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Evolution of the SEFH's "Proyecto 2020" in a Hospital Pharmacy Department

Evolución del Proyecto 2020 de la Sociedad Española de Farmacia Hospitalaria en un Servicio de Farmacia Hospitalaria

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Abstract

Objective: To describe the evolution of our Pharmacy Service in relation to the objectives of Proyecto 2020 (Project 2020) of the Sociedad Española Farmacia Hospitalaria (Spanish Society of Hospital Pharmacy), to identify weak points, and to implement improvement actions to achieve the set objectives.

Method: A 10-year prospective observational study. We analysed the initial situation of the Pharmacy Service and conducted follow-up reassessments. We developed a questionnaire comprising the 28 goals of the five strategic focus areas (blocks) of the project based on a 4-level quantitative classification of these goals: level A, implementation in all areas (3 points); level B, implementation in some areas (2 points); level C, not implemented, but formally discussed (1 point); or level D, not addressed (0 points). After each assessment, we identified the goals with the lowest scores and determined which improvement actions needed to be implemented. After each assessment, the targets with lower score were identified and improvement actions needed to be implemented were decided.

Results: The initial assessment was conducted in 2010. The overall score was 42/84 and the highest score (7/9) related to the block scientific evidence. The follow-up reassessments (2014, 2019) and the final one (2020) showed an overall gradual increase in level A scores (18% vs 53%) and a

KEYWORDS

Hospital Pharmacy Service; Strategic planning; Pharmaceutical care; Medication therapy management; Quality of health care; Safety management; Certification.

Resumen

Objetivo: Describir la evolución de nuestro Servicio de Farmacia con respecto a los objetivos del Proyecto 2020 de la Sociedad Española de Farmacia Hospitalaria, la identificación de puntos débiles y la implementación de acciones de mejora dirigidas a alcanzar los objetivos planteados.

Método: Estudio observacional prospectivo de 10 años de duración. Se analizó la situación basal y se realizaron reevaluaciones de seguimiento y de situación final. Se elaboró un cuestionario que contemplaba los 28 objetivos de los cinco bloques del proyecto basándose en cuatro niveles según si el objetivo estaba implantado en todas las áreas (A), implantado en algunas áreas (B), si se había debatido formalmente pero no estaba implantado (C) o si no se había considerado (D). Para la evaluación cuantitativa se asignaron 3 puntos a los objetivos de nivel A, 2 puntos a los de nivel B, 1 punto a los de nivel C y 0 puntos a los de nivel D. Tras cada evaluación se identificaron los puntos débiles (los de menor puntuación) y se decidieron acciones de mejora a implementar.

Resultados: En 2010 se realizó la evaluación inicial obteniendo una puntuación de 42/84, siendo el bloque de evidencia científica el de mayor puntuación (7/9). En las diferentes evaluaciones de seguimiento (2014, 2019) y final (2020) se observó un incremento gradual de los objetivos de nivel A

PALABRAS CLAVE

Servicio de Farmacia en hospital; Planificación estratégica; Servicios farmacéuticos; Administración del tratamiento farmacológico; Calidad de la atención de salud; Administración de la seguridad; Certificación.

decrease in level C (43% vs 4%) and D objectives (14% vs 4%). All blocks improved their score, obtaining a final score of 68/84 (31% increase). A total of 18 weak points were identified and appropriate improvement actions were implemented, which included automation, quality management, the creation of multidisciplinary working groups, the prevention of medication errors, the incorporation of intelligent pumps or therapeutic drug monitoring among other solutions.

Conclusions: Projects promoted by scientific societies help to prioritize improvement actions in health organizations that contribute to improve their quality. Follow up conducted within Project 2020 has led to improvements in all blocks and positive impacts on the quality of pharmaceutical practice.

(18% *versus* 53%) y una reducción de los objetivos de nivel C (43% *versus* 4%) y D (14% *versus* 4%). Todos los bloques mejoraron, obteniendo una puntuación global final de 68/84 (31% de incremento). Se identificaron 18 puntos débiles y se implementaron sus correspondientes acciones de mejora, incluyendo robotización, gestión de la calidad, creación de grupos de trabajo multidisciplinares, prevención de errores de medicación, implementación de bombas inteligentes o la monitorización farmacocinética, entre otras.

Conclusiones: La adherencia a proyectos promovidos por sociedades científicas ayudan a priorizar acciones de mejora en las organizaciones sanitarias que contribuyen a mejorar la calidad de las mismas. En nuestro Servicio de Farmacia, el seguimiento del Proyecto 2020 ha conllevado una mejora en todos los bloques, lo que repercute positivamente en la calidad de la práctica farmacéutica.

Introduction

Hospital pharmacy is a specialisation that improves patient health and contributes to the safe, effective, and appropriate use of drugs. Pharmacists have always focussed on delivering quality pharmaceutical care and promoted improvement actions in clinical practice[1-3]. In Spain, there is no specific accreditation system for Pharmacy Services (PS). However, several scientific societies, such as the American Society of Health-System Pharmacy (ASHP) or the Canadian Society of Hospital Pharmacists, have created projects to promote and develop pharmacy practice in hospitals and in national health systems[4,5]. These projects are similar to others described in the literature regarding defining goals, detecting opportunities for improvement, and improving quality[6,7]. In 2001, the ASHP instituted the 2015 Initiative, which consisted of six strategic focus areas and 31 goals to be developed in PSs and implemented by 2015 at the latest[4]. Based on this project, the Spanish Society of Hospital Pharmacy (SEFH) introduced Proyecto 2020 (Project 2020) in 2008. Project 2020 is a 12-year strategic plan to incorporate new technologies that will improve the organisation and quality of PSs, as well as to achieve safer and more appropriate use of drugs[8]. This project comprises 28 goals clustered into five strategic focus blocks: organisational development (7 goals), scientific evidence in clinical practice (3 goals), pharmaceutical care (6 goals), safety practices (6 goals), and training and research (6 goals)[9]. In 2010, our PS adopted Project 2020, thus aligning ourselves with the strategic focus areas of the SEFH.

Our article describes the evolution of our PS in relation to the goals of Project 2020, the weaknesses identified, and the implementation of improvement actions to achieve the goals.

Methods

Goal assessment

We conducted a 10-year prospective observational study in the PS of a tertiary referral hospital. Initially, we assessed the baseline situation of the goals of Project 2020 by adapting the self-assessment tool used by the ASHP to assess the 2015 Initiative[10]. We developed a questionnaire that included the 28 goals of the SEFH. These goals were classified into four levels as follows: level A, the goal was fully implemented; level B, the goal was partially implemented; level C, the goal was formally discussed but not implemented; and level D, the goal was not addressed. Over the following years, the same methodology was applied to reassess progress. Quantitative comparisons were conducted on the basis of points awarded to each of these levels: 3 points to level A, 2 to level B, 1 to level C, and 0 to level D. For example, if all level A goals were achieved the score would be 100%, whereas if all level D goals were achieved the score would be 0%.

Identification of weaknesses and implementation of improvement actions

After each assessment, we identified the goals with the lowest scores and determined which improvement actions need to be implemented.

Results

Goal assessment

In 2010, we conducted the first self-assessment of Project 2020 (Table 1). Initially, 18% of the goals were classified as level A, 25% as level B, 43% as level C, and 14% as level D. Follow up was conducted in 2014, 2019, and 2020. There was a steady increase in the percentage classified as level A (32%, 46%, and 53%, respectively), a gradual decrease in the percentage classified as level C (21%, 4%, and 4%, respectively), and a decrease in the percentage classified as level D (from 14% to 4% over the study period).

At baseline, the blocks with the highest scores were scientific evidence and organisational development. Follow up and final assessment showed that there had been improvements in the overall scores of all blocks. The block scientific evidence reached 100% and the blocks safety practices and pharmaceutical care both reached 83%, which was the greatest increase (39%). The least progress was achieved in the block training and research (Table 2).

Identification of weaknesses and implementation of improvement actions

The following goals were prioritised for improvement actions. They are classified by block. Initial year and final year are shown in parentheses and baseline level and peak level are shown in square brackets (see Table 1 for details).

Block 1: Organisational development

- Goal 3: An automated drug storage and dispensing system is in place in the PS (2014 [B]-2019 [A]). Initially, the unit-dose system was managed using two automated rotary vertical storage and dispensing systems. In 2018, a horizontal system was also implemented for storing and dispensing non-thermolabile medication. The first automated dispensing system was implemented in 2016. It is linked to the electronic prescription (EP) software for decentralised drug storage and dispensing, which, over several years, has been extended to include drugs for surgical and emergency units.
- Goal 6: At least one barcode, radiofrequency, or similar verification system is in place to check patient/medication at the time of administration in units where high-risk (HR) drugs are administered (2010 [D]-2014 [B]). Since 2010, an integrated system with barcode verification has been in place for the prescription, validation, preparation, dispensing, and administration of cytostatics in the day hospital. Work is currently underway to expand the verification of administration to more units and to other high-risk (HR) drugs, but it remains a challenge to integrate the preparation and administration programme for inpatients.
- Goal 7: A quality management system is in place and has been certified or accredited by a duly accredited external company (2010 [C]-2014 [A]). In 2012, our PS implemented a quality management system according to ISO 9001:2008. It was recertified in 2017 according to ISO 9001:2015, which places increased emphasis on planning goals and implementing and monitoring improvement actions. This change of emphasis is in line with the approach taken by SEFH Project 2020.

Table 1. Evolution of the Goals of SEFH Project 2020 in our Pharmacy Service

GOALS OF THE 2020 PROJECT					
BLOCK 1: ORGANISATIONAL DEVELOPMENT		**2010**	**2014**	**2019**	**2020**
1.1	**Integrated information technology process management systems are in place**. *In order to optimise the management of the PS, all of the information technology applications used in the PS must be linked with each other. Thus, internal information can be shared, standardised, and integrated within the PS.*	**B**	**B**	**B**	**B**
1.2	**An assisted electronic prescribing system is available, connected with and/or integrated in the clinical record, including drug information databases for clinical decision-making.** *The EP system must have warning elements such as: allergies, maximum dose, interactions, or dosage adjustments in certain situations. In addition, it should allow the consultation of drug databases, the institution's therapeutic protocols, and other elements to assist in clinical decision-making.*	**B**	**B**	**B**	**B**
1.3	**An automated drug storage and dispensing system is in place in the PS.** *Incorporate new technologies for the management, storage, and dispensing of drugs to improve logistics and help optimise resources and materials.*	**B**	**B**	**A**	**A**
1.4	**Systems are in place to facilitate control, traceability, and safety in the preparation and/or handling of HR drugs and/or complex drug products.** *Safety during drug preparation is significantly improved by the incorporation of control measures, such as barcodes for drug identification, weighing scales with weight controls, automated filling systems, or automated systems.*	**B**	**B**	**B**	**B**
1.5	**A system has been integrated in the medical record to record drug administration, including databases to support administration.** *The integration of the medication administration record in the medical record enables the sharing of all information on prescribed and administered drug treatment.*	**B**	**B**	**B**	**B**
1.6	**At least one barcode, radiofrequency, or similar verification system is in place to check patient/medication at the time of administration in units where high-risk (HR) drugs are administered.** *High-risk drugs include but are not limited to adrenergic agonists and antagonists, cytostatics, anticoagulants and antithrombotics, electrolyte concentrates, neuromuscular blocking agents, insulin and oral hypoglycaemics, and opioids.*	**D**	**B**	**B**	**B**
1.7	**A quality management system is in place and has been certified or accredited by a duly accredited external company.** *The PS must have a quality management system that allows staff to certify that each process and/or activity performed is done in accordance with good practice standards.*	**C**	**A**	**A**	**A**
BLOCK 2: SCIENTIFIC EVIDENCE IN CLINICAL PRACTICE		**2010**	**2014**	**2019**	**2020**
2.1	**The PS actively participates in the assessment and selection of drugs according to scientific evidence-based principles.**	**A**	**A**	**A**	**A**
2.2	**The PS actively participates in the development and implementation of evidence-based therapeutic protocols and/or clinical pathways involving drugs in collaboration with the medical services involved**.	**A**	**A**	**A**	**A**
2.3	**The PS actively participates in programmes ensuring that patients receive evidence-based pharmacotherapy in accordance with Spanish national or regional public directives, standards, or recommendations**.	**C**	**B**	**A**	**A**
BLOCK 3: SAFETY PRACTICES		**2010**	**2014**	**2019**	**2020**
3.1	**The PS actively participates in the development and maintenance of a risk management programme to prevent medication errors.** *A multidisciplinary team will review errors that have occurred in the centre and other centres, and review published information on new safety improvement practices. The team will take measures to improve all processes, inform health care professionals about the reported errors and the strategies implemented. They will also annually evaluate the activities conducted and prepare a summary report of the problems detected, indicate the actions taken, and prioritise the actions to be implemented in the following year.*	**C**	**A**	**A**	**A**
3.2	**The PS has implemented a computer system based on alert signals to detect and prevent adverse drug events.** *This system will also be used to assess outcomes and demonstrate the improvements achieved by the implementation of error-reduction practices.*	**C**	**B**	**B**	**B**
3.3	**The PS actively participates in the development and implementation of a standardised procedure for reconciliation of the patients' regular medication, both on admission and discharge.**	**C**	**C**	**B**	**B**

Table 1 *(cont.).* Evolution of the Goals of SEFH Project 2020 in our Pharmacy Service

GOALS OF THE 2020 PROJECT					
BLOCK 3: SAFETY PRACTICES		**2010**	**2014**	**2019**	**2020**
3.4	**The PS actively participates in the establishment of standardised procedures for the safe handling of HR drugs.** *These standards will be known to all health care professionals, will cover drug handling in the processes of procurement, storage, prescription, transcription, preparation, dispensing, administration, and monitoring, and will be updated at least annually.*	**C**	**B**	**B**	**A**
3.5	**The PS actively participates in the establishment of standardised procedures for the safe preparation and administration of injectable drugs**. *There will be collaboration with nurses and other health care staff, and compliance will be monitored at least annually using an observational error-detection method.*	**C**	**B**	**B**	**B**
3.6	**The PS dispenses drugs, including injectables, in unit doses and in a form ready for administration whenever possible.** *Each container should be correctly labelled and should have a legible code that identifies the name of the medicinal product, dosage, manufacturer, expiry date, and batch number.*	**A**	**A**	**A**	**A**
BLOCK 4: PHARMACEUTICAL CARE		**2010**	**2014**	**2019**	**2020**
4.1	**The pharmacist directly works with inpatient units, regularly participating in the prescription decision process for at least 25% of inpatients.** *Pharmacists will participate in clinical activities as part of the health care team and collaborate in the assessment of patients. Each hospital will define the clinical areas in which they will participate.*	**C**	**B**	**B**	**B**
4.2	**Pharmacists validate drug prescriptions before the first dose is administered, taking into account the patients' clinical data and evidence-based medicine criteria.** *In this process, the pharmacist will consider the clinical history (renal function, liver function, etc.), the patient's concomitant medication, and allergy data to check the appropriateness of the medicine, dose, and administration route. Validation will include the assessment of interactions, contraindications, therapeutic duplications, and selected safety alerts. Validation will be performed before the first dose is administered except in circumstances when this process would result in a clinically unacceptable delay. In such cases, it should be ensured that no more than 24 hours elapse between the time of prescription and pharmaceutical validation. Pharmaceutical interventions should be documented in the patient's record and assessed in order to develop improvement measures.*	**B**	**B**	**B**	**A**
4.3	**The PS has an information system in place for drugs at discharge.** *A programme is in place to provide patients with verbal and/or written information during the discharge process to ensure the effective and safe use of drugs and continuity of care. Clear and simple information will be provided on aspects such as indications, dosage, precautions, side effects, and administration method.*	**C**	**C**	**C**	**C**
4.4	**The pharmacist provides ongoing pharmaceutical care to outpatients receiving medication in the PS.** *They will develop action plans to correct them on an individualised basis in a multidisciplinary setting. Patient satisfaction and health outcomes will be assessed.*	**B**	**A**	**A**	**A**
4.5	**The pharmacist participates in the assessment of outpatient prescriptions (efficiency and safety) and provides pharmaceutical care for at least 1 type of patient.** *Patients undergoing chronic treatment seen in hospital outpatient rooms are considered candidates for pharmaceutical care, with the aim of improving care for patients with certain pathologies (prevalent or rare diseases. Strategy 9 of the PCSNS).*	**C**	**C**	**A**	**A**
4.6	**The PS creates therapeutic monitoring reports (pharmacokinetics and/or pharmacogenetics) on patients or drugs that require them.**	**C**	**C**	**A**	**A**
BLOCK 5: TRAINING AND RESEARCH		**2010**	**2014**	**2019**	**2020**
5.1	**The PS has implemented an individualised professional development programme for all pharmacists in the service.** *It will also take into account the needs of the PS regarding current areas of development. Adherence will be assessed annually.*	**D**	**B**	**B**	**B**
5.2	**The PS has implemented an individualised professional development programme for all technical and nursing staff in the service**. *It will also take into account the needs of the PS regarding current areas of development. Adherence will be assessed annually.*	**C**	**C**	**B**	**B**

Table 1 *(cont.).* Evolution of the Goals of SEFH Project 2020 in our Pharmacy Service

GOALS OF THE 2020 PROJECT					
BLOCK 5: TRAINING AND RESEARCH		**2010**	**2014**	**2019**	**2020**
5.3	**At least one of the pharmacists in the PS is certified by the Board of Pharmacy Specialties or equivalent.** *The PS will promote the accreditation of their specialists via specific professional training. In this sense, the Board of Pharmacy Specialties (BPS) is considered a reference body. Systems similar to the BPS are understood to be those that require an objective and rigorous assessment of professional practice in a specific area of training. These systems should be fully recognised by the professional community and require certification to be periodically renewed.*	**A**	**A**	**A**	**A**
5.4	**The PS has established a specific pharmacotherapy training plan for all pharmacists in the service.**	**D**	**C**	**A**	**A**
5.5	**At least 1 hospital pharmacist has been the main researcher in a publicly funded competitive research project (within the last 3 years).**	**D**	**A**	**D**	**D**
5.6	**At least 1 hospital pharmacist has authored a paper published in a journal included in the Science Citation Index (SCI) (within the last 3 years).** *The SCI is a documentary database which collects all contributions (articles, editorials, letters, reviews, discussions, etc.) that can be published in science and technology journals indexed by Thomson Reuters.*	**A**	**A**	**A**	**A**

EP: electronic prescription; HR: high-risk; PCSNS: Quality Plan for the National Health System; PS: Pharmacy Service.

Table 2. Evolution of scores by block during the study period and overall increase in scores (in percentages) from baseline to the final situation

	Number of goals	2010		2014		2019		2020		Increase 2010-2020
BLOCK 1	7	11/21	(52%)	16/21	(76%)	16/21	(76%)	16/21	(76%)	24%
BLOCK 2	3	7/9	(78%)	8/9	(89%)	9/9	(100%)	9/9	(100%)	22%
BLOCK 3	6	8/18	(44%)	13/18	(72%)	14/18	(78%)	15/18	(83%)	39%
BLOCK 4	6	8/18	(44%)	10/18	(56%)	14/18	(78%)	15/18	(83%)	39%
BLOCK 5	6	8/18	(44%)	13/18	(72%)	12/18	(67%)	13/18	(72%)	28%
TOTAL	28	42/84	(50%)	60/84	(71%)	65/84	(77%)	68/84	(81%)	31%

Block 1: Organisational development; Block 2: Scientific evidence in clinical practice; Block 3: Safety practice; Block 4: Pharmaceutical care; Block 5: Training and research.

Block 2: Scientific evidence in clinical practice

- Goal 3: The PS actively participates in programmes ensuring that patients receive evidence-based pharmacotherapy in accordance with Spanish national or regional public directives, standards, or recommendations (2010 [C]-2019 [A]). Since 2013, efforts have been made to participate more effectively in the decision-making process of pharmacotherapeutic committees. The creation of multidisciplinary teams was promoted by the PS to provide individualised, efficient, and effective prescriptions in line with the guidelines established by the regional health system's pharmacotherapeutic harmonisation programme. Currently, more than 100 people participate in the 10 working groups that report to the Pharmacy and Therapeutics Committee. The 10 groups are shown with the year of creation in parentheses: multiple sclerosis (2013), growth hormone (2013), hepatitis C (2013), immunosuppressants in digestive disorders (2014), HIV (2014), immunosuppressants in dermatology (2016), immunosuppressants in rheumatology (2016), lipid-lowering drugs (2017), joint working group in pneumology/allergology/dermatology (2019), and migraine (2020).

Block 3: Safety practices

- Goal 1: The PS actively participates in the development and maintenance of a risk management programme to prevent medication errors (ME) (2010 [C]-2014 [A]). In 2010, a multidisciplinary ME committee led by a pharmacist was formed. It meets monthly to analyse incidents reported in the hospital's voluntary ME reporting programme and to establish improvement actions for their prevention. In addition, it works in interdepartmental association with Primary Care staff.
- Goal 2: The PS has implemented a computer system based on alert signals to detect and prevent adverse drug events (2010 [C]-2014 [B]). In 2013, the hospital implemented new EP software to detect and alert users to cross-allergies or excess daily cumulative doses of specific drugs. Work is currently being undertaken to incorporate alerts according to the clinical situation of patients: however, progress has been hindered by the lack of development or integration of corporate software.
- Goal 3: The PS actively participates in the development and implementation of a standardised procedure for reconciliation of the patients' regular medication, both on admission and discharge (2014 [C]-2019 [B]). In 2015, a protocol was developed and implemented for medication reconciliation for selected patients on admission. Discharge reconciliation has been implemented to a lesser extent. It was going to be developed in 2020, but the COVID pandemic has meant it will be delayed until 2021.
- Goal 4: The PS actively participates in the establishment of standardised procedures for the safe management of HR drugs (2010 [C]-2020 [A]). A protocol for the safe handling of HR drugs was developed and implemented in 2014 and updated in 2017. All HR specialties were identified and storage, preparation, and administration standards were established.
- Goal 5: The PS actively participates in the establishment of standardised procedures for the safe preparation and administration of injectable drugs (2010 [C]-2020 [B]). From 2014 onwards, internal guidelines have been developed that address compatibility between Y-set intravenous therapy and prescribing, preparing, and administering intravenous infusions in critically ill patients. Smart pumps have been introduced in

paediatric and adult intensive care units. In 2019, the hazardous drugs programme was implemented and videos and infographics on their administration were produced and shared on the intranet.

Block 4: Pharmaceutical care

- Goal 1: The pharmacist directly works with inpatient units, regularly participating in the prescription decision process for at least 25% of inpatients (2010 [C]-2014 [B]). A pharmacist from the PS has been assigned to each hospitalisation unit. This facilitates communication with each unit and provides the specialist knowledge and skills needed to actively advise and participate in the treatment of hospitalised patients, especially in Critical Care, Paediatric, and Internal Medicine units. Involvement in prescribing was significantly increased by the creation of the Antimicrobial Stewardship (AMS) Programme for adults in 2015 and one for paediatric patients in 2018. Both programmes are run by physicians and pharmacists.
- Goal 2: Pharmacists validate drug prescriptions before the first dose is administered, taking into account the patients' clinical data and evidence-based medicine criteria. ([...] No more than 24 hours should elapse between the time of medical prescription and pharmaceutical validation) (2019 [B]-2020 [A]). Since 2020, EP software has been implemented for all inpatients, including those in emergency and surgical units (Resuscitation Unit and Post-Anaesthesia Care Unit [PACU]). The pharmacist continuously validates all prescriptions. Medications are dispensed in unit-dose trolleys except in the case of the PACU.
- Goal 4: The pharmacist provides ongoing pharmaceutical care to outpatients receiving medication in the PS (2010 [B]-2014 [A]). The PS has two outpatient rooms, which are physically located next to the outpatient areas of other specialties. Dispensing and pharmaceutical care is provided in these rooms by appointment in the mornings and afternoons. The main room is managed by a pharmacist, who provides, as a minimum, dispensing and pharmaceutical care at the beginning of all treatment and during any changes. The secondary room is managed by a pharmacy technician, who dispenses some of the continuations of treatment.
- Goal 5: The pharmacist participates in the assessment of outpatient prescriptions (efficiency and safety) and provides pharmaceutical care for at least one type of patient (2014 [C]-2019 [A]). This was achieved by the active participation of pharmacists in the teams mentioned above (Block 2, Goal 3). Follow-up is multidisciplinary and pharmaceutical care is more thorough, thus increasing the efficiency and safety of the prescribed treatment.
- Goal 6: The PS creates therapeutic monitoring reports (pharmacokinetics and/or pharmacogenetics) on patients or drugs that require them (2014 [C]-2019 [A]). Using interconsultations recorded in the clinical history, the PS has conducted pharmacokinetic monitoring in paediatric patients since 2014 and in adults since 2016.

Block 5: Teaching and research

- Goal 1: The PS has implemented an individualised professional development programme for all pharmacists in the service (2010 [D]-2014 [B]). The PS has a professional development programme that recommends annual training for each pharmacist (courses, conferences, or congresses of interest), but the inclusion of teaching and research options remains pending.
- Goal 2: The PS has implemented an individualised professional development programme for all technical and nursing staff in the service (2014 [C]-2019 [B]). In 2016, accredited further education sessions were implemented for non-faculty staff, with morning and afternoon options on offer to facilitate attendance.
- Goal 4: The PS has established a specific pharmacotherapy training plan for all pharmacists in the service (2010 [D]-2019 [A]). An annual training programme for pharmacists was implemented in 2013 and accredited in 2016.
- Goal 5: At least one hospital pharmacist has been the main researcher in a publicly funded competitive research project (2010 [D]-2014 [A]-2019 [D]). Between 2014 and 2016, several pharmacists participated in a multicentre study of this type. Goal 5 is the only one to have decreased in level, because this type of project has not been conducted again.

Discussion

A real challenge facing health care organisations is their certification and accreditation to ensure the quality and safety of their daily activities. Falstie-Jensen *et al.* found that patients were more likely to receive care according to clinical guidelines at fully accredited hospitals than those at partially accredited ones, thus demonstrating a correlation between accreditation and clinical impact[11]. In the absence of a specific accreditation for PSs, adherence to the strategic projects of scientific societies has been suggested as an alternative, but their clinical impact remains unknown. Several authors have suggested that the assessment of interventions is difficult because of their heterogeneity as well as the complexity of measuring the quality of care and the care offered to patients[12,13]. Engels *et al.* established a work plan to prioritise and implement the goals of the ASHP initiatives that includes strict follow-up[14], although there is a lack of specific information on implementing and monitoring improvements.

Adherence to Project 2020 in our PS has led to substantial improvements in the scores of all blocks over the study period. The results of the initial assessment were similar to the median scores of Spanish hospitals as reported by the SEFH in 2010, with Blocks 1 and 2 obtaining slightly higher scores[15,16]. In 2001, the ASHP implemented the 2015 Initiative: however, in 2012 it was merged with the Pharmacy Practice Model Initiative (PPMI), due to similarities between the two projects[17]. This merger changed the structure of the goals and assessment methodology, thus hindering comparisons with the evolution of Project 2020[18].

During the study period, our hospital implemented technologies in the prescription, validation, preparation, and administration processes. Examples include the EP system, continuous pharmaceutical care for all inpatients and outpatients, automation, smart pumps, and traceability and safety systems. In some cases, external factors have hindered the implementation process, such as the lack of development or integration of corporate software. These technologies have not been widely implemented in Spain, as shown by the 2019 national survey conducted by the SEFH. Pérez-Encinas *et al.* found that there is limited implementation of automated rotary horizontal storage and dispensing systems (30%), traceability and safety systems (24.8%), smart pumps (21.4%), or EP for outpatients (62%)[19]. Philip *et al.* found that 62% of hospitals in the United States use these technologies and 74% perform pharmaceutical care, although in some states, such as Texas, this percentage is 54% and 49%, respectively[20]. However, the latter results were published 5 years before ours, and the increased availability of key technologies must be taken into account when comparing results. Our results also show that the least developed block was teaching and research. This result is in line with those of Pérez-Encinas *et al.*, who found that although Spanish PSs are committed to teaching, their scientific production is still limited[21]. The presence of a chief innovation officer in PSs could help in the detection of emerging opportunities and the strategic planning of future projects.

One of the limitations of this article is the lack of references or guidelines describing the procedures to be followed to measure adherence to the project. Furthermore, assessment was subjective because all follow-ups were conducted by pharmacists from the PS itself without the use of goal indicators or criteria for their quantification.

Although the PPMI and Project 2020 have been completed, we must continue to promote quality in pharmacy practice. In early 2020, the ASHP presented its new initiative called the Practice Advancement Initiative 2030. It includes 5 strategic focus areas and 59 recommendations to be achieved by 2030[13,22]. Likewise, the SEFH is working on an accreditation project for outpatient pharmaceutical care called Q-PEX that may be a turning point in ensuring quality in this area[23].

Project 2020 has identified opportunities for improvement and defined strategic focus areas on which to work, ranging from quality management to leadership in multidisciplinary teams. The identification of weaknesses continues to be the key process in implementing improvement actions and developing PSs.

All these projects, regardless of their focus, have the same final aims: to improve organisational aspects, to increase the quality of pharmacy practice, and to integrate pharmacists in multidisciplinary teams.

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Conflicts of interest

No conflict of interests.

Presentation at congresses

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- Madrid, October 19 to 22 October, 2010: "Proyecto 2020: Análisis de la situación en el servicio de farmacia de un hospital de referencia".
- Valladolid, September 30 to October 3, 2014: "Proyecto 2020: Análisis de la situación en el servicio de farmacia de un hospital de referencia".
- Seville, October 17 to 19, 2019: "Proyecto 2020: Análisis de la situación en el servicio de farmacia de un hospital de referenciaeference hospital".

Contribution to the scientific literature

Systematic strategic planning is essential to establish goals and prioritise resource allocation.

Our article shows how adherence to a national project promoted by a scientific society can assist in such planning and improve pharmaceutical practice in hospitals.

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