

## Investigation of the hospital pharmacy profession in Europe

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### Abstract

**Objective:** Starting from 1995, EAHP regularly investigates the progress of the hospital pharmacy profession in Europe and identifies key barriers and drivers of this. The most recent “Investigation of the Hospital Pharmacy Profession in Europe” was conducted from November 2022 to March 2023.

**Methods:** The online questionnaire was sent to all hospital pharmacies in EAHP member countries. The investigation was drafted using the same questions as the 2015 baseline survey. Where possible and relevant, responses were compared with the data from previous surveys that monitored the implementation of the EAHP Statements. Keele University, Centre for Medicines Optimisation, School of Pharmacy and Bioengineering, UK analyzed data.

**Results:** The overall number of responses was 653, with a better response rate of 19 % compared to 14 % in 2018 statements survey. The findings indicated that participating hospital pharmacies have similar characteristics to previous surveys. Section 1 (introductory statements and governance) and Section 3 (production and compounding) questions were generally answered positively, with results ranging from 52% to 90%. However, results for Section 4 (Clinical pharmacy services) returned lower levels of positivity, with responses from 8 of the 15 questions being less than 60%. When asked what is preventing hospital pharmacists from achieving implementation of these activities, most answers were limited capacity, not considered to be a priority by managers or other healthcare professionals do this. The last section focused on self-assessment and action planning, with fewer than 50% of positive responses; COVID-19 preparedness and vaccines with mixed positive and negative responses. Furthermore, implementation of the falsified medicines directive impacted the medication handling processes in 50% or more of the answers. Regarding sustainability, the majority (59 %) of respondents felt a greater focus should be on sustainability from an organisational or management perspective.

**Conclusion:** Results offer valuable insights into the hospital pharmacy profession throughout Europe. While there have been improvements in certain areas, challenges remain, particularly in implementing clinical pharmacy services. The findings provide a foundation for further dialogue, advocacy, and strategic planning to advance the role of hospital pharmacists and enhance patient care in Europe's healthcare systems.

**Keywords:** hospital pharmacy practice, investigation, hospital pharmacists, EAHP statements, COVID-19

### What is already known on this topic

- Previous 2015 Baseline and 2018 Statement surveys, provided general knowledge on the implementation of the EAHP Statements of hospital pharmacy profession with more positive responses towards traditional core roles of hospitals compared to newer roles like clinical pharmacy, education, and research. After global COVID-19 pandemic and implementation of FMD, it was essential to investigate the progress of hospital pharmacy practice.

## What this study adds

- This paper updates our knowledge of the level of implementation EAHP Statements, and for the first time introduces questions on pandemic preparedness as a learning from COVID-19 pandemic, FMD, immunisation, vaccines, and sustainability. Most of these factors consumed critical time for hospital pharmacists, leading them to consistently operate in an emergency state to meet their conventional responsibilities. This left little room for taking on modern roles, such as providing clinical pharmacy services or participating in educational and research activities. The top three cited reasons were lack of capacity (not having enough staff), other healthcare professionals doing this, and not being considered a priority by hospital managers.

## How this study might affect research, practice or policy

- This study adds to the understanding of complex process of improving capacity and incorporating new roles in pharmacy, emphasizing the need for time and perseverance. Further research of challenges in implementing clinical pharmacy services is recommended to effectively address these obstacles. Advocacy and education efforts may be required to enhance the role and impact of hospital pharmacists in clinical care and further.

## Introduction

From 1995 until 2018, the European Association of Hospital Pharmacists (EAHP) regularly investigated hospital pharmacy practice (1). However, at the end of 2019, the first case of COVID-19 was identified and started to change everything (2). Although, on 5<sup>th</sup> May 2023, the World Health Organization officially announced the end of the Public Health Emergency of International Concern (PHEIC) for COVID-19, it took its toll (3). Healthcare professionals have taken augmented responsibility for caring for COVID-19 patients during the pandemic. At the same time, millions of people were missing out on essential health services, including lifesaving vaccinations for children. This crisis exacerbated the antimicrobial resistance (AMR) problem due to the imprudent use of antibiotics. However, it brought attention to The European Commission (EC), which recognised the extent and significance of the challenges it triggered. Consequently, EC identified AMR as one of the top three public health threats in the European Union (4). Additionally, during the COVID-19 pandemic, 69% of 1466 hospital pharmacists experienced the most significant shortages in personal protective equipment, indicating healthcare systems' responsibility for the extensive environmental waste and contamination that contribute to climate change (5; 6). Moreover, the new medicine verification system of implementation as part of the Falsified Medicines Directive (FMD) that most affected pharmacists was established in the same year COVID-19 started (7). To investigate hospital pharmacy practice in all these circumstances, EAHP conducted an "Investigation of the hospital pharmacy profession in Europe - Assess and advance hospital pharmacy". This article summarises the key findings, contrasting them with earlier EAHP surveys spanning 2015 to 2018. Moreover, we put forward potential solutions to tackle encountered challenges.

## Methods

"Investigation of the hospital pharmacy profession in Europe" (2022/23 EAHP Investigation) was conducted from November 2022 to March 2023, spanning 35 countries. Data were analysed by Keele University, Centre for Medicines Optimisation, School of Pharmacy and Bioengineering, United Kingdom (UK).

Questions included were related to all six statement sections:

- Section 1: Introductory Statements and Governance
- Section 2: Selection, procurement, and distribution
- Section 3: Production and Compounding
- Section 4: Clinical Pharmacy Services
- Section 5: Patient safety and quality assurance
- Section 6: Education and Research

Similar to the previous 2015 Baseline and 2018 Statement surveys, the 2022/23 EAHP Investigation consisted of three sections:

- Section A: general questions about the participant's hospital pharmacy, such as workforce skill mix and number of beds served.
- Section B: questions about the current activity of pharmacists around each statement
- Section C: questions about the self-assessment tool and practice-specific questions

Participants were asked open-ended questions to rate to what degree they agreed with the question using a Likert scale (1 for strongly disagree, 5 for strongly agree) or to answer Yes/No as it was deemed more appropriate to use rather than a scale of 1-5 in those cases.

To improve the efficiency in the analysis of the results and provide greater insight into the key drivers and barriers to implementation of the statements, the respondent was given a range of pre-selected options to choose from in their response. Five standard pre-selected options were used for every question, although some questions have additional specific options. The five main options were:

1. We are prevented by national policy and/or legislation
2. Not considered to be a priority by my managers
3. Not considered to be a priority by me
4. We would like to do this, but we have limited capacity
5. We would like to do this, but we have limited capability

There was also an 'Other' option, where the respondent could still give a free-text response. Respondents were given the ability to select multiple options. Participants were also asked additional questions for certain statements to gain further insight into particular topics.

The investigation was created using the online survey software SurveyMonkey, which allowed the survey to incorporate a variety of question formats and necessary logic whilst also incorporating EAHP branding and logos. It was distributed to individual hospital pharmacists via EAHP's member associations, newsletters, and social media. A coordinator for each country participated in disseminating the survey at the national level. As was done in previous years, the quantitative data was not used in the results if an incomplete response was submitted.

## Results

### Overview

Of the 3468 hospital chief pharmacists invited to complete the survey, 653 responses were received. Compared to the 2018 Statements Survey, when the response rate from the total of 5164 chief hospital pharmacists was 14 %, the 2022/23 EAHP Investigation had a better response rate of 19 %. However, this still represents a decline compared to previous years, especially from 1995 with 1344 responses and the 2015 baseline survey when the downward trend started with 1094 answers (8; 9). This continued in 2018 when there were 719 responses (10).

The highest number of responses came from Germany (n=63), Italy (n=52) and Türkiye (n=52). Sixteen countries had a response rate of over 30 %, which was the same in the 2018 Survey. Response rates with approximate numbers of chief pharmacists sent the survey are indicated in Supplemental figure 1. If an incomplete response was submitted, it was not used in the results.

### **General questions about the participant's hospital pharmacy, such as workforce skill mix and number of beds served (Section A)**

The findings indicated that on the whole, hospital pharmacies that participated in the study have similar characteristics to previous surveys (8; 9; 10).

Denmark, Estonia, Iceland, Lithuania, Montenegro and Netherlands answered they did not have a workforce development plan in action, while the other 29 countries responded positively to this question. This question was not raised in previous surveys.

For more details, please refer to the supplementary additional material available online.

### **The current activity of pharmacists around all the statements (Section B)**

Responses across all the sections surveyed were mixed, with 29 of the 50 questions returning a positive response percentage of 75% or more significant. Section 1 (introductory statements and governance) contained questions that were mostly answered very positively. However, an exception to this was question 'S1.1 - The pharmacists in our hospital work routinely as part of a multidisciplinary team.' which was only 52% positive, an improvement on previous years but lower than the baseline survey percentage of 59%. Section 3 (production and compounding) questions were generally answered positively, ranging from 67% to 90%. However, results for Section 4 (Clinical pharmacy services) returned lower levels of positivity, with responses from 8 of the 15 questions being less than 60%.

The six questions which received the least positive responses were identified (Table 1).

The individual question with the least positive response was S4.4: 'The pharmacists in our hospital enter all medicines used onto the patient's medical record on admission'. This question received a feeble response (only 33.4% of responses were positive), although this was slightly higher than both the 2018 Statement survey and the 2015 baseline survey. When asked the questions to these statements what is preventing hospital pharmacists from achieving these goals, the most answers were limited capacity, not considered to be a priority by managers or other healthcare professionals do this.

The response to questions relating to what may be considered traditional core roles of hospitals (sections 2, 3, and 5) produced more positive reactions than newer roles such as clinical pharmacy and education and research. This observation is confirmed in Table 2. Table 2 shows all the questions asked in the survey regarding the 44 European Statements of Hospital Pharmacy and the overall percentage of participants who gave a 'positive response' to the question.

### **Results of the self-assessment tool and practice-specific questions (Section C)**

Questions in the last section of the 2022/23 EAHP Investigation focused on self-assessment and action planning, COVID-19 preparedness and vaccines, detection of falsified medicines, and sustainability.

#### ***Self-assessment and action planning***

In answer to the first two questions about self-assessment and action planning in most countries, fewer than 50% of responses were positive (Supplemental figure 2), and those countries showing a higher positive response rate, e.g. Cyprus and Montenegro, had only 1 or 2 respondents.

### **COVID-19 and vaccines management**

Pharmacists in most countries were involved in managing SARS-CoV-2 vaccines (storage/ dispensing) with positive response rates of 80% and higher. There was less pharmacist involvement in the preparation of SARS-CoV-2 vaccines in some countries, but in 12 countries with ten or more respondents, over 50% of responses were positive (Austria, Belgium, Czech Republic, France, Germany, Hungary, Ireland, Italy, Portugal, Slovakia, Slovenia and Sweden). There were fewer positive responses again relating to pharmacist involvement in the Administration of SARS-CoV-2 vaccines in the countries with the highest number of respondents; the percentage of positive responses was 30 to 40% (Supplemental figure 3). There was little pharmacist involvement in the Provision of document or clinical guidance for SARS-CoV-2 vaccines (Supplemental figure 4) apart from four countries (with ten or more respondents) showing a 40% or more positive response rate (Bosnia and Herzegovina, North Macedonia, Romania and Türkiye).

### **Detection of falsified medicines**

There was a solid response for question E4: “Since the implementation of the Falsified Medicines Directive (FMD) on the 9th of February 2019, were any falsified medicines detected in your hospital?”. Most countries reported ‘No’ or ‘Not applicable’ (Supplemental figure 5). Six countries said ‘Yes’ with ten errors the highest number reported. When asked if the implementation of the FMD impacted the medication handling processes in your hospital (e.g., more time is needed for delivering medicine to the ward/patient due to verification and decommissioning activities)? 24/35 countries had ‘Yes’ in 50% or more of the responses. Free text comments referred to the longer time it takes to process and verify medicines and the more significant number of false positive alarms. Again, this highlights the ongoing theme of lack of capacity and capability.

*“all false alarms so far; FMD is no relevant improvement for a country like Austria”, Austria*

*“We have alerts, but no falsified medicines proved,” Czech Republic*

*“few times,” Estonia*

*“Only by mistake” Germany*

### **Immunisation systems**

In most countries, most pharmacists do not have access to Immunization Information Systems (IIS) to carefully screen patients' immunisation history and provide appropriate counselling (Figure 1). In most countries, fewer than 20% of respondents returned positive responses, with Spain and the UK as outliers reporting 40 to 50% of positive responses.

### **Sustainability**

When asked if they felt empowered to make or try any changes that could improve sustainability, respondents were either positive or unsure (Figure 2).

## **Discussion**

The 2022/23 EAHP Investigation response rate is comparable to that of the 2018 statement survey. There is no significant decrease in this pattern, even in the face of difficulties brought by the COVID-19 pandemic and the introduction of the new medicine verification system as part of the FMD, notably affecting hospital pharmacists. These factors consumed critical time for hospital pharmacists, leading them to consistently operate in an emergency state to meet their conventional responsibilities. This left little room for taking on modern roles, such as providing clinical pharmacy services (Section 4) or participating in educational and research activities (Section 6), as evidenced by the negative feedback for statements related to these specific areas. The implementation of these particular areas also presents the most significant challenge, as seen in Table 1. Four out of six statements also provided the most critical challenge in the 2018 Statement survey (Table 1 for S4.4, S4.5, S1.1, and S4.2). The top three cited reasons were lack of capacity (not having enough staff), other healthcare professionals doing this, and not being considered

a priority by hospital managers. The only slight variation was observed in responses to statements regarding publishing pharmacy practice research and working as part of a multidisciplinary team where lack of capability (not having staff with the required skills) was also in the top three reasons. Furthermore, there was a considerable variation across the different countries, reflecting the differing roles of pharmacists in those countries. The 'clinical pharmacist' role where the pharmacist is visible on the ward and in clinics in a 'patient-facing role', while well established in some countries, is still a rarity in others. For instance, pharmacist prescribing is established in some countries like the UK but is not legally permissible in the majority. In addition, it would appear that many hospitals employ low numbers of pharmacists and technicians in relation to the number of beds they contain, which would support the 'lack of capacity' responses. It is of concern that the hospital pharmacy profession lacks visibility compared to other areas of pharmacy, as it resulted in low student interest in this area. This corresponds to the fact that more than half (52,94 %) hospital pharmacists stated that in their country after graduation more students are not going directly to the hospital pharmacy profession (11). Reasons provided were not being aware of this profession, having better-paid opportunities in other areas of pharmacy or having limited number of specialisations for hospital pharmacy. However, the majority of countries have workforce development plans in action, which could help in solving this problem in the future.

When looking at the statement where the number of positive responses was lowest (statement 4.4 - the pharmacists in our hospital enter all medicines used onto the patient's medical record on admission), there was no statistical improvement in results in the 2022/23 EAHP Investigation, compared with the 2018 statement survey and 2015 baseline survey. This is not surprising since creating the capacity and developing the capability in the workforce to deliver clinically oriented services is a gradual process. As a result, significant changes on a large scale may occur slowly, particularly after the extraordinary circumstances mentioned earlier.

As identified in the results of the self-assessment tool and practice-specific questions (section C), pharmacists in most countries were involved in managing SARS-CoV-2 vaccines which have diverted staff away from day-to-day pharmacy duties. To add to this, a new medicine verification system of implementation of the FMD was established at the same year when COVID-19 started. This situation is particularly worrying as respondents indicated a significant time loss attributed to handling false positive alarms. Balancing all these demands calls for careful resource allocation and strategic planning to ensure pharmacists' effectiveness while maintaining patient safety. Collaborative efforts are essential to optimize workflows and strengthen support systems. By doing so, healthcare systems can enhance resilience and ensure consistent quality care delivery, even amidst complex circumstances.

Furthermore, it is concerning that clinical pharmacy services are not well developed in some countries since pharmacists are the medicines expert. Pharmacists possess a unique skill set that equips them to provide valuable insights into medication management, ensuring optimal patient outcomes. It is encouraging that a mean of 60% of respondents responded positively to the question 'all prescriptions are reviewed and validated as soon as possible by a pharmacist' which is an improvement on the previous 2018 statement survey (56%). This activity is an essential part of medication safety systems, safeguarding patient safety by minimising the likelihood of medication errors and adverse drug interactions. However, in 40% of instances, this is not happening, raising concerns about the potential risks associated with medication discrepancies, suboptimal dosing, or insufficient patient counselling – all of which can compromise patient safety and treatment efficacy. Recognising pharmacists' vital role in medication management, healthcare systems must prioritise developing clinical pharmacy services, especially where they are lacking. Integrating pharmacists comprehensively into the healthcare team and fostering collaboration can significantly enhance medication safety. This involves overcoming logistical challenges and expanding their responsibilities to ensure their expertise is utilised fully.

While clinical pharmacy services had a lower response rate, digital skills have improved from the last surveys due to the lack of workforce and the need for interoperability. This means that hospital boards have recognised the critical role of hospital pharmacists and the need for digitalisation. However, improvements are needed to adapt to the current situation in the hospital pharmacy profession.

Unsurprisingly, most respondents felt that there should be a greater focus on sustainability from an organisational or management perspective, as this can only be done with collaborative efforts. However, a considerable number of respondents (43%) do not know if they feel empowered to make or try any changes that could improve sustainability. The aforementioned underscores the limited awareness in this area. To bridge this gap, it's necessary to encourage a culture of innovation and empowerment and provide the required support, training, and information on a significant level. In addition, individuals should also be empowered within the healthcare system to contribute to sustainability efforts. By combining from both the organisational and individual levels, sustainability can be enhanced.

Generally, which supports the previous 2018 Statement survey findings, there appeared to be few barriers for hospital pharmacies to engage in procuring, compounding, and distributing medicines. Responses to questions from this section are very positive overall (Table 2) which is unsurprising since this has always been a core function of hospital pharmacy. The importance of traditional roles and the work of pharmacists in reducing the risks associated with these functions should not be underestimated, as pharmacists engage in more clinically focused roles which is also shown in Italian study on roles of hospital pharmacist in Italian healthcare system (12). Whilst all of the points identified in this discussion are supported by the results in the tables and figures, it should be noted that whilst the overall response rate to this year's Investigation was 19%, this low at 16%, excluding those countries where the number of chief pharmacists sent the survey is unknown. Furthermore, in countries with a high response rate, the number of chief pharmacists sent the survey is low, which may have skewed the data. To address problems highlighted in the survey and advance hospital pharmacy, we compiled the following recommendations summarised in Box 1 and 2.

## Conclusion

In conclusion, the similar response rates between the 2022/23 EAHP Investigation and the 2018 statements survey indicate that despite challenges posed by factors like the COVID-19 pandemic and the implementation of the FMD, there hasn't been a significant decline in the overall trend. The responses to questions relating to what may be considered traditional core roles of hospitals (sections 2, 3, and 5) produced more positive responses than newer roles such as clinical pharmacy, education, and research. In addition, a closer examination of specific statements, such as the one referring to pharmacists entering all medicines onto patients' medical records upon admission, highlighted the slight improvement in the 2022/23 EAHP Investigation compared to the 2018 statement survey and 2015 baseline survey. This emphasises the complex process of improving capacity and incorporating new roles in pharmacy, which takes time and persistence. However, challenges persist in implementing clinical pharmacy services, and further exploration is needed to address the obstacles. These included limited capacity, a lack of priority assigned by managers, or other healthcare professionals not recognizing the importance of these services. Consequently, advocacy and education may be required to enhance the role and impact of hospital pharmacists in clinical care. Despite these challenges, hospital pharmacists demonstrated the ability to adapt to evolving demands, including vaccination management. As the healthcare landscape continues to grow, the insights gained from the 2022/23 EAHP Investigation reflect the profession's commitment to delivering high-quality patient care in the face of various challenges. However, the hospital pharmacy profession should gain more visibility to preserve and further develop medication expertise.

## Declarations

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### Competing interests

The authors declare that they have no competing interests.

## Ethics approval statement

This study does not involve human or animal participants therefore patient consent for publication was not required.

## Consent for publication

Not applicable

## Authors' contributions

A study design was developed by DKP, PH, AB, AS and SK. Data analysis were done by RF, CS, CM and JU. Reviewing an editing was done by DKP, RF, CS, CM, JU, PH, AB, AS, NM, CP, SK and GML. All authors read and approved the final manuscript.

## Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

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**Table 1. The six questions where implementation of the statement in question seems to provide the greatest challenge**

Question		Mean* (2022/23)	Mean* (Previous Statement survey 2018)	Mean* (Baseline 2015)
S4.4	The pharmacists in our hospital enter all medicines used onto the patient's medical record on admission.	33.4%	30.3%	28.5%
S6.4	The pharmacists in our hospital routinely publish hospital pharmacy practice research.	39.8%	50.1%	44.2%
S4.5	The pharmacists in our hospital contribute to the transfer of information about medicines when patients move between and within healthcare settings.	42.8%	41.0%	44.0%
S1.1	The pharmacists in our hospital work routinely as part of the multidisciplinary team.	52.5%	47.8%	59.1%
S4.6	The pharmacists in our hospital ensure patients and carers are offered information about their medicines in terms they can understand.	55.9%	56.9%	63.6%
S4.2	All prescriptions in our hospital are reviewed and validated as soon as possible by a pharmacist.	59.9%	54.9%	62.9%

\*Mean: The mean percentage of positive responses to a question across all respondent countries.

**Table 2. All the questions asked in the survey regarding the 44 European Statements of Hospital Pharmacy and the overall percentage of participants who responded positively to the question. Whenever a participant responded negatively to a question, there was usually a follow-up question of ‘What is preventing this?’ Questions where less than 50% of participants gave a positive response have been highlighted in red, and questions where more than 75% of participants gave a positive response have been highlighted in green.**

<b>EAHP Investigation questions</b>		
<b>Section 1: Introductory statements and governance</b>		
S1.1	The pharmacists in our hospital work routinely as part of the multidisciplinary team	52%
S1.3	Our hospital is able to prioritise hospital pharmacy activities according to agreed criteria	68%
S1.5	The pharmacists in our hospital are engaged in the supervision of all steps of all medicine use processes	69%
S1.6	At least one pharmacist from our team is a full member of the Drug & Therapeutics Committee	86%
S1.6.2	The pharmacists in our hospital take the lead in coordinating the activities of the Drug & Therapeutics Committees	70%
S1.7	The pharmacists in our hospital are involved in the design, specification of parameters and evaluation of ICT used within medicines processes	68%
<b>Section 2: Selection, procurement, and distribution</b>		
S2.1	Our hospital has clear processes in place around the procurement of medicines	92%
S2.1.2	Are hospital pharmacists involved in the development of procurement processes	91%
S2.2	The pharmacists in our hospital take the lead in developing, monitoring, reviewing, and improving medicine use processes and the use of medicine-related technologies	76%
S2.3	The pharmacists in our hospital coordinate the development, maintenance, and use of our formulary. The formulary in this context is an evidence-based list of medicines that can be prescribed in your hospital and is not solely based on historical or economic data/factors.	82%
S2.4	Procurement of non-formulary medicines in our hospital is done to a robust process	82%
S2.5	The pharmacy in our hospital has contingency plans for medicines shortages	70%
S2.6	The pharmacy in our hospital takes responsibility for all medicines logistics, including for investigational medicines	89%
S2.7	Our hospital has a policy for the use of medicines brought into the hospital by patients	78%
S2.7.2	Were pharmacists involved in producing the policy for the use of medicines brought into the hospital by patients	67%
<b>Section 3: Production and compounding</b>		
S3.1	The pharmacists in our hospital check if a suitable product is commercially available before we manufacture or prepare a medicine	92%
S3.2	When medicines require manufacture or compounding, we either produce them in our hospital pharmacy or we outsource to an approved provider	87%
S3.3	The pharmacists in our hospital undertake a risk assessment to determine the best practice quality requirements before making a pharmacy preparation	84%
S3.4	The pharmacy in our hospital has an appropriate system in place for the quality assurance of pharmacy prepared and compounded medicines	78%
S3.4.2	The pharmacy in our hospital has an appropriate system in place for the traceability of pharmacy prepared and compounded medicines	83%
S3.5	Our hospital has appropriate systems in place for the preparation and supply of hazardous medicinal products	75%
S3.6	Our hospital has written procedures that ensure staff are appropriately trained to reconstitute or mix medicines in a patient care area	79%
S3.6.2	Were pharmacists involved in approving the written procedures that ensure staff are appropriately trained to reconstitute or mix medicines in a patient care area	68%
<b>Section 4: Clinical pharmacy services</b>		
S4.1	The pharmacists in our hospital play a full part in shared decision-making on medicines, including advising, implementing, and monitoring medication changes	69%
S4.2	All prescriptions in our hospital are reviewed and validated as soon as possible by a pharmacist	60%

S4.3	The pharmacists in our hospital have access to the patients' health record	72%
S4.3.2	The pharmacists in our hospital document their clinical interventions into the patients' health record	51%
S4.3.4	We analyse these clinical pharmacy interventions to inform quality improvement plans	48%
S4.4	The pharmacists in our hospital enter all medicines used onto the patient's medical record on admission	33%
S4.4.2	The pharmacists in our hospital reconcile medicines on admission	44%
S4.4.4	The pharmacists in our hospital assess the appropriateness of all patients' medicines, including herbal and dietary supplements	48%
S4.5	The pharmacists in our hospital contribute to the transfer of information about medicines when patients move between and within healthcare settings	43%
S4.6	The pharmacists in our hospital ensure patients and carers are offered information about their medicines in terms they can understand	56%
<b>Section 5: Patient safety and quality assurance</b>		
S5.2	Our hospital has appropriate strategies to detect errors and identify priorities for improvement in medicines use processes	76%
S5.2.2	Were pharmacists involved in approving these procedures	84%
S5.3	Our hospital uses an external quality assessment accreditation programme to assure our medicines use processes	61%
S5.3.2	Our hospital acts on these reports to improve the quality and safety of our medicines use processes	78%
S5.4	The pharmacists in our hospital report adverse drug reactions	76%
S5.4.2	The pharmacists in our hospital report medication errors	70%
S5.5	The pharmacists in our hospital use evidence-based approaches to reduce the risk of medication errors	78%
S5.5.2	Our hospital pharmacy uses computerised decision support to reduce the risk of medication errors	62%
S5.6	Our hospital has appropriate procedures in place to identify high-risk medicines and minimise the risk from their use	83%
S5.6.2	Are pharmacists involved in implementing these procedures	86%
S5.7	The medicines administration process in our hospital ensures that transcription* steps between the original prescription and the medicines administration record are eliminated	65%
S5.8	Our patient's health records accurately record all allergy and other relevant medicine-related information	88%
S5.9	The pharmacists in our hospital ensure that the information needed for safe medicines use is accessible at the point of care	84%
S5.10	Medicines in our hospital are packaged and labelled to assure they are safely optimised for administration	89%
S5.11	Medicines dispensed by our pharmacy are traceable	86%
<b>Section 6: Education and research</b>		
S6.2	The pharmacists in our hospital are able to demonstrate their competency in performing their roles	89%
S6.3	The pharmacists in our hospital engage in relevant educational opportunities	89%
S6.4	The pharmacists in our hospital routinely publish hospital pharmacy practice research	40%

## Box 1. General recommendations

Further work is needed to support the development of hospital pharmacists in clinically focused activities.

It is clear from analysis of the results from this investigation, as well as previous surveys in 2016, 2017/18, and 2018/19, that there is a relationship between workforce numbers /skill mix and implementation of statements related to clinically focused activities. Therefore, consideration needs to be given to supporting hospitals to develop the capacity and capability to deliver clinically orientated services.

Interestingly, capability became one of the top three barriers to publishing pharmacy practice research and working as a multidisciplinary team. Therefore, sharing good practice initiatives and developing the EAHP website and SILCC initiative to facilitate sharing of best practices should continue. EAHP should encourage those countries where clinical pharmacy is well set to share evidence/business cases which support the development of these services. The EAHP website could also act as a repository of evidence of the benefits of pharmacists' involvement in clinically orientated services or signposting to where there is published evidence in journals.

To encourage awareness of the Statements and participation in practice research, the educational content of the EAHP Congress (posters and presentations) should continue to be linked to the relevant statements.

EAHP can provide a wide range of resources to help raise awareness about the importance of robust hospital and clinical pharmacy services in the hospital setting to deliver better outcomes for patients.

The use of the [Self-assessment tool](#) to measure progress with the Statements implementation should be encouraged to increase their adoption.

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## Box 2. Recommendations for future EAHP surveys

Changes to the previous EAHP Statements Surveys appear to have been well received and should be continued in subsequent surveys:

- Tailor the survey to the needs of a specific country (countries).
- Keep the survey as short and as straightforward to complete as possible.
- Specifically, enquire for each question if capacity and capability are the key barriers to implementation.
- Construct survey response options for each question to identify the obstacles other than capacity and capability.
- Provide more in-depth questions for capacity and capability barriers (e.g., no one is interested in hospital pharmacy).
- Identify the key drivers for change in countries where implementation has occurred or is occurring.

Further work is needed to understand better the low response rate in some countries to determine how this may be improved.

A named person (country coordinator) will send an invite survey link.

Weekly reminders should be sent out by the named person (country coordinator).

Surveys should be done in periods without major holidays, such as Christmas or Easter.

Involvement of the Board members in communication with the countries.