taught by expert professors collaborating in areas of interest.	83.0
19	BLOCK 2. Promote projects with regional societies and other related scientific societies (eg, SEMERGEN, SEMFYC, SEPAR) and work to ensure that these continue in the medium to long term.	82.2
20	BLOCK 3. Restrict the inclusion in pharmacotherapeutic guidelines to biological products with proven efficacy only, rejecting the marketing and sale of those that have not undergone appropriate clinical development.	82.2
Subset 3		
21	BLOCK 7. Organize multidisciplinary forums for the transfer of ideas between universities, pharmaceutical industry, and allergy researchers.	81.9

(continued)

Table 2. Lines of Action With the Highest Degree of Global Agreement Revealed in the Survey and Percentage Reached For Each of Them (*continued*)

No. in the Ranking	Lines of Action With the Highest Percentage of Agreement	Degree of Agreement (%)
22	BLOCK 1. Approach the specialty in primary care through value training of professionals involved in the field.	81.8
23	BLOCK 10. Compare the scales applied by insurers, between them, and with respect to ideals, and demand that these be reviewed annually according to the CPI.	81.0
24	BLOCK 4. Encourage the idea of an expert nurse through a nationally endorsed specialization, in parallel to the superspecialization of the service.	80.9
25	BLOCK 6. Guarantee the unlinked accreditation of commercial interests, creating a registry of specialists and subspecialists accessible to the general population to ensure the transparency of the procedures.	80.7
26	BLOCK 10. Carry out an analysis of the service portfolio and the cost by center and area, establishing the percentage of decent profit by procedure.	80.4
27	BLOCK 7. Identify research groups that are likely to join institutes, generating a line of communication between them through conferences and forums.	79.7
28	BLOCK 7. Incorporate basic researchers from other disciplines (eg, biochemists, pharmacists) into the SEAIC research strategy to increase its spectrum of action.	79.7
29	BLOCK 6. Develop a training program for new specialists and subspecialists based on the acquisition of assessable competencies that acts as the basis for implementing recertification.	79.3
30	BLOCK 7. Create a committee to advise the SEAIC Board of Directors on research and is responsible for the development of clinical practice guidelines, consensus documents, and meta-analyses.	79.0

Abbreviations: BAT, basophil activation test; CPI, consumer price index; PROA, Program for Optimal Use of Antimicrobials; SEAIC, Sociedad Española de Alergología e Inmunología Clínica (Spanish Society of Allergology and Clinical Immunology).

teams, valuing their specific competencies through clinical pathways that support them. The second highest agreement for an initiative was to encourage the participation of the allergist in the clinical sessions of other relevant services and hospital committees (eg, Pharmacy and Therapeutics Committee, Program for Optimal Use of Antimicrobials [PROA]), and vice versa (91.6%). The third was to generate accredited clinical practice guidelines to guarantee a minimum level of care in all areas, criteria for referral of the complex patient, and reference units for infrequent conditions (91.4%).

Table 2 shows the degree of agreement reached for the 30 major lines of action in descending order of the percentage obtained for each of them.

With respect to the level of priority, of the agreed lines of action with a higher percentage, the one with the highest priority, both within the first subset and overall, was to improve undergraduate and postgraduate training in allergology, identifying plans for study in Spain and developing teaching projects with a robust approach (1.05). The second initiative that the respondents indicated as the highest priority was to promote the idea of an expert nurse through a nationally endorsed specialization, in parallel to the superspecialization of the service (1.34). Finally, achieving the integration of the nurse in the multidisciplinary team, not only in terms of care, but also in terms of training, clinical management, organization, and research, was selected as the third priority line of action in the general set (1.42).

Table 3 shows the average priority reached for the 30 lines of action mentioned above in descending order in each subset according to the value obtained for each of them.

## Discussion

The results of the survey revealed a very high degree of agreement with most of the proposed lines of action for each of the blocks worked on, thus indicating the homogeneity of the professionals working in the specialty (doctors and nurses).

The proposed line of action for which the greatest degree of agreement was obtained in overall terms was that aiming to promote the presence of the allergist in multidisciplinary teams, valuing specific competencies through clinical routes that support them. If the latest available data on the national map and portfolio of specialty services are analyzed, the presence of multidisciplinary units is increasingly common in allergology services, as is the case with other specialties [5]. There is a great deal of evidence for the benefits of multidisciplinary interventions in allergic diseases and patients' quality of life, especially in those with moderate to severe disease [15,16]. Consequently, encouraging the integration of the allergy specialist by strengthening the relevance of the field could prove advantageous in the comprehensive approach to the patient. However, in this context, it should be noted that only 31% of current centers have specialist allergology units, most of which involve allergy day hospitals or immunotherapy units, with only 15% dedicated to providing specific allergy care [5]. The only currently available data refer to the operation of severe asthma, urticaria, and immunotherapy units, although more types of specific unit are needed in Spain. Furthermore, since it is necessary to define the minimum requirements necessary for



Table 3. Average Priority Reached for the Lines of Action With the Highest Degree of Global Agreement

No. in the Ranking	Lines of Action With the Highest Percentage of Agreement	Average Priority
Subset 1		
1	BLOCK 5. To improve the undergraduate and graduate training of the allergist, identifying curricula in Spain and developing teaching projects with a robust approach.	1.05
2	BLOCK 2. Offer an updated and attractive portfolio of services that leverages the availability of the most sophisticated techniques provided by both the allergist and the nurse.	1.43
3	BLOCK 3. Promote adequate training in immunotherapy, adapted to different levels of care, consolidating and strengthening knowledge of subsidiary diseases, and developing algorithms that are included in clinical practice guidelines.	1.67
4	BLOCK 6. Generate accredited clinical practice guidelines that guarantee minimum requirements in all areas and complex patient referral criteria, creating reference units for infrequent diseases.	1.69
5	BLOCK 1. Promote the presence of the allergist in multidisciplinary teams, leveraging their specific competencies through clinical pathways that support them.	1.73
6	BLOCK 2. Incorporate complex in vivo and in vitro techniques (eg, molecular diagnosis, BAT) and diseases with an emerging incidence or complex nature.	1.74
7	BLOCK 1. Encourage the participation of the allergist in clinical sessions of other relevant services and hospital committees (eg, Pharmacy and Therapeutics Committee, PROA), and vice versa.	1.83
8	BLOCK 6. Involve SEAIC and other official bodies (eg, universities, official colleges) in the support and dissemination of allergology training, as well as in the recertification criteria and management of specialist consultations.	3.14
9	BLOCK 3. Promote clinical trials in immunotherapy using a design adapted to the disease under study, as well as new indications and routes of administration, and publish the results.	3.16
10	BLOCK 2. Present an analysis of the needs of each service to the administration that could justify an increase in technical and human resources.	3.25
Subset 2		
11	BLOCK 4. Integrate nurses into the multidisciplinary team not only at health care level, but also in terms of training, clinical management, organization, and research.	1.42
12	BLOCK 9. Increase the representation of the specialty in both national and international institutions by promoting the exchange of interns/residents and other specialists.	1.55
13	BLOCK 3. Implement the application of molecular and “omics” techniques in immunotherapy, as well as biomarkers with value for diagnosis, prognosis, and follow-up.	1.71
14	BLOCK 7. Identify emerging researchers and promote aid for their training (eg, scholarships with the ISCIII, reduced congress fees, rotations abroad) and inclusion on committees.	1.89
15	BLOCK 2. Promote projects with regional societies and other related scientific societies (eg, SEMERGEN, SEMFYC, SEPAR) and ensure that these continue in the medium to long term.	2.37
16	BLOCK 1. Demonstrate cost-effectiveness by calculating high impact interventions (eg, interdepartmental consultations) and a comprehensive approach that avoids referrals to other specialists.	2.45
17	BLOCK 4. Improve undergraduate and postgraduate training of nurses through standardized programs taught by expert professors collaborating in areas of interest.	2.64
18	BLOCK 7. Include training in research methodology and the English language, committing to the presentation of quality work in specialized congresses.	2.88
19	BLOCK 3. Restrict the inclusion in the Pharmacotherapeutic Guide to biological products with proven efficacy only, rejecting the marketing and sale of those that have not undergone appropriate clinical development.	3.02
20	BLOCK 7. Create a Biomedical Research Networking Center (CIBER) for allergic diseases, as well as a directory of centers of excellence, and promote the presentation of scientific sessions by these centers at SEAIC congress.	3.86

(continued)

Table 3. Average Priority Reached for the Lines of Action With the Highest Degree of Global Agreement (*continued*)

No. in the Ranking	Lines of Action With the Highest Percentage of Agreement	Average Priority
Subset 3		
21	BLOCK 4. Encourage the idea of an expert nurse through a nationally endorsed specialization, in parallel to the superspecialization of the service.	1.34
22	BLOCK 10. Compare the scales applied by the insurers, between them, and with respect to ideals, and demand that these be reviewed annually according to the CPI.	1.78
23	BLOCK 10. Carry out an analysis of the service portfolio and the cost by center and area and establish an appropriate percentage for each procedure to ensure a reasonable.	2.07
24	BLOCK 6. Develop a training program for new specialists and subspecialists based on the acquisition of assessable competencies that acts as the basis for implementing recertification.	2.38
25	BLOCK 7. Organize multidisciplinary forums for the transfer of ideas between universities, the pharmaceutical industry, and allergy researchers.	2.61
26	BLOCK 6. Guarantee the unlinked accreditation of commercial interests, creating a registry of specialists and subspecialists accessible to the general population to ensure the transparency of the procedures.	3.01
27	BLOCK 7. Identify research groups likely to join institutes, generating a line of communication between them through conferences and forums.	4.80
28	BLOCK 7. Incorporate basic researchers from other disciplines (eg, biochemists, pharmacists) into the SEAIC research strategy to increase its spectrum of action.	5.37
29	BLOCK 7. Create a committee to advise the SEAIC Board of Directors on research and is responsible for the development of clinical practice guidelines, consensus documents, and meta-analyses.	5.85
30	BLOCK 1. Bring the specialty closer to the primary care field through value training for professionals involved in this field.	6.45

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their implementation, the process of integrating the allergist into the care circuit must be accompanied by a definition of these requirements, thus consolidating the role of the allergist as a fundamental link in the management of patients with an immune disease.

Another priority line of action was that of improving undergraduate and graduate training of the allergist and specialist nurse by identifying study plans in Spain and developing teaching projects with a robust approach. The level of training of Spanish allergists is among the best in the world thanks to the specific specialty program, whose multidisciplinary approach ensures that students are exposed to various training rotations. In addition, official statistics show that 54% of departments have undergraduate teaching and 50% postgraduate teaching, with 44% of departments providing training in allergology to medical residents and 88% receiving rotating doctors from other specialties [5]. However, despite being officially recognized, the presence of allergology as a subject in the curricula of medical degrees in Spanish medical schools is irregular, and the number of tenured professors or professors accredited as tenured is very low, thus constituting one of the key challenges in the repositioning of the specialty and even more so considering that this situation is even worse with respect to the training provided in nursing degrees. In addition, accreditation in allergology is lacking at the European level; consequently, one of the most immediate needs of the specialty is to achieve this homogeneity in the academic

field, both at the undergraduate and postgraduate stages. Substantial improvement in the training plan for specialists must be promoted in the future, not only to achieve visibility of the portfolio of services, but also to ensure that the portfolio is adapted to an environment undergoing constant change, incorporating complex *in vivo* and *in vitro* techniques as well as complex diseases and those whose incidence is increasing, from the perspective of a multidisciplinary vision of the patient and synergies with other specialties. Promotion of research is another priority line expressed by specialists. This concern has already been addressed by the SEAIC, since it has carried out 2 research promotion plans among professionals in the sector in recent years [14,17]. Nevertheless, although scientific production and participation in the Thematic Networks for Cooperative Health research (RETICS) and Biomedical Research Networking Centers (CIBER) at the Carlos III Health Institute is all well and good, more effort is needed to maintain this trajectory.

## Conclusions

Our results show that the main actions to be implemented in the near future revolve around 5 fundamental objectives, as follows:

- Promote the integration of the allergist in multidisciplinary teams and participation in relevant hospital committees

in order to showcase the value of their specific competences.

- Promote appropriate undergraduate and postgraduate training in allergology, as well as in nursing degrees; these should be backed by SEaic and other official bodies and translated into robust teaching plans.
- Strengthen knowledge in immunotherapy through specific training and clinical trials that explore new indications and therapeutic algorithms in order to consolidate their use in daily practice and promote the clinical development of the specialty.
- Offer a portfolio of services that incorporates new techniques and emerging and complex diseases, backed by clinical practice guidelines that define appropriate referral criteria.
- Finally, perform an analysis of the specific needs of each service that justifies increased technical and human resources from the administration.

These objectives should be analyzed in detail by the SEaic Board of Directors for their integration into the strategic plan and translation into practice in short-, medium-, and longer-term initiatives that consolidate the visibility and future of the specialty.

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## Conflicts of Interest

Dr. Sastre reports personal fees from AstraZeneca, personal fees from GSK, personal fees from LETI, personal fees from FAES, personal fees from SANOFI, personal fees from MUNDIPHARAMA, and personal fees from NOVARTIS, outside the submitted work.

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## References

1. Ministry of Health. BOE-A-2006-17620. Order SCO/3081/2006. APPENDIX: Official Allergology Specialty Programme. Available at: <https://www.boe.es/buscar/doc.php?id=BOE-A-2006-17620>
2. Spanish Society of Allergology and Immunology (SEaic). 2011-18 Strategic Plan. Available at: <https://www.seaic.org/inicio/historia-de-la-seaic>
3. World Allergy Organization (WAO). White Book on Allergy. Pawankar R, et al. 2011. Available at: [https://www.worldallergy.org/UserFiles/file/WAO-White-Book-on-Allergy\\_March-2011\\_lo\\_Final%203-20-11.pdf](https://www.worldallergy.org/UserFiles/file/WAO-White-Book-on-Allergy_March-2011_lo_Final%203-20-11.pdf)
4. García Pérez MA, Amaya Pombó C, Black Álvarez JM. Allergology in Spain: past, present and future forecasts. *Alergol Inmunol Clin*. 2005;20:41-7.
5. Spanish Society of Allergology and Immunology (SEaic). Allergological Report 2015. Available at: <https://www.seaic.org/inicio/noticias-general/alerologica-2015.html>
6. Barber Pérez P, González López-Valcárcel B. Estimate of the supply and demand of medical specialists. Spain 2018-2030. Available at: <https://www.mscls.gob.es/profesionales/formacion/necesidadEspecialistas/doc/20182030EstimacionOfertaDemandaMedicosEspecialistasV2.pdf>
7. Domínguez-Ortega J, Ruiz Hornillos J, Chivato T, De la Hoz B, Elices A, Quirce S, et al. [Allergology in the public health service of the Community of Madrid: current situation and opportunities in the XXI century public health system]. *An Sist Sanit Navar*. 2014;37(3):317-27.
8. García-Goñi M, Hernández-Quevedo C, Nuño-Solinis R, Paolucci F. Pathways towards chronic care-focused healthcare systems: evidence from Spain. *Health Policy*. 2012;108:236-45.
9. Izquierdo-Domínguez A, Valero AL, Mullol J. Comparative analysis of allergic rhinitis in children and adults. *Curr Allergy Asthma Rep*. 2013;13:142-51.
10. Bousquet J, Schünemann HJ, Samolinski B, Demoly P, Baena-Cagnani CE, Bachert C, et al. Allergic rhinitis and its impact on asthma (ARIA): achievements in 10 years and future needs. *J Allergy Clin Immunol*. 2012;130:1049-62.
11. Ojeda P, Ibáñez MD, Olaguibel JM, Sastre J, Chivato T; investigators participating in the National Survey of the Spanish Society of Allergology and Clinical Immunology Allergology 2015. Allergologica 2015: A National Survey on Allergic Diseases in the Spanish Pediatric Population. *J Investig Allergol Clin Immunol*. 2018;28:321-9.
12. Ojeda P, Tailor J, Olaguibel JM, Chivato T, investigators participating in the National Survey of the Spanish Society of Allergology and Clinical Immunology Allergology 2015. Allergologica 2015: A National Survey on Allergic Diseases in the Adult Spanish Population. *J Investig Allergol Clin Immunol*. 2018;28:151-64.
13. Simon D. Recent Advances in Clinical Allergy and Immunology. *Int Arch Allergy Immunol*. 2018;177:324-33.
14. Spanish Society of Allergology and Immunology (SEaic). Allergology Strategic Research Plan 2017-2021. Available at: <https://www.seaic.org/inicio/historia-de-la-seaic>
15. LeBovidge JS, Elverson W, Timmons KG, Hawryluk EB, Rea C, Lee M, et al. Multidisciplinary interventions in the management

- of atopic dermatitis. *J Allergy Clin Immunol.* 2016;138:325-34.
16. Kapoor S, Roberts G, Bynoe Y, Gaughan M, Habibi P, Lack G. Influence of a multidisciplinary paediatric allergy clinic on parental knowledge and rate of subsequent allergic reactions. *Allergy.* 2004;59:185-91.
  17. Spanish Society of Allergology and Immunology (SEAI). Strategic Plan for the Promotion of Research in the SEAI 2016-2020 Strategic Plan. Available at: <https://www.seaic.org/inicio/historia-de-la-seaic>

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