

SEAIC Specialty Forum: analysis of the current situation of allergology in Spain and its future outlook

Short title: allergology specialty forum in Spain

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This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi:

10.18176/jiaci.0473

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Summary

Context: Allergology in Spain has been a recognised medical specialty with fully defined aims and competencies for more than four decades. However, in recent times it seems to have faced a certain drop in its visibility and recognition.

Aims: Identify which specific factors have contributed to this waning of its importance and find tangible solutions to consolidate its place as a front-line medical specialty.

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

Results: The survey was answered by a total of 167 specialists with an average of 18 years experience, the majority coming from public reference hospitals, and 29.3% being heads of service. The line of action that obtained a good degree of agreement was to promote the placing of an allergist in multidisciplinary teams. The priority line of action was to improve undergraduate and graduate training in allergology as well as specialised nursing, identifying curricula in Spain and developing robust teaching projects.

Conclusions: The results revealed a high degree of homogeneity between professionals. The basic pillars highlighted were quality training, knowledge, and research in immunotherapy, an innovative portfolio of services endorsed by Clinical Practice Guidelines, and a presence in multidisciplinary teams and relevant hospital commissions.

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

Resumen

Contexto: 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 the medical specialty that includes the knowledge, diagnosis, and treatment of the pathology produced by immunological mechanisms, and relevant techniques (Order of the Ministry of Health and Consumption/3081/2006, of 20 September, published in the Official State Gazette of Spain (BOE) no. 241, of 9 October 2006, pages 34979 to 34982).[1]Historically, thanks to Professor Carlos Jiménez Díaz, the specialty began alongside internal medicine. Jiménez Díaz 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 materialised in 1978 with its recognition as a specialty, being subject to a specific training programme through the resident medical system (MIR). Without a doubt, this fact represents a differentiating factor compared to the large majority of European countries in which allergology does not exist as a specialty or is a subspecialty which has to be accessed through others. [2]

However, although it is a recognised specialty in Spain with fully defined aims and competencies, in recent times it seems to have faced a shortfall in professionals that has been the case for more than 20 years. In 1980 the World Health Organization (WHO) recommended one allergist to every 50,000 inhabitants [3], but taking epidemiological changes into account, this figure should be reviewed. In recent years and despite the fact that there are currently about 1,200 doctors with specific training in allergology in Spain, the distribution of both allergists and skilled nursing professionals varies significantly between autonomous regional governments, generating long waiting lists or referral of a large number of patients to non-specialist doctors to treat allergic-based pathologies in this area, 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 (SNS), ranking 28th out of 43 specialties with a total of 631 specialists. This figure rises to 2.3 if total employment is taken into account, including statutory, interim, substitute personnel or any other type of contract, except MIR. Of these, 68.7% are women and 46.3% are 50 years of age 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 1**). As for the likelihood of changes in the need for specialists in the next fifteen years, it is estimated that the demand in allergology will be stable and balanced, with the expectation of 2.3 total allergists per 100,000 inhabitants by 2030. [6]

In parallel, recent have seen a significant improvement in life expectancy as well as the emergence of new allergens, multiple pathologies, and chronicity⁵, which implies an increase in demand for specialist care.[7] Consequently, training, teaching, and research needs, and ultimately the organisation of the available health resources, all need to be updated in line with this new scenario, especially for chronic pathologies[8]and those with a growing prevalence throughout the world, particularly high during paediatric age, such as those of an allergic nature.[9-13]

Regarding research, there is no doubt that this constitutes one of the implicit pillars of the spirit of scientific development at the SEAIC Foundation (Spanish Society of Allergology and Clinical Immunology) since it has a not-for-profit foundation constituted in 1986 with the priority objective of stimulating scientific production in the field of allergology and clinical immunology through various activities, which include the call for grants for research work, scholarships, or internships for young allergists and the publishing of high-level scientific monographs. In addition, the presence of Spanish allergists in the sections and interest groups of the EAACI (*European Academy of Allergy and Clinical Immunology*) is increasing, which will result in an improvement in research by collaboration in groups. However, the assessment of the research work into healthcare is certainly scarce[14]so work must continue to strengthen the excellence, dynamism, and creativity of scientific development in this field.

Objectives

Driven by SEAIC's constant commitment to the pursuit of clinical excellence, this is the context in which the Specialty Forum was created, whose main mission includes reviewing the current situation for the future development of a strategic plan that allows allergists, both present and 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 the allergist and specialist nurses as professionals, which allows the specialty to be adapted to a constantly changing world

with new diagnostic and therapeutic opportunities identifying all of 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.

Methodology

The initiative was led by two coordinators supported by a panel composed of nine experts, all of whom belong to SEAIC, constituting a structured process composed of four 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 established issues, followed by subsequent validation of the results obtained.

Initial analysis of the situation of the specialty

The diagnosis of the current situation was structured around seven fundamental pillars, a series of questions of interest being raised in each of them to guide the process of defining challenges and future perspectives in the later phases, defined as 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 themes, points of interest, and questions raised is shown in **Table I** available in the online repository. These themes and discussion points were compiled by the two coordinators at the head of the initiative, and shared with the remaining members of the scientific committee in order for full reflection and to identify priority work points.

Identification of the work blocks

Once the thematic blocks and questions were shared with the scientific committee, a face-to-face meeting was held in which the main conclusions and points made by each member were presented. After a process of individual reflection and subsequent joint debate, ten thematic blocks considered to be of interest were identified and each of them was assigned a responsible coordinator and their corresponding working group as detailed in **Table II** available in the online repository.

Challenges, strategic objectives, and lines of action

Through the development of three face-to-face workshops, the most pressing problems with each of the thematic blocks raised were analysed, identifying the three 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 that, as far as possible, provide solutions applicable to clinical practice in the specific challenges. For this, each group worked individually on the assigned block and then briefly presented its conclusions to the other groups. Finally, the results obtained were compiled and shared with all of the participants for their 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, which was disseminated through the SEAIC website for completion by all interested members for a period of one month. A participation requirement was that respondents should have at least 5 years of experience in the specialty of allergology, thus excluding doctors in residence. The resolution of said survey assessed how much agreement with the proposed lines of action there was according to a scale from 1 to 10, with 1 being the maximum level of disagreement and 10 the maximum level of agreement, and the level of application priority 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 three 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 one representing the action with the highest priority.

The statistical processing of the data was executed on the IBM SPSS Statistics 20.0.0 software package for Windows.

Results

The items making up each of the thematic blocks submitted for evaluation, 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 and was answered by a total of 167 specialists. The participants presented an average of 18 years of experience, 72% being women. 29.3% of the respondents were heads of service, with the remaining 70.7% being attending doctors. 74% belong to referral hospitals, with the Regional Government of Madrid registering the highest percentage of participation with 26.9% of the answers obtained. A more detailed description of the sociodemographic characteristics is presented in **Table III** available in the online repository.

The results of the survey revealed that the participants showed a very high degree of agreement with the majority of proposed lines of action for each of the blocks worked on, the need to promote the presence of the allergist in multidisciplinary teams, valuing their specific competencies through clinical pathways that support them having the highest percentage of agreement (94.3%). The second highest agreement for an initiative was to encourage the participation of the allergist in clinical sessions of other relevant services and Hospital Commissions (e.g. Pharmacy and Therapeutics Commission, PROA), and vice versa (91.6%). The third was to generate accredited Clinical Practice Guidelines that guarantee a minimum level in all areas, criteria for referral of the complex patient, and setting up reference units for infrequent pathologies (91.4%).

Table 2 shows the degree of agreement reached for the 30 major lines of action is shown 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 globally,

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 specialisation, parallel to the service's superspecialisation (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, organisation, 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 that the participants showed a very high degree of agreement with the majority of the proposed lines of action for each of the blocks worked on, which is an indication of the homogeneity between the professionals of the specialty, that is, both doctors and nurses.

Of all the proposed lines of action, the one that obtained the greatest degree of agreement in overall terms was to promote the presence of the allergist in multidisciplinary teams, valuing their specific competencies through clinical routes that support them. If the latest data available on the national map and portfolio of specialty services are analysed, 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 on allergological-based diseases and the quality of life for patients, especially in those with moderate to severe disease[15,16], consequently encouraging the integration of the specialist allergist, strengthening its specific importance, which represents potential advantages in the comprehensive approach to the patient. However, in this context it should be noted that only 31% of current centres have monographic allergology units, the majority in allergy day hospitals or immunotherapy units, with only 15% relating to other, different, specific consultations.[5] In addition, at the moment there is only specific data on the operation of these severe asthma, urticaria, and immunotherapy units, but more types of specific unit are needed in Spain as well as the minimum requirements necessary for

their implementation, so presumably the process of integration of the allergist into the care circuit must be accompanied by a definition of these conditions, which consolidate it as a fundamental link in the management of patients with an immunity-based pathology.

On the other hand, it was decided as a priority line of action to improve the undergraduate and graduate training of the allergist and specialist nurse, identifying study plans in Spain and developing teaching projects with a robust approach. In teaching terms, it should be noted that the level of training of Spanish allergists is one of the best in the world thanks to the existence of a specific programme for the specialty in which, due to its multidisciplinary nature, various training rotations are carried out. In addition, official statistics show that 54% of the services have undergraduate teaching and 50% postgraduate teaching, with 44% of services performing MIR allergology teaching and 88% receiving rotating doctors from other specialties.[5] However, despite being officially recognised, the presence of allergology as a subject in the curricula of medicine degrees in the medical faculties of Spain is irregular and the number of tenured professors or professors accredited as tenured is very low, which constitutes one of the key challenges in the repositioning of the specialty and even more so considering that this situation is even worse in the training provided in nursing degrees. Added to this circumstance is that there is no accreditation in allergology at European level so one of the most immediate needs of the specialty is to achieve this homogeneity in the academic field, both at the undergraduate and postgraduate stage. Therefore, it is essential to promote a substantial improvement in the training plan for specialists in the future, not only to achieve visibility of the portfolio of services but also to ensure it is adapted to an environment undergoing constant change, incorporating complex *in vivo* and *in vitro* techniques as well as pathologies with an emerging incidence or complex nature, from the perspective of a multidisciplinary vision of the patient and synergies with other specialties. Promotion of research is undoubtedly another priority line expressed by specialists. This concern has already been addressed by the SEAIC, since it has carried out two research promotion plans among professionals in the sector in recent years.[14, 17] Nevertheless, although scientific production and participation in thematic networks of cooperative health research (RETICS) and Biomedical Research Networking Centres (CIBER) at the Carlos III Institute is all well and good, more effort is needed to maintain this trajectory.

Conclusions

If the results are interpreted together, the main actions to be implemented in the near future revolve around five fundamental points, which are the following:

- Promote the integration of the allergist in multidisciplinary teams and participation in relevant hospital commissions in order to showcase the value of their specific competences.
- Promote appropriate undergraduate and postgraduate training in allergology as well as in nursing degrees, 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 as well as therapeutic algorithms consolidating their use in normal practice and promoting the clinical development of the specialty.
- Offer a portfolio of services that incorporates new techniques and pathologies of an emerging or complex nature, backed by Clinical Practice Guidelines that define appropriate referral criteria.
- Finally, perform an analysis of the specific needs of each service that justifies the administration increasing technical and human resources.

These points should be analysed in detail by the SEAIC Board of Directors for their integration into the strategic plan and its translation into action as far as possible by short, medium, and longer term initiatives that definitively consolidate visibility and the future of the specialty.

Glossary

ARADyAL: Asthma, Adverse and Allergic Reactions. **CCAA:** Regional Governments. **CIBER:** Biomedical Research Networking Centre. **EAACI:** *European Academy of Allergy and Clinical Immunology*. **ISCIII:** Carlos III Health Institute. **PROA:** antibiotic use optimisation programme. **RESCAL:** Safety and Quality Recommendations in

Allergology. **RETICS**: Thematic Networks of Cooperative Health Research. **SEAIC**: Spanish Society of Allergology and Clinical Immunology. **SEMERGEN**: Spanish Society of Primary Care Physicians. **SEMFYC**: Spanish Society of Family and Community Medicine. **SEPAR**: Spanish Society of Pulmonology and Thoracic Surgery. **TAB**: basophil activation test.

Acknowledgements

The authors thank the members of the Spanish Society of Allergology and Immunology (SEAIC) for their participation in the Specialty Forum's validation survey. The project was sponsored by AstraZeneca Spain.

Conflict of interests

Dr.SASTRE reports personal fees from ASTRA ZENECA, personal fees from GSK, personal fees from LETI, personal fees from FAES, personal fees from SANOFI, personal fees from MUNDIPHARAMA, personal fees from NOVARTIS, outside the submitted work.

Dr. MONTORO LACOMBA reports personal fees from GSK, personal fees from ASTRA ZENECA, grants from NOVARTIS, personal fees from CHIESI, outside the submitted work.

Dr.Dávila reports personal fees from ALK, personal fees from GSK, personal fees from SANOFI, personal fees from ASTRA-ZENECA, personal fees from LETI, personal fees from ALLERGOMERCK, personal fees from CHIESI, personal fees from NOVARTIS, grants from THERMOFISHER, grants from STALLERGENES, outside the submitted work.

Dr. OLAGUIBEL reports grants from ASTRA ZENECA, personal fees from ASTRA ZENECA, personal fees from GSK, grants from SANOFI, outside the submitted work.

The remaining authors have nothing to declare.

Funding

AstraZeneca Spain.

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Table 1. Thematic blocks, challenges identified, and items valued in the population validation survey disseminated to SEAIC members.

| THEMATIC BLOCK | CHALLENGES | ITEMS |
|--|---|--|
| 1. Superspecialisation, multidisciplinary units, and change of the care model | 1.1: Lack of visibility of the specialty in hospitals | <ul style="list-style-type: none"> • Promote the presence of the allergist in multidisciplinary teams, leveraging their specific competencies through clinical pathways that support them. • Encourage the participation of the allergist in clinical sessions of other relevant services and Hospital Commissions (e.g. Pharmacy and Therapeutics Commission, PROA), and vice versa. • Demonstrate cost-effectiveness by calculating high impact interventions (e.g. interconsultations) and comprehensive approaches that avoids referrals to other specialists. • Prepare an annual report including the main milestones reached during the year. The Head of Service and a person responsible for supporting these functions prepare the report. • Develop a specialisation plan adapted to the needs of each centre, agreeing on the necessary monographic consultations (both |
| | 1.2: Absence of guidelines for adequate superspecialisation and organisation of monographic consultations | |

| | | |
|--|---|--|
| | 1.3: Lack of presence in the Primary Care field | <p>general and complex, or for emerging pathologies).</p> <ul style="list-style-type: none"> • Promote non-exclusive superspecialisation, including both complex patients and for more general allergic diseases. • Develop a patient referral algorithm, both internally and for other specialties. • Identify the scope of the consultations based on their severity, attending non-complex consultations in Primary Care and referring complex cases to the hospital. • Approach the specialty in the Primary Care field through value training of professionals involved in this field. |
| 2. Definition of services portfolio (pathologies) 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"> • Offer an updated and attractive portfolio of services by both the allergist and the nurse that leverages the availability of the most sophisticated techniques. • Incorporate complex <i>in vivo</i> and <i>in vitro</i> techniques (e.g. molecular diagnosis, TAB, etc.) and pathologies with an emerging incidence or complex nature. • Promote projects with the institutional support of scientific societies, and ensure they continue in the medium to long term. • Obtain the support of SEAIC in awarding prizes for innovative initiatives and quality professional work, and promote recognition of its support in scientific publications. • Present an analysis of the needs of each service to the administration that could justify an increase in human and technical resources. • Create alliances with the pharmaceutical industry as well as with related specialties through agreements that strengthen the role of the allergist in the management of immune-based pathologies. |
| | 2.2: Lack of knowledge and an evasive attitude in the management of emerging and complex pathologies with a possible or proven inflammatory or immunological basis | |
| | 2.3: Inadequate organisation 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: Existence of a great diversity and variety of immunotherapeutic treatments without the necessary standardisation and clinical validation | <ul style="list-style-type: none"> • Promote appropriate training in immunotherapy, adapted to different levels of care, consolidating and strengthening knowledge of subsidiary pathologies and developing algorithms that are included in the Clinical Practice Guidelines. • Implement the application of molecular and “omics” techniques in immunotherapy as well as biomarkers with diagnostic value, prognosis, and follow-up. • Increase the number of registered biological products and prioritise their use, establishing the minimum requirements that must be met according to their clinical relevance. • Restrict financing to biological products with proven efficacy only, rejecting the marketing of those who do not have an appropriate clinical development. • Promote the conducting of clinical trials in immunotherapy with a design adapted to the pathology of study as well as new |
| | 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 its | |

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| | management | indications and routes of administration, and publish the results. |
| 4. Nursing training and stabilisation | 4.1: Little undergraduate, postgraduate, and continuing allergology training | <ul style="list-style-type: none"> • Achieve the integration of nurses in the multidisciplinary team, not only at the healthcare level but also in terms of training, clinical management, organisation, and research. • Encourage the figure of an expert nurse through a nationally endorsed specialisation, and parallel to the superspecialisation of the service. • Adapt the agenda to the complexity of the consultations, encouraging the implementation of a personalised agenda for nursing. • Improve the undergraduate and postgraduate training of nurses through standardised programmes taught by expert professors collaborating in areas of interest. |
| | 4.2: Lack of development of the nursing staff's own competencies in the Allergology Service | |
| | 4.3: Lack of integration of nursing in the multidisciplinary team | |
| 5. Undergraduate and postgraduate training, and talent attraction | 5.1: Little presence of teachers and consequently little presence of teaching content in undergraduate training | <ul style="list-style-type: none"> • Develop a talent acquisition plan, facilitating access to specialty information through digital media and search engines (e.g. "choosing allergology") and encouraging contact with MIR intern academies. • To improve the undergraduate and graduate training of the allergist, identifying curricula in Spain and developing teaching projects with a robust approach. • Identify PDI allergists by categories, disseminating both accreditation figures and criteria in a general way and among SEAIC partners. |
| | 5.2: Unattractive specialty for future MIR interns (choice) | |
| | 5.3: Absence of talent acquisition programmes | |
| 6. Clinical practice homogenisation, accreditation, and recertification (services and professionals) | 6.1: Variability in clinical practice discredits the specialty | <ul style="list-style-type: none"> • Generate accredited Clinical Practice Guidelines that guarantee minimum requirements in all areas and complex patient referral criteria, creating reference units for infrequent pathologies. • Official agencies assign accreditation value to compliance with the Clinical Practice Guidelines. • Develop a training programme for new specialists and subspecialists based on the acquisition of assessable competencies that acts as the basis for implementing recertification. • Guarantee the unlinked accreditation of commercial interests, creating a registry of specialists and subspecialists accessible to the general population to ensure transparency of procedures. • Involve SEAIC and other official bodies (e.g. universities, official colleges) in the support and dissemination of allergology training as well as the recertification criteria and direction of monographic consultations. |
| | 6.2: Absence of records of specialists, or specialists in specific areas | |
| | 6.3: A recertification tool has not been developed by the Administration or the SEAIC | |
| | | <ul style="list-style-type: none"> • Include training in research methodology and languages, promoting the presentation of quality work in specialised congresses. |

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| 7. Research professionalisation | 7.1: Lack of critical mass of research staff in the allergological community | <ul style="list-style-type: none"> Identify emerging researchers and promote aid for their training (e.g. scholarships with the ISCIII, reduced congress fees, rotations abroad) and integration into committees. Organise multidisciplinary forums for the transfer of ideas between universities, pharmaceutical industry, and allergy researchers. Promote crowd sourcing and the expansion of resources of current networks (e.g. ARADyAL) to generate links with other national/international societies and groups (e.g. EAACI). Create a Biomedical Research Networking Centre (CIBER) for allergic diseases as well as a directory of centres of excellence, and promote the presentation of scientific sessions by these centres at the SEAIC congress. Identify research groups that are likely to join institutes, generating a line of communication between them through conferences and forums. Incorporate basic researchers from other branches of knowledge (e.g. biochemists, pharmacists) into the SEAIC research strategy to increase its spectrum of action. Create a commission that advises the SEAIC Board of Directors on research and is responsible for the development of Clinical Practice Guidelines, consensus documents, and meta-analysis. |
| | 7.2: Lack of presence in the decision-making nuclei of the research policy | |
| | 7.3: Lack of clear research strategy at SEAIC | |
| 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"> Promote uniform education of patients through digital media, brochures, and infographics with real usefulness, with an attractive design incorporating a logo that identifies the credentials of the allergist. Identify the RESCAL level corresponding to each service and make it known to the general population, explaining its implication on quality and safety. Promote synergies with patient associations through SEAIC and regional societies, proposing a relationship with them. Convene an annual prize/scholarship for projects presented by patient associations, which allows analysis of their real needs and providing customised solutions. |
| | 8.2: Lack of unanimity in clinical criteria and service portfolios, including shortage of educational classrooms | |
| | 8.3: Small number of patient associations, poorly professionalised, and with a local scope of action | |
| | 9.1: The allergology specialty has little visibility | <ul style="list-style-type: none"> With the support of the hospital press office, design a visibility plan adapted to the needs of each centre, revisable periodically. Increase the representation of the specialty in both national and international institutions, promoting the exchange of interns/residents and other specialists. Encourage the use of telemedicine or virtual consultations, depending on the complexity of the pathology, providing |
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| 9. Communication strategies, new technologies, and internationalisation | 9.2: Little implementation of new technologies | <p>appropriate training for this at all levels involved (doctor, nurse, and patient).</p> <ul style="list-style-type: none"> • Develop tools for self-management and deferred communication, actively involving the committees/working groups in their real-world applicability. • 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. • Get SEAIC to lead and finance the creation of Big Data platforms and the use of new technologies. |
| 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"> • Hire a consultant to analyse the service portfolio and the cost by centre and area, establishing the decent profit as a percentage of each procedure. • Compare the scales applied by the insurers, between them, and with respect to the ideals, and demand that these be reviewed annually according to the CPI. • Create a commission that serves as an interlocutor with the insurers, working on an annual explanatory report of the services sent to the insurers for review. • Conduct an annual national survey that assesses the degree of satisfaction of private allergists, and publicise the results. |
| | 10.2: Lack of cohesion between specialist allergists in private practice | <ul style="list-style-type: none"> • Create a specific commission 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. • Have an updated census of private allergists and create a platform for information exchange and visibility of centres and consultations. |
| | 10.3: Private allergology is undervalued by public allergology | <ul style="list-style-type: none"> • Promote a homogeneous collection of information on procedures and quality of care, preparing a disseminable report and surveys that assess the degree of implementation of the measures proposed. • Encourage communication between private and public centres, favouring the holding of clinical sessions and mixed training activities. • Encourage the integration of the private allergist in the structure of the SEAIC through different figures (e.g. relationships in all of the Boards of Directors, Development Committee, and Professional Practice). • Create an online platform in the private sector, preferably hosted on the SEAIC website. |

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 (%) |
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| Subset 1 | | |
| 1 | BLOCK 1. Promote the presence of the allergist in multidisciplinary teams, leveraging their specific competencies through clinical pathways that support them. | 93.4 |
| 2 | BLOCK 1. Encourage the participation of the allergist in clinical sessions of other relevant services and Hospital Commissions (e.g. Pharmacy and Therapeutics Commission, 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 pathologies. | 91.4 |
| 4 | BLOCK 3. Promote appropriate training in immunotherapy, adapted to different levels of care, consolidating and strengthening the knowledge of subsidiary pathologies and developing algorithms that are included in the Clinical Practice Guidelines. | 91.2 |
| 5 | BLOCK 3. Promote the conducting of clinical trials in immunotherapy with a design adapted to the pathology of 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 <i>in vivo</i> and <i>in vitro</i> techniques (e.g. molecular diagnosis, TAB, etc.) and pathologies with an emerging incidence or complex nature. | 90.1 |
| 8 | BLOCK 2. Present the administration with an analysis of the needs of each service that could justify an increase in technical and human resources. | 89.4 |
| 9 | BLOCK 5. To 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 (e.g. universities, official colleges) in the support and dissemination of allergology training as well as the recertification criteria and direction of monographic consultations. | 87.6 |
| Subset 2 | | |
| 11 | BLOCK 7. Identify emerging researchers and promote aid for their training (e.g. scholarships with the ISCIII, reduced congress fees, rotations abroad) and integration into committees. | 87.0 |

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| 12 | BLOCK 3. Implement the application of molecular and “omics” techniques in immunotherapy as well as biomarkers with diagnostic value, prognosis, and follow-up. | 86.9 |
| 13 | BLOCK 9. Increase the representation of the specialty in both national and international institutions promoting the exchange of interns/residents and other specialists. | 86.7 |
| 14 | BLOCK 1. Demonstrate cost-effectiveness by calculating high impact interventions (e.g. interconsultations) and comprehensive approaches that avoids referrals to other specialists. | 83.8 |
| 15 | BLOCK 4. Achieve the integration of nurses in the multidisciplinary team not only at healthcare level but also in terms of training, clinical management, organisation, and research. | 83.7 |
| 16 | BLOCK 7. Include training in research methodology and the English language, committing to the presentation of quality work in specialised congresses. | 83.5 |
| 17 | BLOCK 7. Create a Biomedical Research Networking Centre (CIBER) for allergic diseases as well as a directory of centres of excellence, and promote the presentation of scientific sessions by these centres at the SEAIC congress. | 83.3 |
| 18 | BLOCK 4. Improve the undergraduate and postgraduate training of nurses through standardised programmes taught by expert professors collaborating in areas of interest. | 83.0 |
| 19 | BLOCK 2. Promote projects with regional societies and other related scientific societies (e.g. SEMERGEN, SEMFYC, SEPAR), and for these to continue in the medium to long term. | 82.2 |
| 20 | BLOCK 3. Restrict the inclusion in the Pharmacotherapeutic Guide to biological products with proven efficacy only, rejecting the marketing and sale of those that do not have appropriate clinical development. | 82.2 |
| Subset 3 | | |
| 21 | BLOCK 7. Organise multidisciplinary forums for the transfer of ideas between universities, pharmaceutical industry, and allergy researchers. | 81.9 |
| 22 | BLOCK 1. Approach the specialty in the Primary Care field through value training of professionals involved in this field. | 81.8 |
| 23 | BLOCK 10. Compare the scales applied by the insurers, between them, and with respect to the 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 specialisation, parallel to the superspecialisation 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 centre and area, establishing the percentage of decent | 80.4 |

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| | profit by procedure. | |
| 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 with any training (e.g. biochemists, pharmacists) into the SEAIC research strategy to increase its spectrum of action. | 79.7 |
| 29 | BLOCK 6. Develop a training programme 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 commission that advises the SEAIC Board of Directors on research and is responsible for the development of Clinical Practice Guidelines, consensus documents, and meta-analysis. | 79.0 |

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 pathologies, and developing algorithms that are included in the 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 pathologies. | 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 <i>in vivo</i> and <i>in vitro</i> techniques (e.g. molecular diagnosis, TAB, etc.) and pathologies 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 Commissions (e.g. Pharmacy and Therapeutics Commission, PROA), and vice versa. | 1.83 |
| 8 | BLOCK 6. Involve SEAIC and other official bodies (e.g. universities, official colleges) in the support and dissemination of allergology training as well as the recertification criteria and direction of monographic consultations. | 3.14 |
| 9 | BLOCK 3. Promote the conducting of clinical trials in immunotherapy using a design adapted to the pathology of 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. Achieve the integration of nurses in the multidisciplinary team not only at healthcare level but also in terms of training, clinical management, organisation, and research. | 1.42 |

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| 12 | BLOCK 9. Increase the representation of the specialty in both national and international institutions 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 diagnostic value, prognosis, and follow-up. | 1.71 |
| 14 | BLOCK 7. Identify emerging researchers and promote aid for their training (e.g. scholarships with the ISCIII, reduced congress fees, rotations abroad) and integration into committees. | 1.89 |
| 15 | BLOCK 2. Promote projects with regional societies and other related scientific societies (e.g. SEMERGEN, SEMFYC, SEPAR), and for these to continue in the medium to long term. | 2.37 |
| 16 | BLOCK 1. Demonstrate cost-effectiveness by calculating high impact interventions (e.g. interconsultations) and comprehensive approach that avoids referrals to other specialists. | 2.45 |
| 17 | BLOCK 4. Improve undergraduate and postgraduate training of nurses through standardised programmes 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 specialised 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 do not have appropriate clinical development. | 3.02 |
| 20 | BLOCK 7. Create a Biomedical Research Networking Centre (CIBER) for allergic diseases as well as a directory of centres of excellence, and promote the presentation of scientific sessions by these centres at the SEAIC congress. | 3.86 |
| Subset 3 | | |
| 21 | BLOCK 4. Encourage the idea of an expert nurse through a nationally endorsed specialisation, parallel to the superspecialisation of the service. | 1.34 |
| 22 | BLOCK 10. Compare the scales applied by the insurers, between them, and with respect to the 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 centre and area, establishing the percentage of decent profit by procedure. | 2.07 |
| 24 | BLOCK 6. Develop a training programme 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. Organise multidisciplinary forums for the transfer of ideas between universities, pharmaceutical industry, and allergy researchers. | 2.61 |
| 26 | BLOCK 6. Guarantee the unlinked accreditation of commercial interests, creating a registry of specialists and subspecialists | 3.01 |

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| | accessible to the general population to ensure the transparency of the procedures. | |
| 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 of any training (e.g. biochemists, pharmacists) into the SEIAC research strategy to increase its spectrum of action. | 5.37 |
| 29 | BLOCK 7. Create a commission that advises the SEAIC Board of Directors on research and is responsible for the development of Clinical Practice Guidelines, consensus documents, and meta-analysis. | 5.85 |
| 30 | BLOCK 1. Approach the specialty to the Primary Care field through value training for professionals involved in this field. | 6.45 |

Figure 1. Ratio of allergist specialists per 100,000 inhabitants. Public Employment in the Spanish National Health System 2018.

