



Farmacia HOSPITALARIA

Órgano oficial de expresión científica de la Sociedad Española de Farmacia Hospitalaria

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Special article

[Translated article] Hospital pharmacy towards 2030

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ARTICLE INFO

Article history:

Received 15 February 2024

Accepted 3 May 2024

Keywords:

Hospital Pharmacy Services

Strategic planning

Leadership

A B S T R A C T

Hospital Pharmacy is today a profession marked by therapeutic advances, with a proactive attitude, focussed on people and their health. The evolution of processes is constant, with the full presence of digitalisation, robotisation, and even artificial intelligence, in an environment that also requires the efficient and sustainable use of these tools. In this context, it is necessary to have a roadmap that guides the advancement of the profession and Hospital Pharmacy Services.

Continuing with the philosophy of the 2020 initiative which, with the slogan “Towards the future, safely”, defined the strategic lines to advance in the improvement of Hospital Pharmacy practice, the Spanish Society of Hospital Pharmacy wanted to raise the challenges the profession is currently facing and with a view to 2030.

With this strategic planning objective, 20 challenges have been identified and developed, which cover the different areas of action and involvement of Hospital Pharmacy and which cover clinical activities, transversal aspects, training, and research, as well as areas related to people and to the organisations or health systems. For each of them, the objectives, standards, tools, and resources have been defined. It is also planned to provide tools that facilitate monitoring of implementation and the impact on the profession, patients, and the environment.

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La Farmacia Hospitalaria rumbo al 2030

R E S U M E N

La Farmacia Hospitalaria es hoy una profesión marcada por los avances terapéuticos, con una actitud proactiva, centrada en las personas y en su salud. La evolución de los procesos es constante, con plena presencia de la digitalización, la robotización e incluso de la inteligencia artificial, en un entorno que además exige el uso eficiente y sostenible de estas herramientas. En este contexto, es necesario contar con una hoja de ruta que guíe el avance de la profesión y de los servicios de farmacia hospitalaria.

Siguiendo con la filosofía de la iniciativa 2020 que, con el lema “Hacia el futuro, con seguridad”, definió las líneas estratégicas para avanzar en la mejora de la práctica de la Farmacia Hospitalaria, la Sociedad Española de Farmacia Hospitalaria ha querido plantear los retos a los que se enfrenta la profesión actualmente y con una mirada hacia el 2030.

Con este objetivo de planificación estratégica se han identificado y desarrollado 20 retos, que cubren las distintas áreas de actuación e implicación de la Farmacia Hospitalaria y que abarcan aspectos asistenciales, transversales, formación e investigación, así como áreas relacionadas con las personas y con las propias organizaciones o sistemas de salud. Para cada uno de ellos se han definido los objetivos, estándares, herramientas

Palabras clave:

Servicios de farmacia hospitalaria

Planificación estratégica

Liderazgo

DOI of original article: <https://doi.org/10.1016/j.farma.2024.05.004>.

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<https://doi.org/10.1016/j.farma.2024.06.008>

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y recursos. También está previsto proporcionar herramientas que faciliten el seguimiento de la implementación y del impacto sobre la profesión, los pacientes y el entorno.

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Introduction

Hospital Pharmacy, as originally defined, is a pharmaceutical speciality concerned with serving the pharmaceutical needs of the population through various activities aimed at ensuring the appropriate, safe, and cost-effective use of medications and medical devices for the benefit of patients.¹ The core of this definition remains entirely valid. However, our profession has constantly evolved over recent decades and will continue to do so, adapting to the needs and demands of patients, the public, and healthcare organisations.²

In the early days, the main activities of hospital pharmacists included providing information about medications, selecting them, medication procurement, storage, preservation, dispensing, distribution, and pharmacotechnics. Over time, the clinical aspects were expanded to include activities such as the monitoring of artificial nutrition, clinical pharmacokinetics, and clinical trials. At the same time, leadership and management activities became increasingly relevant.²

In recent years, specialisation in pharmaceutical care has broadened in several areas, improving the care of special populations, such as oncology patients, paediatric patients, and outpatients treated with hospital-prescribed medications. Even more recently, this trend has also extended to areas such as infectious diseases, critical care, and emergencies. These developments in the activities of specialist pharmacists have been accompanied by changes in technological resources and innovation that impact healthcare, reflecting the various advances taking place in our environment.³

Currently, we find ourselves in a profession characterised by therapeutic advances, focussed on providing proactive, collaborative, and humanised care centred on people and their health. We are witnessing a continuous reformulation of processes that integrate digitalisation, robotics, and artificial intelligence, along with the challenge of using all these tools efficiently and sustainably. Against this background, it is essential to have available a roadmap to advance the profession and Hospital Pharmacy Services (HPSS).

The importance of having a roadmap. Initiatives in our environment

Strategic planning is increasingly common in organisations, including healthcare systems, hospital centres, or clinical services and units. A roadmap provides an orderly and systematic way of outlining the steps needed to move from the current situation to the desired future situation.^{4,5}

In a constantly changing environment, it is crucial to plan the strategy to be followed. We now find ourselves in an environment previously described by experts as "VUCA" (volatile, uncertain, complex, and ambiguous), but which the coronavirus pandemic transformed into a "BANI" (brittle, anxious, non-linear, and incomprehensible) world.⁶ In this setting, informed individuals and competent trained professionals are caught up in a seemingly unstoppable technological and knowledge revolution, in the midst of complex health system funding models, and with the concept of "One Health" more present than ever.

Aware of the importance of planning for progress, in 2008, a group of hospital pharmacists worked on the Initiative 2020 project. Under the slogan "Towards the future, safely", they defined 6 strategic lines and the keys to progress in improving Hospital Pharmacy practice and healthcare systems. The project was presented at the 53rd National Congress of the Spanish Society of Hospital Pharmacy (SEFH) and became an open and shared tool for all Hospital Pharmacy professionals.⁷

Based on the general principles of strategic planning, Initiative 2020 was articulated by defining objectives for each of the 6 strategic lines, totalling 28 in all. Information on the baseline situation for the year 2010 was provided along with cross-references and literature of interest for each objective. The aim was to significantly improve HPSSs in 6 areas⁷:

1. Organisational development: To incorporate new technologies to improve the organisation and quality of pharmacy services, as well as the safety and comprehensive care of patients in the pharmacotherapeutic process.
2. Scientific evidence in clinical practice: To increase the degree to which hospital pharmacists apply the principles of evidence-based medicine to improve individualised pharmacotherapy.
3. Safety practices: To lead, develop, and implement actions to improve the safety of the system for the use of medications in hospitals.
4. Pharmaceutical care: To increase the involvement of pharmacists in optimising individualised pharmacotherapy.
5. Teaching: To develop individualised professional development programmes for pharmacists and pharmacy service technicians, and to expand teacher-training programmes.
6. Research: To increase the scientific contributions of hospital pharmacists.

Initiative 2020 has been widely used by HPSSs to deploy their strategic lines and objectives. Its scope has not been systematically measured, but the White Paper on Hospital Pharmacy—which outlines the situation of the services in terms of infrastructure, resources, and activity—describes the advances achieved.⁸ Thus, Table 1 shows some of the objectives of Initiative 2020, the baseline situation reported in 2010, and the situation observed in 2022.^{7,8}

Another example of strategic planning, which served as a model or inspiration for Initiative 2020, was the 2015 Initiative of the American Society of Health-System Pharmacists (ASHP), which later evolved into the still current ASHP Practice Advancement Initiative 2030 (PAI 2030).^{9,10} The 2015 Initiative was conceived as a collaborative effort to improve pharmacy practice in US hospitals and health systems, and included 6 goals and 31 specific objectives, which were expected to be achieved by 2015. The initiative as a whole was based on the expectation that hospital pharmacists would shift their activities toward direct patient care and that pharmacy services would focus on continuous quality improvement.

PAI 2030, which is still underway, provides tools and resources to advance the profession over the next decade, with the aim of focussing change at a local level and providing resources to ensure that the profession responds to the needs of the future and various models of patient care.¹¹ The initiative is structured into 5 areas or domains: patient-centred care; the role, education, and training of pharmacy technicians (PTs); the role, education, and training of pharmacists; technology and data science; and leadership in medication use and safety. It includes 59 recommendations focussing on practices, organisations, and the profession, and identifies the following issues as priorities for change:

- Optimise care via comprehensive pharmacotherapeutic management provided by pharmacists.
- Integrate pharmacy activities for cost-effective care.
- Increase public health opportunities.
- Advance PT roles.
- Incorporate personalised therapies.
- Harness data analytics to improve patient health.

Table 1

Examples of 2020 targets, the baseline situation reported in 2010, and the situation observed in 2022.

Strategic line	Objective 2020	Baseline 2010 (%)	Situation observed in 2022
Organisational development	80% of HPSs will have integrated process management IT systems in place	9.5	Achieved
	80% of hospitals will have automated systems for the storing and dispensing of medications in HPSs	40.1	Achieved
	50% of HPSs will have a quality management system in place, certified or accredited by an appropriately accredited external company	22.5	Achieved
Scientific evidence in clinical practice	In 100% of hospitals, HPSs will actively participate in the evaluation and selection of medications based on scientific evidence	73.4	Achieved
Safety practices	In 100% of hospitals, HPSs will actively participate in the development and maintenance of risk management programmes for the prevention of medication errors	21.2	Achieved
Pharmaceutical care	In 80% of hospitals, pharmacists will regularly work directly in in-patient units, and participate in the prescribing decisions for at least 25% of in-patients.	11.3	Achieved
Teaching	In 80% of hospitals, HPSs will have at least 1 pharmacist with BPS or similar accreditation	31.5	Achieved

Source: Spanish Society of Hospital Pharmacy^{7,8}; HPS, Hospital Pharmacy Service; BPS, Board of Pharmacy Specialties.

The PAI 2030 project also identifies 5 main initiatives (focussed initiatives) within the scope of the 5 domains mentioned, each with an objective and measurable outcomes. It also includes success stories, resources for students and teachers, periodic reports, and self-assessment tools.

The Spanish Society of Hospital Pharmacy 2030 project

This national and international backdrop, ongoing advances in Hospital Pharmacy, and an ever-changing healthcare ecosystem prompted the development of the 2030 project within the SEFH. In line with the philosophy of Initiative 2020, the aim of the 2030 project is to provide pharmacy services with an updated roadmap to improve Hospital Pharmacy practice in our environment. It is important to emphasise that the project has been designed from the outset to be dynamic and able to adapt to and incorporate changes as they occur.

The aim of the SEFH 2030 project is to establish strategic lines and characterise key challenges that will facilitate advancements in improving Hospital Pharmacy practice and health systems; it also aims to propose resources and action plans that can help in the implementation and monitoring process. In this sense, work has been done to help all pharmacy services—regardless of their resources and the type of hospital to which they belong—to develop and advance in line with the needs of patients and the environment.

The project was developed through the creation of a coordinating group and a working team made up of colleagues from various pharmacy services and experts from different fields of knowledge. To characterise the challenges, the working team was divided into different groups, with each group concentrating on 1 or 2 of them, with other professionals providing guidance or advice as required.

As a starting point, in the initial phase, the 30 SEFH working groups were consulted regarding the identification of the challenges facing pharmacy services in the coming years. From this point onward, after reviewing the strategic lines and the degree of achievement of the objectives of the 2020 group, the coordinating group developed a proposal and selection process that identified a total of 20 challenges for further characterisation. Table 2 shows the 20 challenges that form part of the project.

The challenges identified and characterised cover the different areas of action and involvement within Hospital Pharmacy, envisioning its evolution and potential for the upcoming years. The complete document is available for consultation.¹² These challenges encompass aspects of healthcare tasks, including the participation of patients in multidisciplinary teams through the use of integration models, the healthcare continuum, therapeutic optimisation, and individualisation, the development and monitoring of advanced therapies, and the

determination of pharmacotherapeutic indications and appropriateness. The challenges also relate to multidisciplinary activities, such as drug evaluation and positioning, clinical safety, and drug development and manufacturing.

The project addresses training and research as pillars of development and drivers of change, and includes challenges related to people (professionals and the public), addressing aspects of well-being and development, technician training, humanisation of healthcare, and connections between Hospital Pharmacy, patients, and the community. Finally, the project also addresses challenges focussed on the healthcare organisations or systems themselves, such as digital transformation and innovation, local partnerships, readiness for emerging health problems, corporate social responsibility, integration of sustainable development goals, and the sustainability of the healthcare system itself.

The following elements were defined when characterising each challenge:

- Definition of the challenge.
- Objectives: Oriented from 3 perspectives (professional, patient, environmental).
- Standards.
- Tools and resources: Structured by training, research, technology, and human resource and process management.
- Scientific evidence and success stories.

The objectives attempt to answer the following question: What must be done to make it happen, and bring together the actions considered necessary to advance from the current situation to the desired future state. The standards address the question: How are we going to do it? They bring together a set of proposals for achieving the desired situation by 2030. Both the objectives and the standards have been proposed taking into account the diversity of our healthcare system and the differences between the different hospitals and their pharmacy services.

By way of example, we now outline some elements of the challenge of clinical safety—one of the pillars of our profession—in accordance with the guidelines of the World Health Organisation, which considers patient safety a fundamental right in healthcare.¹³ In this context and with this vision of the present and the future, the challenge of leading clinical safety programmes and activities is taken on, such that hospital pharmacists are reference specialists in the development and implementation of practices focussed on patient safety.

The objectives are to have a management plan for improving clinical safety, with a particular focus on medication; to involve patients in aspects related to improving clinical safety; and to ensure that hospital pharmacists are seen as reference specialists for clinical safety by

Table 2

Challenges of the Spanish Society of Hospital Pharmacy 2030 project (challenges, definitions, and objectives).

- **Challenge 1. Active participation in the patient care process through integration in multidisciplinary teams and care units.** *HPs actively participate in decision-making regarding the patient's pharmacotherapeutic process through a collaborative and complementary approach, contributing knowledge based on high-quality scientific evidence and on experience with various healthcare professionals who share the same objective of improving health outcomes.*
- **Objectives:** To achieve the best clinical and humanistic health outcomes for patients, their environment, and society at large, while improving the quality of the care process, its harmonisation, equity in decision-making, and the efficiency of resource management.
- To provide access to high-quality pharmacotherapy to obtain better clinical outcomes in terms of effectiveness, safety, and measures of quality of life, satisfaction, and patient experience.
- To foster greater involvement, commitment, and accountability among HPs in the care process, promote a close relationship with patients and the care team, and share structural, functional, and organisational requirements with other healthcare professionals involved.
- To increase the visibility of Hospital Pharmacy.
- **Challenge 2. A culture of continuous education and training as pillars of professional development within HPSS.** *Training and education activities are implemented, focussing on the needs of the environment (professionals, patients, society), which enable the internalisation of knowledge, techniques, and skills specific to the speciality to ensure excellent quality of healthcare and comprehensive, efficient care.*
- **Objectives:** To define a continuous professional development plan based on competencies for HPS professionals, including basic and cross-disciplinary training, tailored to meet the specific job requirements of each pharmacist.
- To implement a quality management plan for teaching that incorporates regular assessments of professional knowledge and skills.
- Develop the teaching aspect of all HPS professionals, integrating teaching into daily activities.
- **Challenge 3. Guarantee continuity of pharmaceutical care throughout the care process.** *Pharmacists specialising in Hospital Pharmacy will provide cross-disciplinary, comprehensive, and integrated PC throughout the patient care process.*
- **Objectives:** As an integral part of the care team, the HPS aims to contribute to the effective, safe, and efficient use of medications at each level and area of care that patients occupy, and in their transitions between these areas. This includes providing person-centred pharmaceutical care that is visible, accessible to both patients and professionals, and incorporated into their portfolio of services.
- To involve, inform, and educate patients and caregivers in decision-making on issues related to continuity, safety, adherence, appropriateness, and optimal use of medications and other pharmaceutical products to achieve the established therapeutic goals.
- To promote and make visible the figure of the "consulting specialty pharmacist" in each healthcare setting, strengthen PC, and establish 2-way communication between patients, carers, and other professionals.
- **Challenge 4. Therapeutic assessment, positioning, and protocolisation as the basis of pharmaceutical care.** *HPSS lead the continuous process of drug evaluation, positioning, and protocolisation with the aim of adding value, applying it to clinical pharmaceutical practice, and helping to achieve the best health outcomes and efficiencies that need to be measured and incorporated into the process.*
- **Objectives:** To ensure that all HPs utilise drug evaluation in developing protocols and guidelines, and in selecting the best treatment for each patient.
- To measure and analyse health outcomes and drug efficiency, including PROM (Patient-Reported Outcome Measures) and data sharing, publishing and incorporating findings into ongoing drug evaluation.
- To ensure effective patient-friendly communication related to the evaluation and selection of different treatments.
- **Challenge 5. Research culture as a driver of change.** *Research is integrated into professional performance as an essential, continuous, and necessary activity, focussed on outcomes and the improvement of care or teaching processes.*
- **Objectives:** To include research in the strategic plan of each HPS, adapted to its characteristics and activities, with defined lines of research and a research roadmap for HPS professionals (doctoral programmes and their continuation).
- To strengthen training in basic research methodology and critical reading, database analysis and management tools, and new technologies based on artificial intelligence.
- To establish links and partnerships with institutions to facilitate the acquisition of resources (material, human, methodological) and support for the development of research activities.
- To involve the public/community in the research projects in which HPSS participate.
- **Challenge 6. Promote the empowerment and training of PTs.** *PTs are empowered to conduct tasks delegated by HPs with highest guarantees of quality, safety, and efficiency.*
- **Objectives:** To ensure that PTs are co-participants in patient outcomes through their involvement in the tasks assigned to them.
- To train and equip PTs across all areas of pharmacy services by specialising and complementing their academic training.
- To integrate PTs into the hospital environment, multidisciplinary teams, and with other healthcare professionals.
- **Challenge 7. The well-being and development of pharmacy professionals.** *We care for the physical and emotional health of each individual and the team by providing a welcoming environment that cultivates opportunities for personal and professional growth.*
- **Objectives:** To promote the implementation of a human resources management policy in HPSS that contributes to the development of horizontal leadership and appropriate planning of individual performance, encourages training and professional development, and ensures the well-being and safety of each individual.
- **Challenge 8. Incorporate tools to optimise and individualise pharmacotherapy.** *HPSS integrate knowledge of drug pharmacokinetics and pharmacodynamics with insights derived from recent advances in molecular biology, advanced therapies, and body composition, to guide HPs in therapeutic decision-making, even before treatment begins, with the ultimate goal of achieving better health outcomes for the patient.*
- **Objectives:** To assess patients from the clinical point of view, optimise therapeutic and humanistic effects, and minimise toxicity in order to provide individualised care tailored to patient preferences and their environment.
- To ensure that HPSS lead the incorporation of tools for optimising and individualising pharmacotherapy in daily healthcare practice.
- To optimise processes to achieve more efficient and safer outcomes in relation to the available alternatives, contributing to the sustainability and quality of healthcare.
- To strengthen external links with regulatory agencies, universities, and scientific societies, as well as public–private collaboration, among others, including the development of outcome monitoring systems and population-based predictive models based on artificial intelligence and other technologies. This objective aims to democratise knowledge and enhance access to these tools.
- **Challenge 9. Advancing the digital transformation of Hospital Pharmacy.** *Digital technologies are dynamically implemented in HPSS to enable the effective improvement of clinical practice patterns and knowledge management, with the aim of delivering value to patients, the healthcare system, and society.*
- **Objectives:** To harness the opportunities offered by digital tools to empower patients and provide them with more humanised pharmaceutical care based on their needs and expectations.
- To increase the visibility and influence of Hospital Pharmacy for patients, the healthcare system, and society.
- To strengthen and promote digital literacy training for both patients and professionals.
- To use digital resources to increase safety, effectiveness, and efficiency in the use of medications and medical devices.
- To promote digital health research and data analytics to measure health outcomes.
- **Challenge 10. Lead clinical safety programmes and activities.** *HPs are leaders and reference specialists in developing and implementing practices focussed on patient safety.*
- **Objectives:** To have a clinical safety improvement management plan in place with a particular focus on medication.
- To involve patients in aspects related to improving clinical safety.
- To ensure that hospital pharmacists are considered the reference experts in clinical safety by patients, healthcare professionals, managers, and health authorities.
- **Challenge 11. Commitment to healthcare humanisation principles and improving people's experience.** *Commitment to a care model designed and implemented with the active participation of individuals, bearing in mind their real needs and expectations, while ensuring the application of the humanisation principles of the SEFH.*
- **Objectives:** To improve the experience of patients and professionals within the scope of the functions and responsibilities of HPSS.
- To include humanisation within the strategic plan of HPSS.

(continued on next page)

- To cultivate an environment that contributes to improving health outcomes.
- **Challenge 12. Connecting Hospital Pharmacy with patients and the community.** *Visibility and accessibility of HPs as experts in pharmacotherapy, connecting with the needs of patients and the community.*
- **Objectives:** To define the image and develop and strengthen the reputation of HPSS.
- To establish communication mechanisms with patients and the community.
- To detect patients' needs and expectations and establish adaptive actions and mechanisms to respond to them.
- To design and incorporate new solutions to improve patient and citizen access to HPs.
- **Challenge 13. Strategic links between Hospital Pharmacy and its environment.** *HPSS develop strategies to generate partnerships and synergies with stakeholders that enable recognition and contribute to the visibility and professional development of HPs as reference specialists in the pharmacotherapeutic process.*
- **Objectives:** To define the image and develop and strengthen the reputation of HPSS in the health sector.
- To identify the stakeholders, organisations, and people who could be involved in strategic partnerships to promote the development of HPSS, always taking into account the key players.
- To develop a strategy for environmental relationships, set clear objectives, establish a roadmap for achieving them, and conduct continuous monitoring.
- To expand and strengthen relationships with other healthcare and non-healthcare professionals, both within and outside the hospital ecosystem.
- **Challenge 14. Prepared for emerging health issues.** *To lead and promote the activities involved in handling, preparing, and manufacturing medications, medical devices, and research products within any healthcare setting, independently of the pharmaceutical industry. This includes ensuring quality and traceability throughout the product cycle and that of the final product, as well as the safety of patients, caregivers, handlers, and staff administering treatments, while providing them with adequate information. The efficiency of the process and the application of environmental sustainability measures will be optimized.*
- **Objectives:** To adhere to the Guide to Good Practices for the Preparation of Medications in HPSS, or any other subsequent document that must be followed. To promote adherence to GMP in those situations where it is required.
- To provide information and training to patients and carers, thus ensuring their involvement in the correct use and handling of the medications they use.
- To promote research into the handling, preparation, and manufacture of medications and medical devices that support individualised pharmacotherapy and patient access to treatments for clinical situations not covered by the pharmaceutical industry.
- To encourage HPSS to handle, prepare, and manufacture medications for third parties.
- To increase resources and collaboration for research the compatibility and stability of medications suitable for clinical practice.
- **Challenge 15. Enhance drug manufacturing and preparation activities.** *HPSS are prepared to deal with EIDs, to ensure that they can meet the healthcare, teaching, and research needs for which they are responsible when these needs are at risk. To support and collaborate with other stakeholders involved in the development of innovative actions to improve and ensure the pharmacotherapeutic process for patients, adapting to emerging needs as they arise.*
- **Objectives:** Facilitate HPs as leaders and reference experts in ensuring the pharmacotherapeutic process of patients under their responsibility during EIDs.
- To create an ecosystem to foster the development of innovative solutions that facilitate the functioning of the basic activities of HPSS.
- To identify and apply the facilitating elements that can help us in the management of EIDs.
- To develop knowledge, competences, and skills that enable us to be prepared to deal with EIDs.
- To ensure that HPS professionals have the appropriate resources and tools to provide patient care and protect their own health and safety during EIDS.
- To have contingency plans in place.
- **Challenge 16. Promote corporate social responsibility and align HPS activities with the Sustainable Development Goals.** *The SEFH and HPSS are aligned and demonstrate their commitment and active participation toward the environment and society as a whole, of which we are a part. As a result, their objectives and activities are aligned with the SDGs of the 2030 agenda, acting in accordance with the ESG (environmental, social, governance) criteria within our sphere of responsibility. It is a priority to work toward achieving climate neutrality and to minimise the environmental impact of professional activities related to Hospital Pharmacy and the use of medications in its area of responsibility.*
- **Objectives:** To analyse which SDGs we can influence through our work, in order to contribute to developments that meet current needs without compromising the ability of future generations to meet their needs.
- To ensure that HPs act as leaders and are considered reference specialists in all matters relating to the environmental impact of medications and medical devices, waste management, and the promotion of recycling packaging materials where applicable.
- To guarantee the rational use of material resources, medical devices, and medications to minimise environmental impact and contribute to climate neutrality, defined as achieving a balance between greenhouse gas emissions and their removal by the planet's natural absorption processes.
- To understand the carbon footprint in the value chain of HPS activities, as well as in the use of medications. To include the social perspective inherent to the SDGs and the SEFH Adherence to the Global Compact document, developing it through the activities for which HPSS are responsible.
- To ensure the application of governance criteria (integrity, ethics, transparency, etc) in all Hospital Pharmacy processes.
- **Challenge 17. Leadership in the development, implementation, and monitoring of personalised and advanced therapies.** *Ensure that HPs have clearly defined responsibilities and actively participate as guarantors of the quality and development of the process, implementation, and monitoring of advanced and personalised therapies.*
- **Objectives:** To consolidate HPSS in the processes of the acquisition, reception, storage, custody, preservation, and dispensing of advanced therapies.
- To highlight the role of HPs in the traceability of the process in advanced and personalised therapies.
- To promote the training of HPs in the production of advanced and personalised therapies.
- To participate in the multidisciplinary units where technical and clinical decision-making and outcomes are measured.
- To adapt and incorporate the infrastructure and technology needed to develop processes for advanced and personalised therapies.
- To consolidate HPs as reference specialists in individualisation and personalisation processes, guided by the global vision of the HPS as a multidisciplinary service.
- **Challenge 18. Embrace open innovation.** *Collaborate with different stakeholders in the creation of knowledge flows and strategies to address health challenges by incorporating creative and effective solutions within HPSS and their environment to deliver value to patients and the health system.*
- **Objectives:** To promote a cultural change that facilitates the implementation of this collaborative model.
- To design and develop a strategy for incorporating the innovation challenges and goals to be achieved.
- To include the perspective of the patient in innovation processes.
- To create and strengthen internal and external partnerships with industrial, professional, and academic sectors, both public and private.
- To participate in external collaborative innovation projects.
- To identify sources of funding for implementing innovation.
- To align innovation projects with the SDGs through the "2023 + SOSTenible: Hospital Pharmacy Action Plan for the 2030 goals" project.
- **Challenge 19. Sustainability of the healthcare system.** *Hospital Pharmacy contributes to the sustainability of the healthcare system by managing resources efficiently and equitably to achieve the best health outcomes, and by seeking improvements to the system that are economically viable in the short and long term. The contribution of Hospital Pharmacy encompasses areas related to medications, medical devices, professional activity, human resources, and other relevant domains. It has sufficient perspective to collaborate within and outside HPSS, including organising the activities of other healthcare professionals, improving public health and the healthcare environment. This activity involves the continuous evaluation of contributions, including their economic impact and health outcomes.*
- **Objectives:** To raise awareness of the importance of sustainability among all HPS professionals.
- To estimate economic impacts on health outcomes and the environment before implementing any action or change in the health system (interventions, treatments, measures, processes).
- To continuously evaluate any action or change in the health system, allowing for modifications based on the outcomes.
- To encourage Hospital Pharmacy professionals, the public, other healthcare professionals, and managers in the healthcare environment to recognise their responsibility for the sustainability of the healthcare system.
- **Challenge 20. Indication and appropriateness of pharmacotherapy.** *HPs participate in determining the indication and appropriateness of pharmacological treatments under established and authorised conditions and requirements, and take responsibility for the health outcomes resulting from this practice. The goal is to improve the effectiveness, safety, efficiency, and convenience for patients and the health system, while also taking into account environmental, social, and governance sustainability criteria.*
- **Objectives:** To define processes for determining the indication and appropriateness of pharmacotherapy that HPSS intend to include in their portfolio of services for which they have specifically trained professionals.

- To identify the therapeutic areas and procedures for determining the indication and appropriateness of pharmacotherapy, and to approve the necessary protocols through the relevant committees.
- To record and measure the activities of pharmacists in determining indications and appropriateness, and to assess their value in terms of health outcomes and systemic efficiency.
- To advance specific training in the determination of pharmacotherapeutic indications and appropriateness.

PC, pharmaceutical care; HP, hospital pharmacist; SDG, sustainable development goals; EID, emerging infectious disease; SEFH, Spanish Society of Hospital Pharmacy; HPS, Hospital Pharmacy Service; PT, pharmacy technician.

patients, healthcare professionals, managers, and healthcare authorities. To this end, the following standards have been agreed:

- The HPSs have a comprehensive electronic prescribing system integrated with clinical information systems and decision-support elements in all healthcare settings.
- The pharmaceutical validation of prescriptions is conducted prior to dispensing and/or administration, particularly for high-risk medications.
- The dispensing and administration of the medication associated with the prescription is recorded electronically, with unambiguous identification of patient and medication, at least in high-risk units.
- Systems are implemented to improve traceability, quality, and safety throughout the entire drug use circuit: acquisition–prescription–validation–processing–dispensing–administration.
- The processes for the preparation and administration of injectables are standardised in the hospital, following the guidelines of the Guide to Good Practice in the Preparation of Medicines, promoting their centralised preparation in the pharmacy services.
- High-risk medications available in the facility are clearly identified alongside error prevention practices in all processes.
- The HPSs have an updated and standardised procedure to facilitate medication reconciliation during care transitions, particularly for chronic patients with polymedication and/or being treated with high-risk medications.
- Clinical pharmacists are integrated into care teams, at least in units treating high-risk patients.
- HPSs develop and implement patient education programmes to encourage their active participation in treatment.
- Periodic evaluation (at least every 3 years) of medication use systems, using questionnaires or other self-assessment tools, to identify risks in the processes and to prioritise and incorporate improvement measures.

Regarding the tools and resources needed to achieve the 2030 objectives, aspects such as training, research, technology, human resource management, and process-related issues have been taken into consideration. Teaching resources include the inclusion of safety training into the induction plans for new professionals, active participation in clinical safety committees, the implementation of continuous safety education plans, and patient participation in safety aspects of the care process. Within the area of research-related tools, it is recommended to evaluate the impact of the safety practices implemented and their healthcare outcomes.

Technological resources focus on information systems, comprehensive electronic prescribing, automation, intelligent infusion pumps, and quality control. In terms of human resource management, the figure of the clinical safety leader, second-victim programmes, and patient involvement are now focuses of attention. Finally, regarding processes, challenges include promoting a safety culture, establishing reporting and analysis systems, obtaining quality accreditations, and identifying and implementing safe practices.

Any strategic project needs tools to facilitate its implementation in a way that is both practical and adapted to real-world conditions, as well as regular monitoring of its impact to ensure that it is achieving the desired developments in the target groups. For this reason, in addition to

characterising the challenges, a self-assessment tool has been designed, modelled on other similar questionnaires already known in our setting.¹⁴ We hope that this questionnaire will be a useful tool for pharmacy services, enabling progress toward meeting the challenges.

Using the questionnaire, each pharmacy service will be able to take the pulse of its situation, identify areas for development, and decide which challenges to prioritise. It will help to establish a concise and realistic roadmap, as well as specify the actions to be taken, and measure their progress over time. The questionnaire is based on the standards established for each challenge, as they outline the actions required to meet them, while providing different response options based on the degree of development or implementation of each standard. In summary, the questionnaire is intended to serve as an improvement and planning tool, assisting HPSs in their efforts to improve their service portfolio and the overall value of their activities.

Conclusions

The 2030 Project addresses the need for a roadmap for HPSs to strategically plan their development, ensuring they can meet the needs of society, organisations, and the environment, while taking into consideration the ongoing changes and advances that are taking place in the healthcare ecosystem. The challenges identified and characterised relate to the different areas of action of Hospital Pharmacy, with the aim of achieving the best health outcomes for the community, along with the commitment to safeguard the sustainability of the system, while taking into account the reality of our environment in the current decade.

Ethical responsibilities

The instructions for manuscript submission and all ethical responsibilities have been fulfilled.

Funding

None declared. The 2030 project of the Spanish Society of Hospital Pharmacy (SEFH) was funded directly by the scientific society itself. The authors of the article declare no financial support related to the project.

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Declaration of competing interest

None declared. The authors have no professional, research, economic, or moral conflicts of interest.

Acknowledgements

The project was made possible thanks to the selfless collaboration of all colleagues involved in the working groups for each challenge. The SEFH working groups, as well as the SEFH Board of Directors and Governing Boards, also collaborated with their contributions.

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