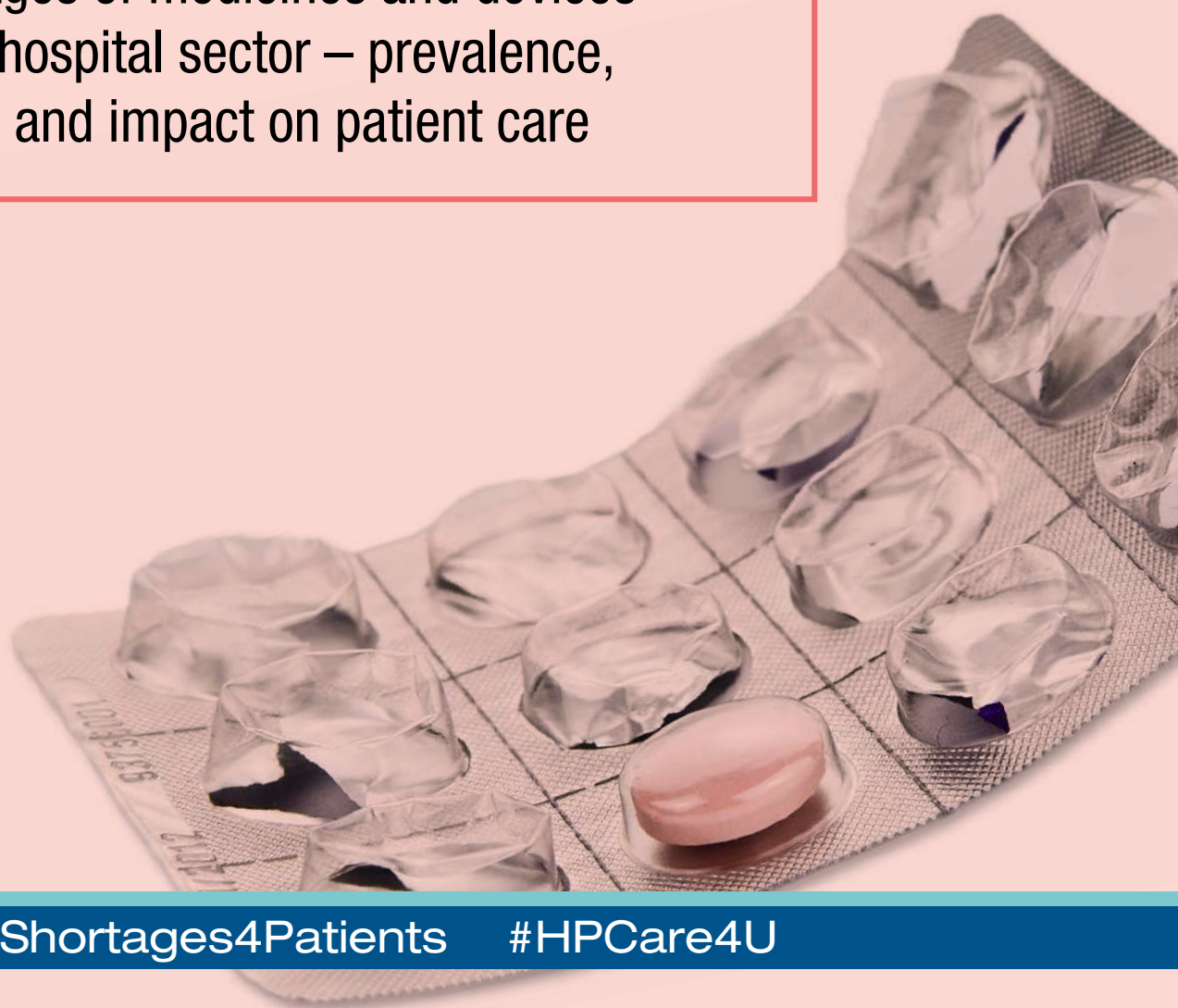


EAHP 2023 **Shortage** **Survey** Report

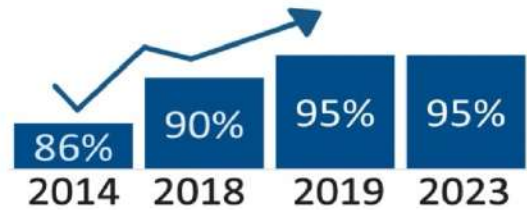
Shortages of medicines and devices
in the hospital sector – prevalence,
nature and impact on patient care



2023 Shortage Survey

ARE MEDICINE SHORTAGES CURRENTLY A PROBLEM?

Yes, the **2023 shortages survey** of EAHP, which was answered by **1497** hospital pharmacists from **36** different countries, showed that **95% of European hospital pharmacists** still experience shortages.



What do hospital pharmacist think is causing the medicine shortages?



70% of hospital pharmacists reported that **IT systems** are not automatically fed with information on ongoing medicine shortages and potential alternatives



In 2022, **55%** of hospital pharmacists experienced **more than 10 times** that there was a shortage of medicines that have only one manufacturer.

Types of medicines most frequent in shortage

Antimicrobial agents



Painkillers






Anesthetic agents



Medicine shortages have a great impact on patient care.

According to hospital pharmacists medicine shortages are leading to:

-  59% DELAY OF CARE
-  43% SUBOPTIMAL TREATMENT
-  35% CANCELLATION OF CARE

2023 **Shortage** Survey EAHP's 2023 Shortages Survey

SHORTAGES IN MEDICAL DEVICES

According to Hospital Pharmacists

In the 2023 shortages survey of EAHP, which was answered by **1497** hospital pharmacists from **36** different European countries,

61% of European hospital pharmacists reported that the shortage of medical devices are a problem in their hospital.

What do hospital pharmacists think is causing shortages with regards to medical devices?



Supply chain problems



Discontinuance of
a medical device component



37% of hospital pharmacist reported that shortages are only communicated if specific questions on the availability of the devices are asked via email



Content

Foreword by the President	4
Executive Summary	5
Background	6
Response rate	7
Prevalence of shortages of medicines in European Hospitals	9
Prevalence of shortages of medical devices in European Hospitals	21
Medicines shortages management	27
Medicine shortages patient impact	47
Patients' views and experiences	59
Annex	64

Foreword by the President

For over a decade, members of the European Association of Hospital Pharmacists (EAHP) have increasingly reported difficulties in sourcing medicines required in their hospitals. Consequently, the profession with the support of EAHP has been working on raising awareness about the problems that cause medicines and medical devices shortages. To this end, hospital pharmacists have proactively shared information with other healthcare professionals in their working environments on how shortages are managed and continuity of supply is ensured.



However, despite the early advocacy efforts by EAHP and the ongoing interventions of its members, reports on medicines shortages continued to materialise at an accelerating speed throughout Europe. To establish a better understanding of the problem in European hospitals, EAHP conducted different surveys in 2013, 2014, 2018, 2019 and 2023 which illustrated the far-reaching consequences that medicines shortages pose. In particular, the percentage of hospital pharmacists reporting shortages to be an issue in terms of delivering the best care to patients has seen a significant increase in the past 5 years along with 95% of hospital pharmacists stressing that medicines shortages are a problem faced regularly in their daily work.

Calls for action put forward by EAHP which urged the European Commission and Member States to target shortages through a mix of reactive and proactive measures and to improve communication about them vis-à-vis hospital pharmacists still remain unaddressed as shown by the results of the 2023 EAHP Shortage Survey. Problems caused by medicine shortages remain serious, threaten patient care in hospitals and require urgent action. To ensure that patients receive the medication they need to improve their health and prevent and cure diseases, EAHP urges policymakers to include the following measures in the revision of the EU's General Pharmaceutical Legislation:

- requiring the creation and regular maintenance of safety plans and risk assessments for manufacturers,
- the establishment of multistakeholder task force teams to perform joint risk assessments,
- incentivising timely sharing of information by companies, e.g., through a reward system or a whitelist, and building, strengthening and improving the EMA shortage database
- ensuring in relation to the development of a list of essential medicines that it can be adjusted by countries to serve their national needs,
- mandating Member States to set up national task force teams, comprised of national agencies, industry and frontline healthcare professionals like hospital pharmacists that discuss and adopt proactive measures for combatting shortages,
- exploring the feasibility of raw material production in Europe for certain products, especially when it comes to products with a high dependency on outside sources,
- anchoring the role of healthcare professionals, in particular hospital pharmacists, in the field of compounding, meaning that compounding possibilities to offer adequate patient care should be enhanced,
- introducing more prudent procurement practices considering new realities of ongoing shortages and supply chain challenges.

András Süle
President of the European Association of Hospital Pharmacists

Executive Summary

Medicines availability in 2023 started very much as it ended in 2022. News outlets across Europe reported the increase in respiratory infections, in particular in children, leading to shortages of vital treatment options, including antibiotics. At the same time, healthcare professionals, patient representatives and notified bodies were ringing the alarm bells due to increasing concerns about medical device shortages.

Five years have passed since the European Association of Hospital Pharmacists (EAHP) conducted its last comprehensive investigation into the problem of medicine shortages. Consequently, the Association decided to launch a new Shortage Survey, this time looking at both the shortage of medicines and medical devices in the hospital environment.

The 2023 Shortage Survey, focused on medicinal products and medical devices, looked to investigate the reasons and impacts of shortages on patients in European hospitals as well as possible solutions. Besides hospital pharmacists, EAHP's Survey targeted other healthcare professionals working in hospitals, including nurses and physicians, as well as patients and their carers who have experienced shortages during their hospital stay.

The 2023 Shortage Survey gathered 1497 responses from hospital pharmacists. Like in 2019, 95% of survey participants working in a hospital pharmacy reported that medicine shortages are a major problem in their hospital. In comparison only 86% of other healthcare professionals, 84% of physicians and 68% of nurses considered medicine shortages to be a current problem in the hospital they are working in, in terms of delivering the best care to patients. For medical devices shortages, all four professional groups had very similar views with 61% of hospital pharmacists, 57% of physicians, 55% of other healthcare professionals and 46% of nurses indicating that these caused problems for their patients. The causes of medicine shortages that were mentioned by survey respondents in 2023 did not differ much from those shared in

2019. The global shortage of an active pharmaceutical ingredient (API), manufacturing problems and supply chain problems were named the most by hospital pharmacists. For medical devices, supply chain problems ranked first, followed by a shortage or discontinuance of a component, part or accessory of the medical device. Concerning patient impact, more than half of the hospital pharmacists (61%) stressed that they had experienced shortages having an impact on patient care in their hospital. A similar response rate was observed for physicians (59%) and other healthcare professionals (66%). Compared to 2019 the figures did not alter much for these three professional groups. For nurses, the rate of those agreeing with this statement increased in the past 5 years and now 53% of them reported a negative impact on patient care. Delays in care or therapy, suboptimal treatment and cancellation of care were frequently reported as factors that influence patient outcomes.

In comparison to the information collected in 2019, the groups of medicines most frequently in shortage did not change slightly. Over two-thirds of the hospital pharmacists (76%) who responded to this question selected antimicrobial agents as the area of medicine that is most commonly in short supply in their hospitals. Analgesics (43%) followed in second place and anaesthetic agents (37%) ranked third. In 2019, oncology medicines – which now ranked fourth – had been in second place and anaesthetic agents in third.

Besides inquiring about the shortage reporting database that existed in each country, the 2023 Shortage Survey also investigated the usefulness of the national reporting system. Only half of the participating hospital pharmacists deemed their national reporting system useful and regularly updated, while half of the nurses had the opposite view. Other healthcare professionals had the best impressions with 67% agreeing with the suitability of their reporting system. Risk assessments which are a great mitigation measure, were only carried out by 15% of hospitals. This figure increased by 5% since 2019.

Background

For more than a decade the European Association of Hospital Pharmacists (EAHP), has been raising awareness about the problem of medicine shortage and its impact on patients in particular in the hospital environment. Five surveys were conducted by EAHP in 2013, 2014, 2018, 2019 and 2020. The results of these surveys have provided an overview of the severity of the problem as well as its impact on overall patient care.

The 2023 Shortage Survey sought to investigate some of the reasons for shortages of medicines and medical devices in hospitals as well as the impact on patients. In addition, it aimed at collecting solutions and best practices currently applied at the local, regional and national levels.

The survey targeted hospital pharmacists, nurses, physicians, other healthcare professionals and patients. Data from these groups were collected between 27 February and 19 May 2023. The survey questions were made available via SurveyMonkey in Czech, English, French, Hungarian, Romanian, Serbian and Spanish.

EAHP's survey activities in the field of medicines shortages are closely linked to the European Statements of Hospital Pharmacy, in particular Statement 2.5 ('Each hospital pharmacy should have contingency plans for shortages of medicines that it procures.'). Consequently, question 33 of the 2023 Shortages Survey specifically investigated the existence of contingency plans or protocols in hospitals.

An analysis aimed at detecting statistically significant differences in the proportion of respondents in a country reporting shortage to be 'a problem in terms of delivering the best care to patients and/or operating the hospital pharmacy' for the 2018, 2019 and 2023 Surveys were performed. A similar analysis was carried out for the question on the 'causes of medicine shortages in the hospital/country' included in the 2019 and 2023 Surveys.

p	p-value
χ^2	Chi-squared statistic
Df	Degrees of freedom
CI	Confidence interval
OR	Odds ratio

Table 1 Terminology for the statistical terms.

Response Rate

Question 1: In which country do you practice/live?, Question 2: Please identify yourself. I am...

Answers to EAHP's 2023 Medicines Shortages Survey were received from 58 countries, including EAHP's 36¹ member countries. The responses from the 22 countries not represented by EAHP which included many located in Africa were not taken into account for the analysis of this survey. A short summary is however included in Annex 1.

Hospital pharmacists submitted 1497 responses to the 49 questions posed by the survey. The table below provides information on the response rate per country to EAHP's Medicines Shortages Surveys in 2014, 2018, 2019 and 2023. While the response rate between 2018 and 2019 increased, it decreased between 2019 and 2023. The countries for which the response rate slightly increased (more than 5) over the past four years were Croatia (+9 responses), Estonia (+8 responses), Italy (+29 responses), Latvia (+5 responses), Malta (+5 responses), North Macedonia (+8 responses), Slovenia (+5 responses), Türkiye (+13 responses) and the UK (+7 responses).

Country	Responses (2023)	Responses (2019)	Responses (2018)	Responses (2014)
Austria	24	44	29	21
Belgium	101	135	90	94
Bosnia and Herzegovina	14	26	19	9
Bulgaria	9	9	3	6
Croatia	32	23	26	25
Cyprus	4	2	2	1
Czech Republic	51	114	26	4
Denmark	4	2	10	25
Estonia	20	12	17	15
Finland	9	12	33	1
France	208	358	192	3
Germany	206	207	78	10
Greece	33	110	84	14
Hungary	17	37	33	12
Iceland	1	2	9	4
Ireland	18	43	51	47
Italy	63	34	73	41
Latvia	5	0	4	2
Lithuania	3	2	1	8
Luxembourg	8	7	3	0
Malta	8	3	6	11
Montenegro	5	6	4	0
North Macedonia	42	34	14	4
Norway	3	21	21	11
Poland	12	12	32	13
Portugal	69	129	85	42
Romania	20	69	24	2
Serbia	59	77	20	8
Slovakia	72	100	23	16
Slovenia	27	22	18	5
Spain	107	198	190	105
Sweden	75	77	5	0
Switzerland	40	83	67	7
The Netherlands	17	29	20	11
Türkiye	21	8	61	5
UK	90	83	291	7
Total	1497	2130	1664	582

Table 2 - Response rate of hospital pharmacists (N=1497) to EAHP's 2023 Shortages Surveys grouped by country compared to figures from the 2019, 2018 and 2014 Medicine Shortage Survey.

¹ Cyprus became an EAHP member in June 2023 and also contributed to the 2023 Shortage Survey.

To ensure data comparability with the results of 2019, EAHP asked again for feedback from patients, physicians, nurses and other healthcare professionals. 28 patients provided feedback to eight patient-specific questions (questions 75 to 83 of the survey) which touched on their experiences with medicine and device shortages during their hospital stay. The 24 questions (questions 50 to 74 of the survey) targeted physicians, nurses and other healthcare professionals. Similar to the patient feedback also input from nurses (N=22), physicians (N=57) and other healthcare professionals (N=148) decreased.

Country	Responses (2023)				Responses (2019)			
	Patients	Physicians	Nurses	HCPs	Patients	Physicians	Nurses	HCPs
Austria	-	-	-	-	-	2	-	1
Belgium	13	1	-	-	7	11	1	4
Bosnia and Herzegovina	-	1	-	3	-	1	5	1
Bulgaria	-	-	-	1	-	-	-	1
Croatia	-	10	-	6	2	4	33	4
Cyprus	-	2	1	4	1	-	1	-
Czech Republic	-	-	-	-	-	-	-	2
Denmark	-	-	-	-	1	-	-	-
Estonia	-	-	-	-	52	5	3	34
Finland	-	-	-	1	6	1	-	4
France	3	5	-	4	72	59	13	27
Germany	-	-	1	3	1	-	-	-
Greece	3	3	6	4	-	-	-	3
Hungary	1	-	-	1	2	-	2	23
Iceland	-	-	-	-	7	12	3	4
Ireland	-	-	-	3	-	-	-	1
Italy	-	2	1	6	-	1	-	-
Latvia	-	-	-	1	-	-	-	1
Lithuania	1	-	-	-	7	11	1	4
Luxembourg	-	-	-	-	-	1	5	1
Malta	-	-	-	1	-	-	-	1
Montenegro	1	2	2	2	-	-	-	-
North Macedonia	-	1	2	1	-	-	1	-
Norway	-	-	-	-	1	-	-	3
Poland	-	1	-	-	-	-	-	1
Portugal	-	3	-	1	16	8	1	8
Romania	-	-	-	1	73	39	6	49
Serbia	2	8	5	30	6	3	10	13
Slovakia	-	17	1	4	57	49	61	24
Slovenia	-	-	-	-	-	1	-	3
Spain	2	-	1	5	5	6	1	11
Sweden	-	-	-	6	1	1	1	14
Switzerland	-	-	1	2	1	-	1	5
The Netherlands	1	-	-	1	4	2	2	9
Türkiye	-	1	-	1	1	-	-	-
UK	1	-	1	56	68	1	4	36
Total	28	57	22	148	391	218	155	256

Table 3 – Response rate of patients (N=29), physicians (N=57), nurses (N=22) and other healthcare professionals (N=148) to EAHP's 2023 Shortages Survey grouped by country compared to figures from the 2019 Medicine Shortage Survey.

The other healthcare professionals mostly worked as community pharmacists or pharmacy technicians working in both the hospital and community settings. Some were also active in purchase/procurement management.

Prevalence of shortages of medicines in European hospitals

Question 3 (hospital pharmacists) | Question 50 (physicians, nurses and other healthcare professionals): Are shortages of medicines a current problem in the hospital you are working in, in terms of delivering the best care to patients and/or operating the hospital pharmacy?

A large majority (95% | N=1429/1497) of the hospital pharmacists that answered this question, agreed that medicines shortages are frequently encountered in their hospital, while only 4% (N=53/1497) believed that medicines shortages are not a current problem for delivering the best care to patients and/or operating the hospital pharmacy and 1% (N=15/1497) could not answer.

The figures of EAHP’s 2019 Medicines Shortages Survey are very similar with 95% of hospital pharmacists agreeing that are a problem in the hospital they are working in. This shows that the shortage issue has not grown but it also did not decrease since EAHP’s last survey on this topic.

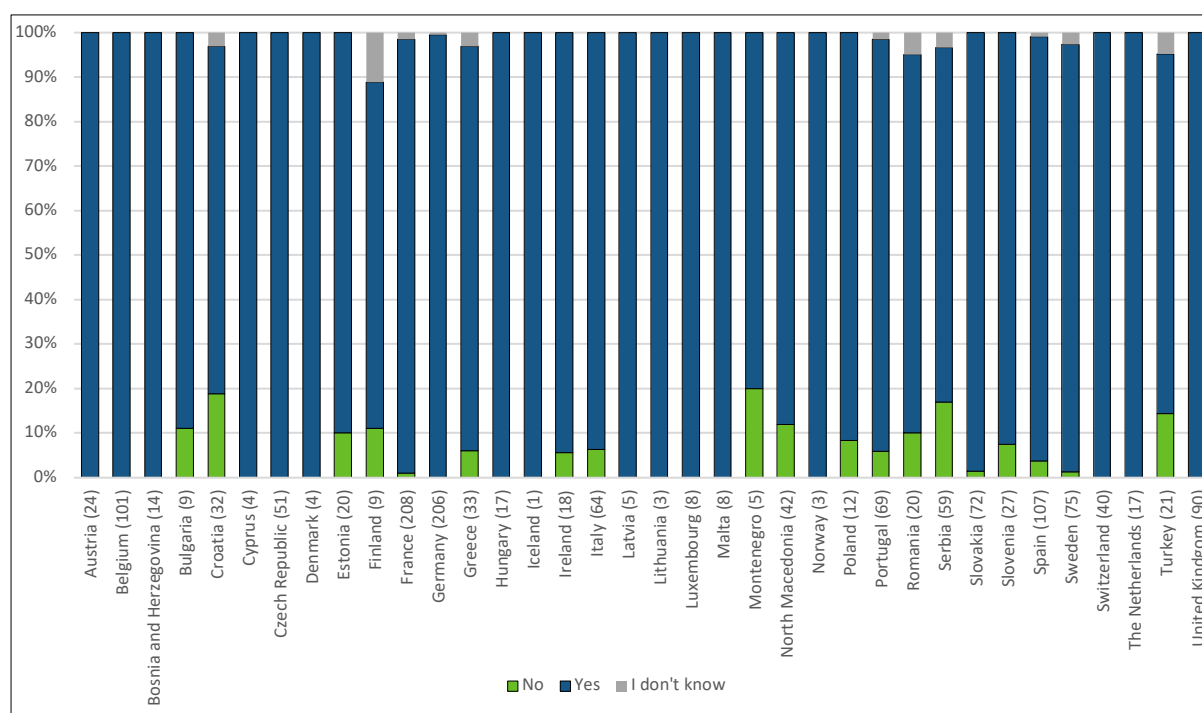
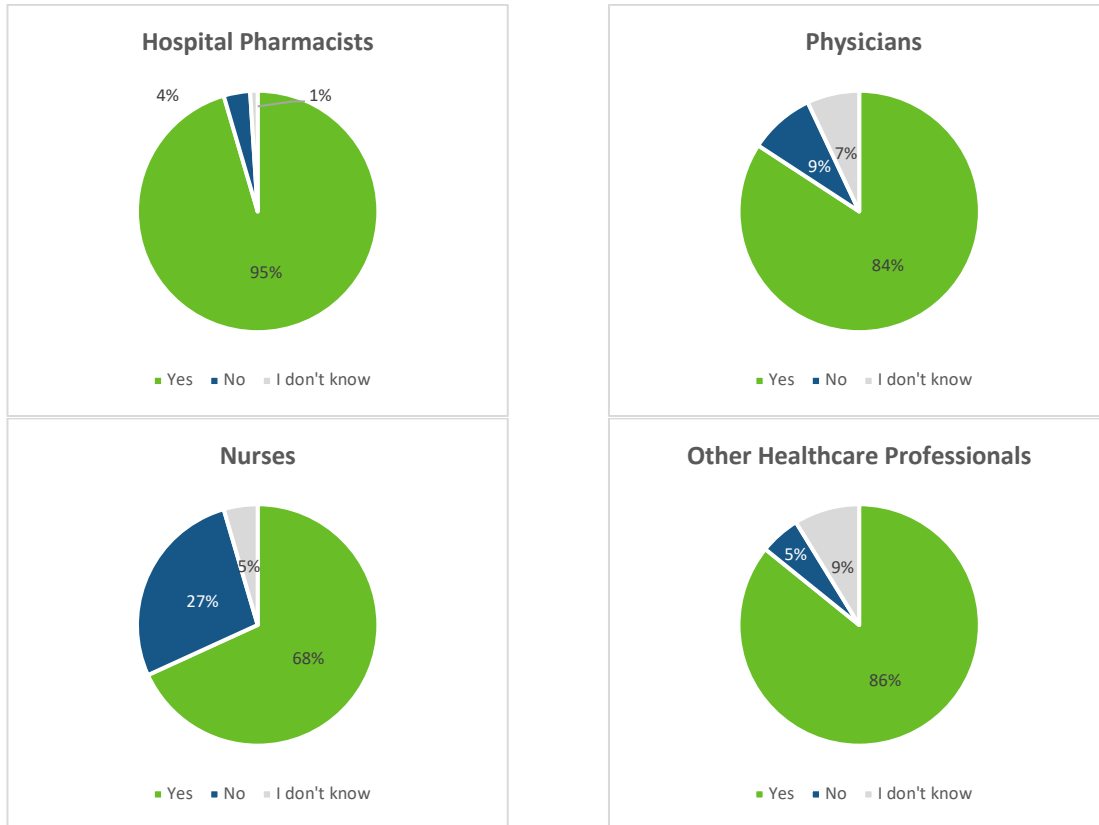


Figure 1 Percentage of responses by hospital pharmacists (N=1497) for question 3 ‘Are shortages of medicines a current problem in the hospital you are working in, in terms of delivering the best care to patients and/or operating the hospital pharmacy?’, grouped by country.

The views of the other professions differ from those of hospital pharmacists. While the majority of other healthcare professionals (86% | N=127) agreed that medicine shortages are a problem, only 68% (N=15) of nurses shared this view. The number of agreeing physicians increased from 71% in 2019 to 84% (N=48) in 2023.



Figures 2, 3, 4 and 5 Percentage of responses for question 3 by hospital pharmacists (N=1497) and question 50 by physicians (N=57), nurses (N=22) and other healthcare professionals (N=148) 'Are shortages of medicines a current problem in the hospital you are working in, in terms of delivering the best care to patients?', grouped by profession.

The third question answers statistical analysis was made for all the previous surveys (2018, 2019, and 2023) in order to identify possible significant differences in the proportion of participants who answered yes or no, respectively.

Survey's year	No	Yes
2018	116	1491
2019	100	2036
2023	53	1429

Table 4 Comparison between 2018, 2019 and 2023 for the Yes and No answers to question number 3 on 'Are shortages of medicines a current problem in the hospital you are working in, in terms of delivering the best care to patients?'

The chi-squared test showed a statistically significant difference in the frequencies of yes/no responses between the 3 surveys [$\chi^2(5225, df = 2) = 22.555, <0.001$].

The post-hoc analysis showed a significantly greater proportion of shortages reporting in the 2019 and 2023 surveys compared to that in 2018. However, no statistically significant difference was found when comparing the 2019 and 2023 data. Therefore, despite the increasing trend in reporting shortages over the years, no significant change has occurred since the last two surveys.

Chi-squared comparison	Adjusted p. value (Bonferroni)	Significance
2018vs2019	0,001	**
2019vs2023	0,123	N.S.S.
2018vs2023	0,000	***
Significance codes: 0 " 0.001 " 0.01 " 0.05 '. N.S.S. = Not Statistically Significant."		

Table 5 Post-hoc analysis to the question number 3 on 'Are shortages of medicines a current problem in the hospital you are working in, in terms of delivering the best care to patients?' Comparison between 2018, 2019 and 2023.

Question 4 (hospital pharmacists) | Question 51 (physicians, nurses and other healthcare professionals): What do you see as the cause of medicine shortages in your hospital/country?

When asked what they believed to be the possible reasons for medicines shortages hospital pharmacists named the global shortage of an active pharmaceutical ingredient (API) (77% | N=1148), manufacturing problems (67% | N=1007) and supply chain problems (50% | N=752) as their top three answers. In comparison to 2019, nothing changed. Also 4 years ago, hospital pharmacists ranked the global shortage of an active pharmaceutical ingredient (72%), manufacturing problems (72%) and supply chain problems (49%) as the top three contributors to medicine shortages in their countries.

The top three answers were the same for other healthcare professionals, with 74% (N=109) choosing global shortage of API as one of the possible causes of medicines shortages in their hospital, 58% (N=86) ticking manufacturing problems and 55% (N=82) opting for supply chain problems. For physicians, the top three responses were the price of a medicine (either too low or too high) with 49% (N=18), manufacturing problems (46% | N=26) and the global shortage of API (39% | N=22). Interestingly only the first choice was also in the top three responses in 2019. For nurses, the top three responses were similar to those of hospital pharmacists with the global shortage of an API (59% | N=13), manufacturing problems (27% | N=6) and supply chain problems (27% | N=6) in the top 3.

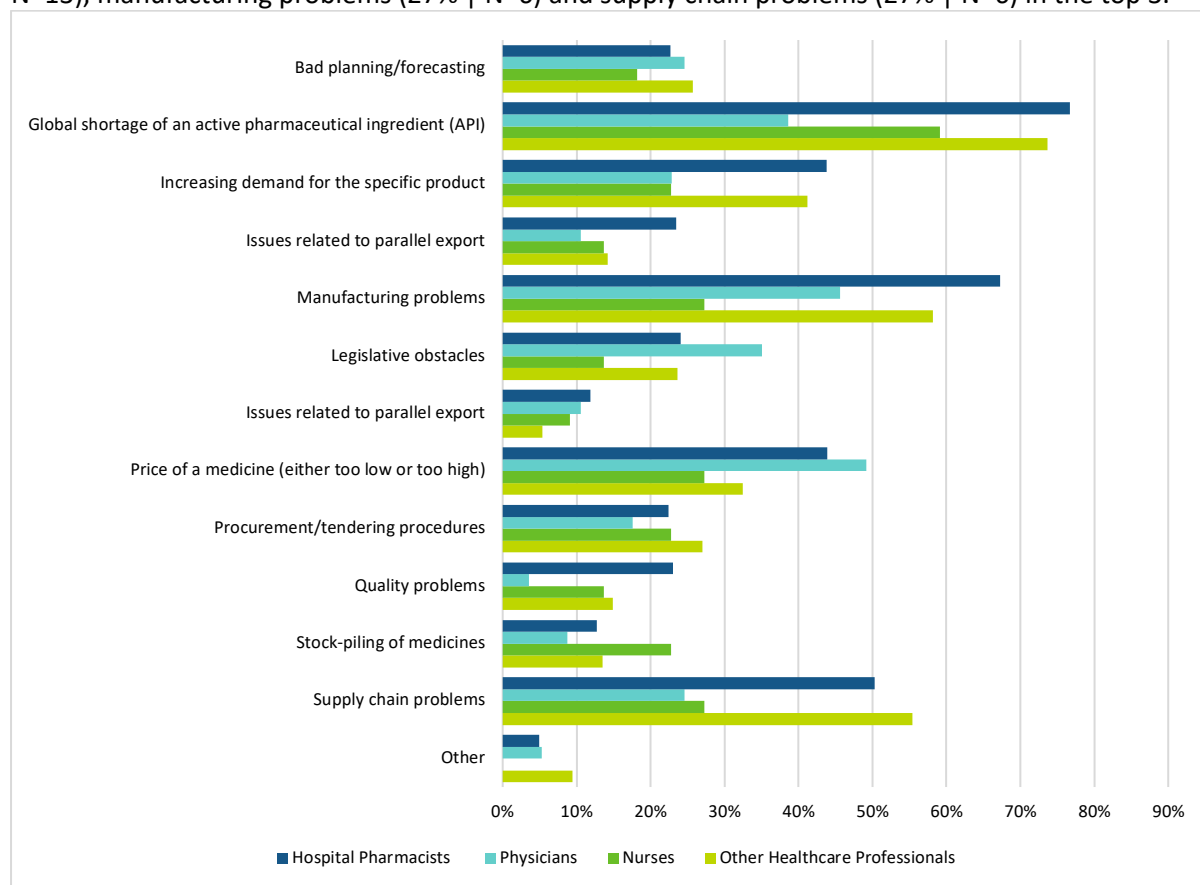


Figure 6 Percentage of responses for question 4 by hospital pharmacists (N=1497) and question 50 by physicians (N=57), nurses (N=22) and other healthcare professionals (N=148) 'What do you see as the cause of medicine shortages in your hospital/country?', grouped by profession.

The statistical analysis focused on the question above was conducted exclusively for the 2023 and 2019 surveys, as it was not included in the 2018 survey. The results revealed that 'Global shortage of API,' 'Increasing demand for specific products,' and 'Legislative obstacles' were more likely to be chosen as the causes of shortage in the 2023 survey (OR > 1). Conversely, 'Bad planning/forecasting,' 'Manufacturing problems,' and 'Issues related to parallel export' were more likely to be selected as the causes of shortage in the 2019 survey (OR <1).

Answer	β (reported as OR)	-C.I. 95%	+C.I. 95%	p.value	Significance
(Intercept)	0,699	0,589	0,827	0,0001	***
Bad planning/forecasting	0,452	0,385	0,526	0,0001	***
Global shortage of API	1,386	1,180	1,648	0,0000	***
Increasing demand for specific products	1,987	1,721	2,296	0,0000	***
Manufacturing problems	0,787	0,671	0,918	0,0045	**
Legislative obstacles	1,209	1,021	1,432	0,0273	*
Issues related to parallel export	0,677	0,582	0,781	0,0001	***
Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05					

Table 6 Comparison between 2019 and 2023 on the question 'What do you see as the cause of medicine shortages in your hospital/country?', grouped by profession.

It is worth noting that question #4 in the 2019 survey also included additional response options (Stockpiling of medicines, Procurement/tendering procedures, Price of a medicine, Quality problems, Supply chain problems), which, as they were not included in the 2023 survey, were not considered in the comparative analysis between the two surveys.

Finally, in the 2019 survey, the response category 'Bad planning/forecasting' was divided into two response options: 'Poor planning/forecasting by hospital pharmacy' and 'Poor planning/forecasting by entities that deliver medicines to the hospital.' In order to create a single, distinct independent variable, as seen in the 2023 survey, these options were aggregated, with a value of 1 assigned if at least one of the two options was chosen, and 0 if neither of the poor planning -related options was selected by the respondent.

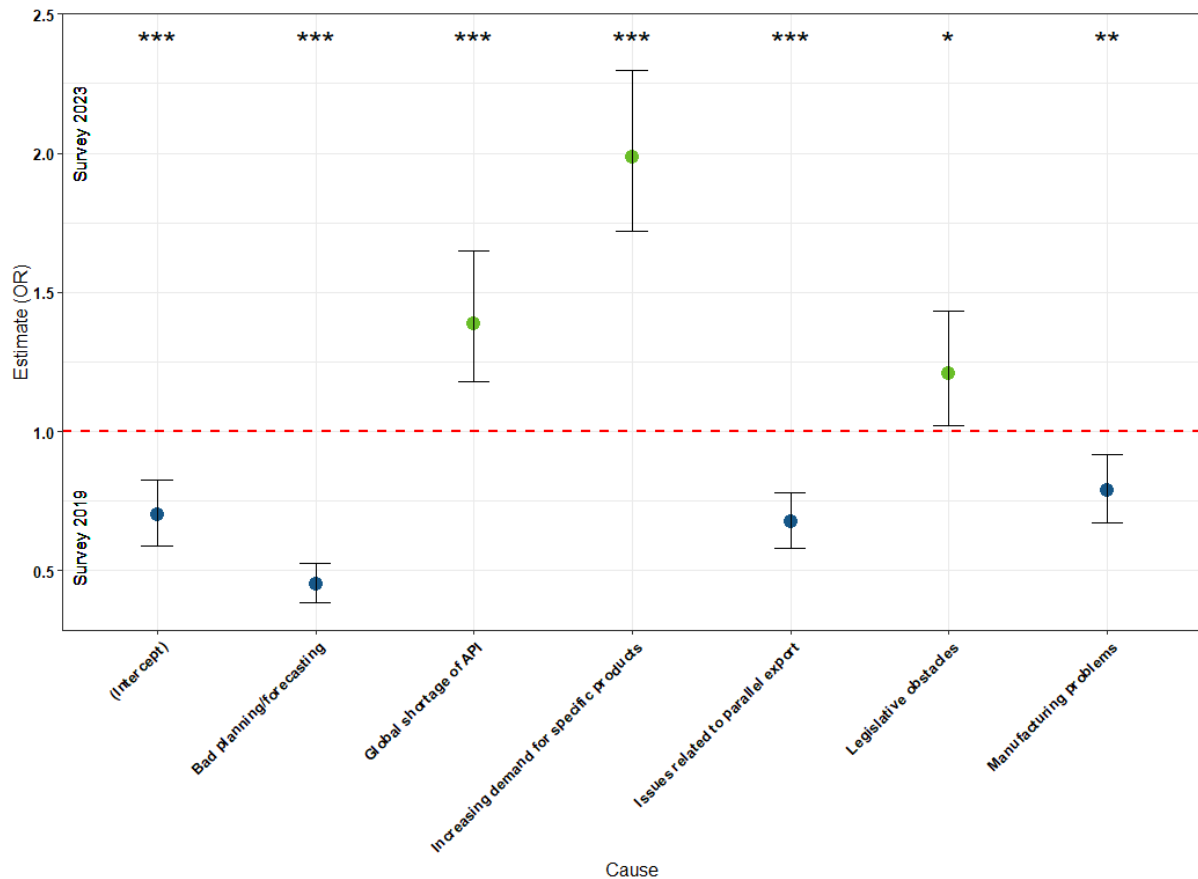


Figure 7 Odds Ratios for a specific cause of shortage choice in the 2023 vs. 2019 surveys. The regression coefficients are reported as OR \pm 95% CI (coloured dots and black lines). An OR greater than 1 suggests a higher likelihood of selecting that cause of shortage in 2023 compared to 2019. Conversely, an OR less than 1 indicates a lower likelihood in 2023 compared to 2019. Asterisks denote statistically significant ORs * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Question 5 (hospital pharmacists): At which level is medicine tendering carried out in your country?

Hospital pharmacists were then asked at which level medicines tendering is carried out in their country. Like in 2019, the answers of hospital pharmacists were mixed with 33% (N=477) indicating that tendering was carried out in the hospital and nationally, followed by at the hospital (22% | N=310) and nationally (22% | N=298). The remaining quarter of respondents worked in hospitals where tendering was conducted both regionally and in the hospital (13% | N=189) or only regionally (11% | N=164).

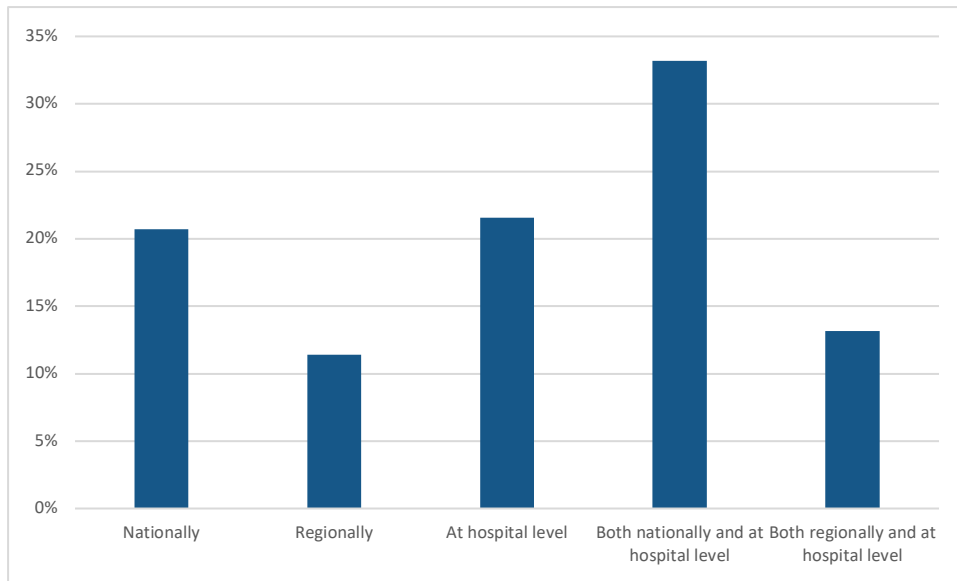


Figure 8 Percentage of responses by hospital pharmacists (N=1438) for question 5 'At which level is medicines tendering carried out in your country?'

As highlighted in EAHP's position paper on procurement the procedures for medicines tendering vary significantly across Europe and are conducted at different levels in different countries. The answers to question 5 therefore reflect the diverse procurement landscape in Europe.

Question 6 (hospital pharmacists) Are you as a hospital pharmacist involved in medicines tendering in your hospital?

Hospital pharmacists had to indicate whether they were involved in medicines tendering. More than half (63% | N=908) answered positively to this question. A small group (3% | N=48) could not answer the question and selected the option 'I don't know', while the rest of the respondents (34% | N=482) indicated non-involvement. This demonstrates that hospital pharmacists play a substantial role in medicine tendering.

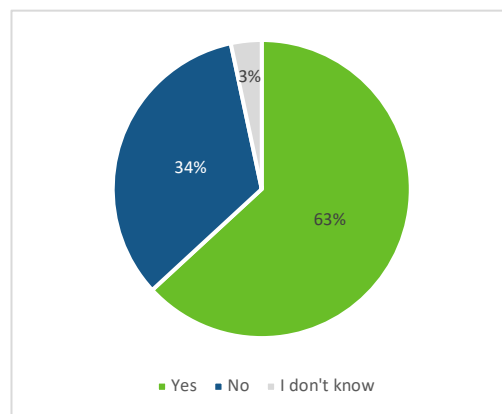


Figure 9 Percentage of responses by hospital pharmacists (N=1438) for question 6 'Are you involved in medicines tendering?'

Question 7 (hospital pharmacists) | Please mark all criteria relevant to the medicines tendering procedure in your country.

Hospital pharmacists who answered positively to the previous question were provided with the opportunity to choose which criteria were the most relevant for the tendering process. The majority selected the lowest price of a medicine (88% | N=775). Quality standards – such as good manufacturing practices, legislation and others – ranked second (64% | N=562) and the assessment of suppliers was the third most relevant criterion (60% | N=526). For around one-third (35% | N=309) the storage capacity of a wholesaler or provider was relevant, while 22% (N=196) deemed the number of active pharmaceutical ingredient (API) providers important.

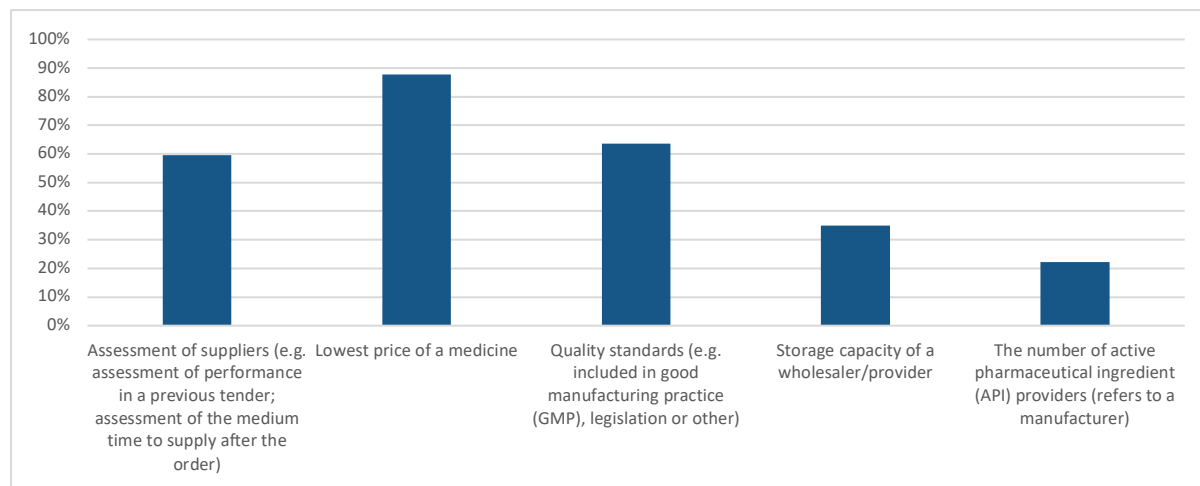


Figure 10 Percentage of responses by hospital pharmacists (N=884) for question 7 ‘Please mark all criteria relevant for the tendering procedure’, grouped by profession. (Note that this was a tick-all question)

Question 8 (hospital pharmacists): In your experience, in 2022 how many times have you experienced a shortage of a medicine, which is provided by a single provider (manufacturer or wholesaler)?

The majority of hospital pharmacists (55% | N=748) stated that they had experienced a shortage of a medicine in 2022, which was provided by a single manufacturer or wholesaler more than ten times. Also, shortages that occurred four to six times in 2022 for a single provider were with 21% (N=281) quite frequent. To avoid this problem, one possible solution could be to ensure a diverse set of suppliers for medicines.

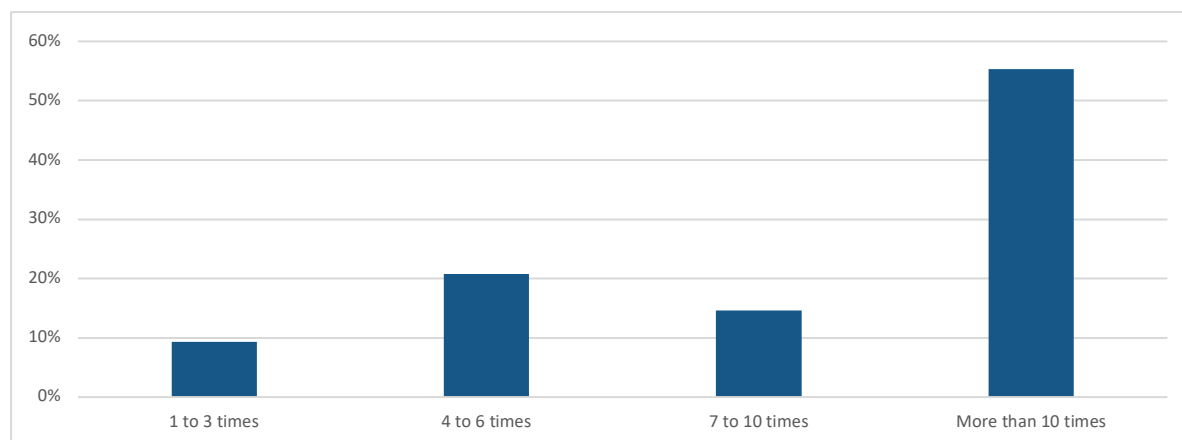


Figure 11 Percentage of responses by hospital pharmacists (N=1352) for question 8 ‘In your experience, in 2022 how many times have you experienced a shortage of a medicine, which is provided by a single provider (manufacturer or wholesaler)?’.

Question 9 (hospital pharmacists) | Question 52 (physicians, nurses and other healthcare professionals): In your experience, in 2022 how many times have you experienced a shortage of a critical medicine.

When looking at critical medicines the picture looks slightly different. Such a shortage was experienced one to three times in 2022 by 35% (N=473) of hospital pharmacy respondents, followed by 29% (N=387) who experienced it at least four to six times. Another 25% (N=336) had problems with obtaining critical medicines due to a shortage more than ten times in 2022.

Also for physicians (42% | N=24) and nurses (50% | N=11) a critical medicine was most often in shortage for one or three times in 2022. Only other healthcare professionals (43% | N=64) experienced such a scenario more than ten times in the same year.

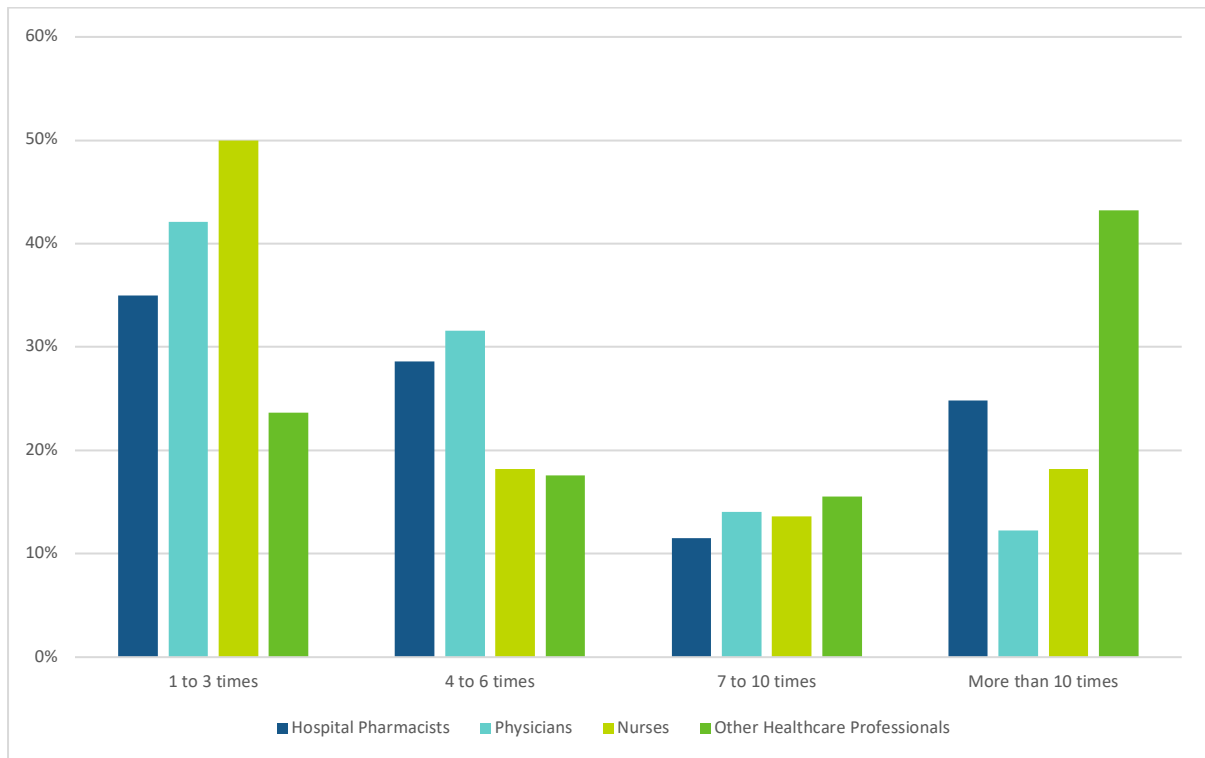
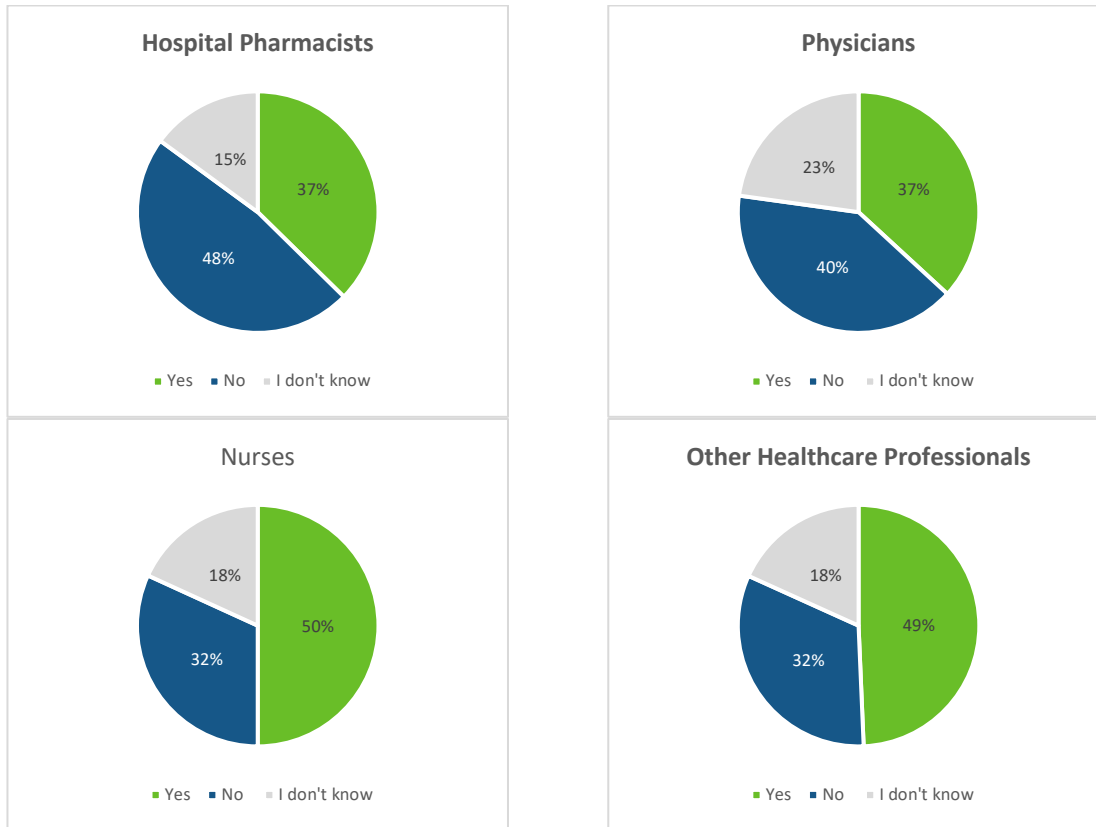


Figure 12 Percentage of responses by hospital pharmacists (N=1352) for question 9, physicians (N=57), nurses (N=22) and other healthcare professionals (N=148) for question 52 'In your experience, in 2022 how many times have you experienced a shortage of a critical medicine.', grouped by profession.

Question 10 (hospital pharmacists) | Question 53 (physicians, nurses and other healthcare professionals): Do you have a list of critical medicines, which should never be in shortage?

Almost half of the hospital pharmacists who responded to the survey (48% | N=645) did not have a list of critical medicines. For nurses (50% | N=11) and other healthcare professionals (49% | N=73) this is exactly the opposite with half of them having such a list in place. Physicians seem to be equally unprepared as hospital pharmacists since only 37% (N=21) of them have a list of critical medicines that should never be in shortage.



Figures 13, 14, 15 and 16 Percentage of responses by hospital pharmacists (N=1352) for question 10, physicians (N=57), nurses (N=22) and other healthcare professionals (N=148) for question 53 'Do you have a list of critical medicines, which should never be in shortage?', grouped by profession.

Question 11 (hospital pharmacists) | Question 54 (physicians, nurses and other healthcare professionals): Please indicate who was responsible for the creation of the list of critical medicines.

Those who have a list of critical medicines in place were asked to provide details on the entity responsible for its creation. For all four professional groups the local healthcare setting committee (hospital pharmacists (48% | N=236), nurses (55% | N=6), physicians (48% | N=10) and other healthcare professionals (38% | N=35)) seems to be frequently in charge followed by the national health authority (hospital pharmacists (41% | N=204), nurses (36% | N=4), physicians (33% | N=7) and other healthcare professionals (37% | N=34)).

The hospital pharmacists that opted for the choice ‘other’ (15% | N=76) indicated that the list of critical medicines was often drafted in-house, sometimes in cooperation with other disciplines. This was confirmed by a few of the other healthcare professionals, nurses and physicians who ticked this option.

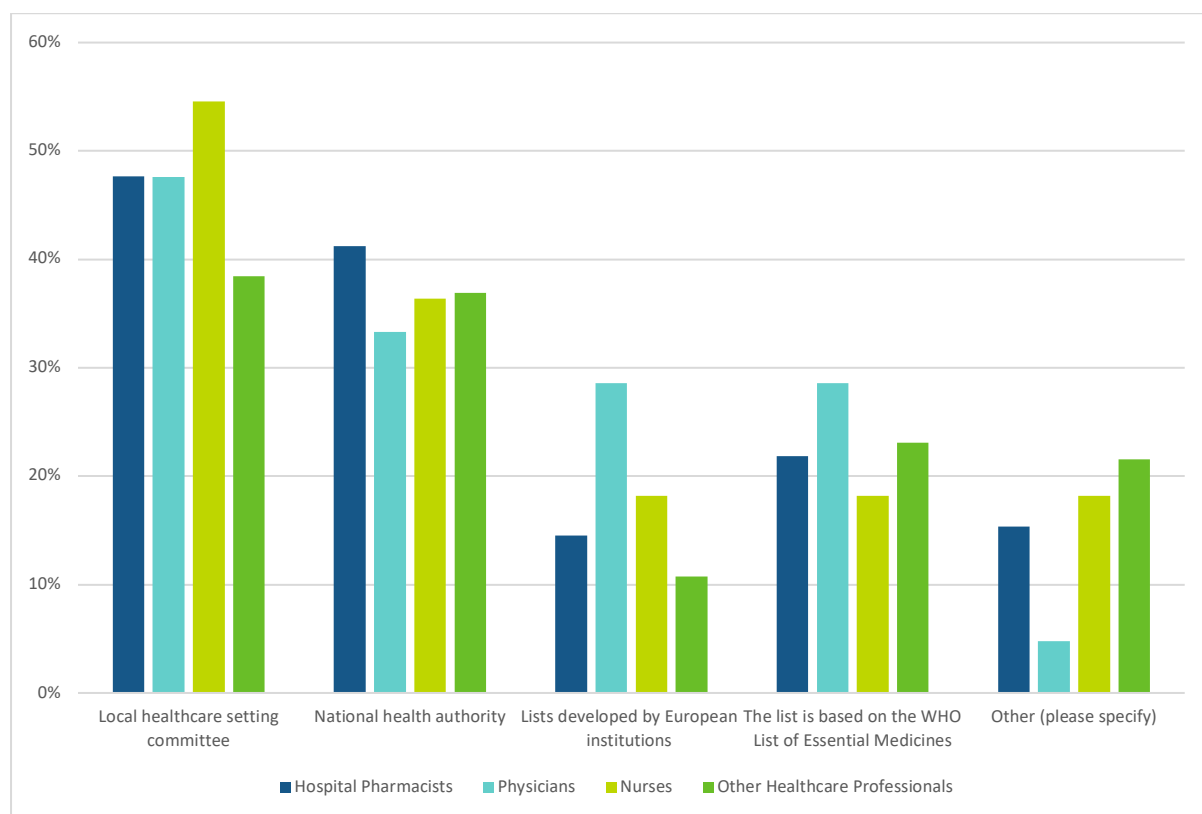


Figure 17 Percentage of responses by hospital pharmacists (N=495) for question 11, physicians (N=21), nurses (N=11) and other healthcare professionals (N=65) for question 54 ‘Please indicate who was responsible for the creation of the list of critical medicines.’, grouped by profession.

Question 12 (hospital pharmacists): Under certain circumstances, is parallel trade prohibited in your country by law (e.g. in case of a shortage of a particular medicine)?

For this question, 27% (N=353) of hospital pharmacists stated that there are laws in their country to restrict or prohibit parallel trade in certain circumstances. A significant portion of respondents answered, 'I don't know' (41% |N=540) which might suggest that hospital pharmacists are either unaware of or unconcerned with legislative instruments such as those which restrict parallel trade.

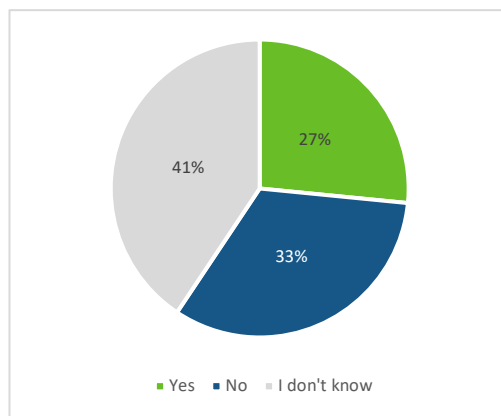


Figure 18 Percentage of responses by hospital pharmacists (N=1329) for question 12 'Under certain circumstances, is parallel trade prohibited in your country by law (e.g. in case of a shortage of a particular medicine)?'.

Question 13 (hospital pharmacists): Please provide a reference to the legislative act prohibiting parallel trade under certain circumstances.

Respondents who answered 'yes' were given the option to specify the national legislation. Several were not in a position to provide feedback, while others referred for example to the Act ensuring the supply of medicines (Austria), the Medicinal Products Act (Germany) and the Public Health Code (France).

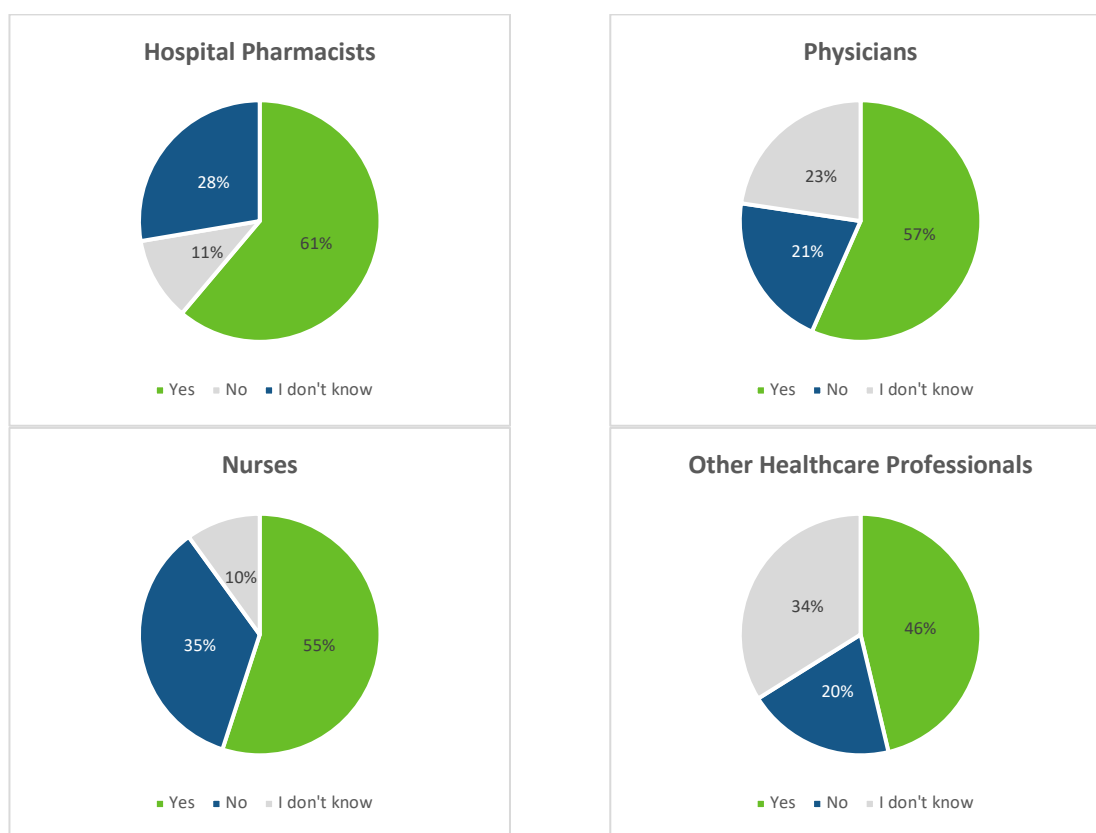
Prevalence of shortages of medical devices in European hospitals

For the first time, EAHP collected information on shortages of medical devices due to issues that were reported in relation to the implementation of the Medical Device Regulation, which previously foresaw to end of the transition period from the old to the new legislative regime in May 2024, meaning that all medical devices would have to conform with the new rules. However, since conformity assessment bodies are suffering from capacity problems to (re)certify old and new medical devices there is a risk that at the end of this transition period, a large share of devices will no longer be available to EU patients. Consequently, the transition period was extended. Producers of medical devices now have until 31 December 2027 for higher-risk devices and until 31 December 2028 for medium and lower-risk devices to meet the legal requirements.

Although this question was not specifically asked in the survey, there is also a lack of information on the shortage of medical devices. To address this it would be important to learn from the experiences with medicine shortages and to use these for dealing with medical devices shortages.

Question 14 (hospital pharmacists) | Question 55 (physicians, nurses and other healthcare professionals): Are shortages of medical devices a current problem in the hospital you are working in, in terms of delivering the best care to patients and/or operating the hospital pharmacy?

When asked about the shortage of medical devices 61% (N=765) of hospital pharmacists reported problems in the hospitals that they are working in, while 28% (N=346) could not give an answer to this question and had to tick the option 'I don't know'. Also, more than half of nurses (55% |N=11) and physicians (57% |N=30) reported similar problems with having device shortages. However, for both of these professions, the group that could not provide an answer was much smaller (nurses (10% | N=2) and physicians (23% |N=12)). For other healthcare professionals, the figures were distributed differently with 46% (N=56) experiencing device shortages and 34% (N=41) not in a position to provide feedback to this question.



Figures 19, 20, 21 and 22 Percentage of responses by hospital pharmacists (N=1251) for question 14, physicians (N=53), nurses (N=20) and other healthcare professionals (N=121) for question 55 'Are shortages of medical devices a current problem in the hospital you are working in, in terms of delivering the best care to patients and/or operating the hospital pharmacy?', grouped by profession.

Question 15 (hospital pharmacists) | Question 56 (physicians, nurses and other healthcare professionals): What do you see as the cause of shortages of medical devices in your hospital/country?

The two most common causes of device shortages included supply chain problems (53% | N=658) and the shortage or discontinuance of a component, part or accessory of the medical device (48% | N=603) for hospital pharmacists. The same answer was provided by other healthcare professionals with 42% (N=51) opting for supply chain problems and 34% (N=41) selecting a shortage/discontinuation as the cause. For nurses, it was the price of the device (45% | N=9) and procurement/tendering procedure (35% | N=7) that was causing problems. The price also played a big role for physicians (47% | N=25) followed by supply chain problems (26% | N=14).

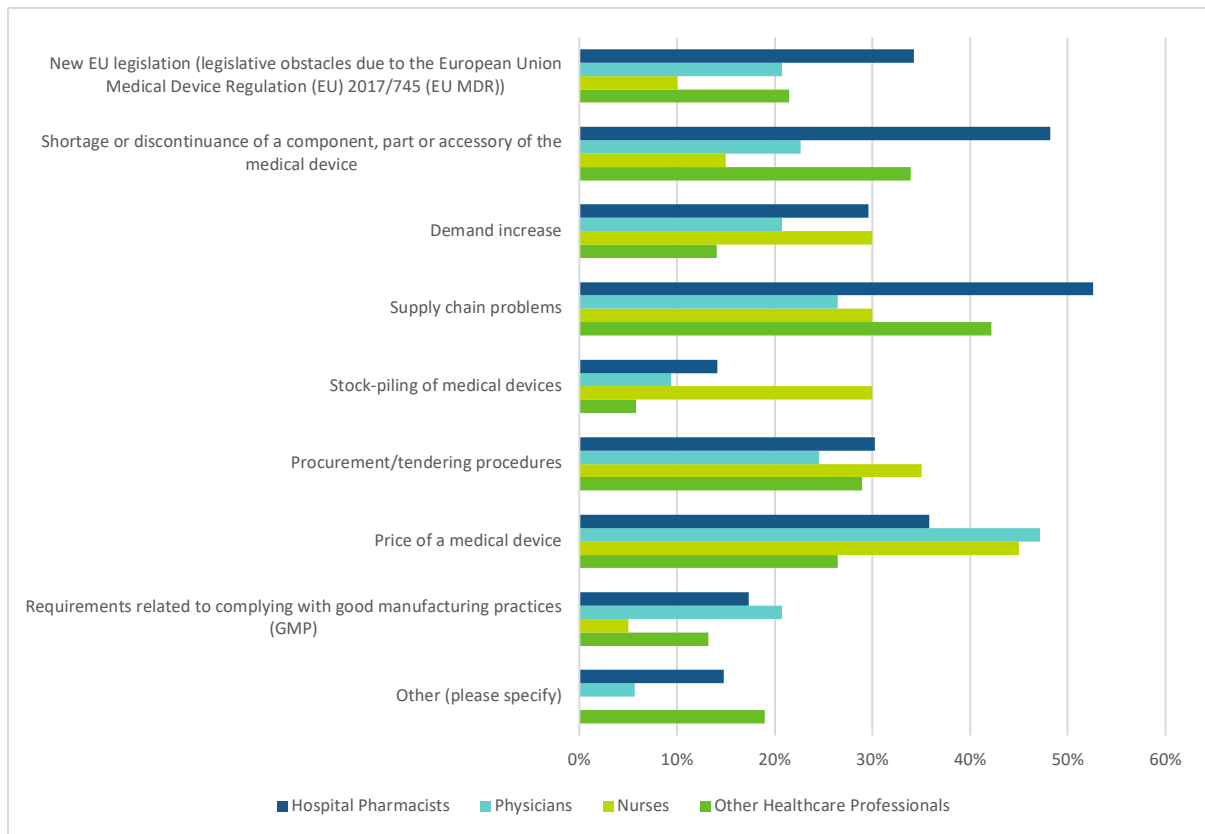


Figure 23 Percentage of responses by hospital pharmacists (N=1251) for question 15, physicians (N=53), nurses (N=20) and other healthcare professionals (N=121) for question 56 'What do you see as the cause of shortages of medical devices in your hospital/country?', grouped by profession.

Question 16 (hospital pharmacists): At which level is medical device tendering carried out in your country?

Hospital pharmacists were then asked at which level medical device tendering is carried out in their country. The answers of hospital pharmacists were mixed with 36% (N=452) indicating that tendering was carried out at the hospital level, followed by nationally and at the hospital level (34% | N=416) and nationally (17% | N=208). The respondents worked in hospitals where tendering was conducted regionally (13% | N=164).

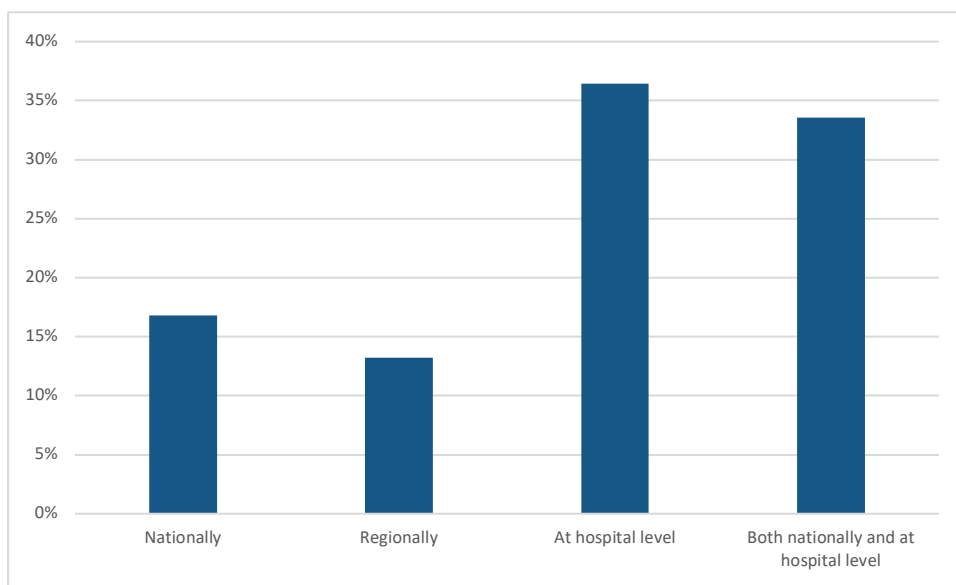


Figure 24 Percentage of responses by hospital pharmacists (N=1240) for question 16, 'At which level is medical device tendering carried out in your country?'.

Question 17 (hospital pharmacists): Are you as a hospital pharmacist involved in medical device tendering in your hospital?

Hospital pharmacists had to indicate whether they are involved in device tendering. More than half (59% | N=736) answered negatively to this question. A small group (3% | N=43) could not answer the question and selected the option 'I don't know', while the rest of the respondents (37% | N=461) indicated involvement. This demonstrates that hospital pharmacists do not always play a role in medical device tendering.

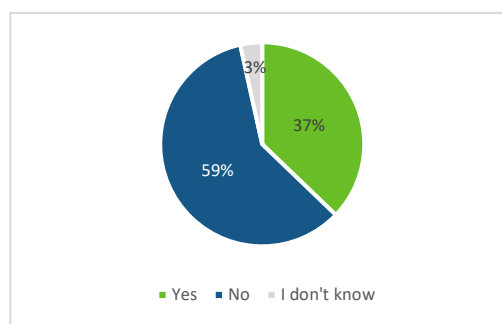


Figure 25 Percentage of responses by hospital pharmacists (N=1240) for question 17, 'Are you as a hospital pharmacist involved in medical device tendering in your hospital?'.

Question 18 (hospital pharmacists): Please mark all criteria relevant to the medical device tendering procedure in your country.

Hospital pharmacists who answered positively to the previous question were provided with the opportunity to choose which criteria were the most relevant for the tendering process. The majority selected the lowest price of a medical device (85% | N=392). Quality standards ranked second (75% | N=345) and the assessment of suppliers (e.g. assessment of performance in a previous tender; assessment of the medium time to supply after the order) was the third most relevant criterion (50% | N=230). For around one-third (33% | N=154) the storage capacity of a wholesaler or provider was relevant. Interestingly the responses for medical devices are the same as for medicines.

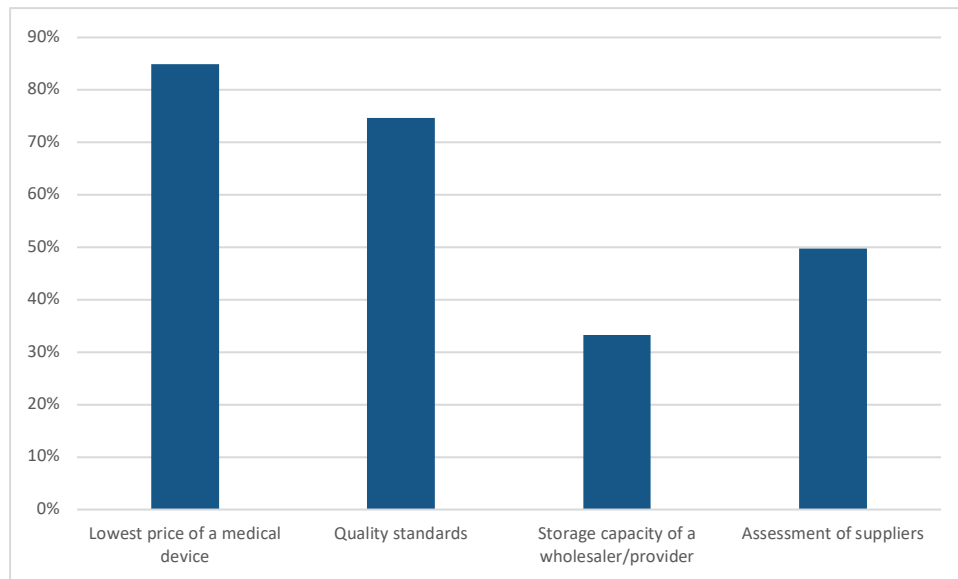


Figure 26 Percentage of responses by hospital pharmacists (N=462) for question 18, 'Please mark all criteria relevant to the medical device tendering procedure in your country.'

Question 19 (hospital pharmacists): In your experience, in 2022 how many times have you experienced a shortage of a medical device?

Medical device shortages occurred one to three times for the same product for 35% (N=421) of hospital pharmacists, while 34% (N=409) experienced this problem more than 10 times for the same device. The group that had problems four to six times in 2022 was 21% (N=248) large. The remaining respondents (11% | N=129) selected the option seven to ten times.

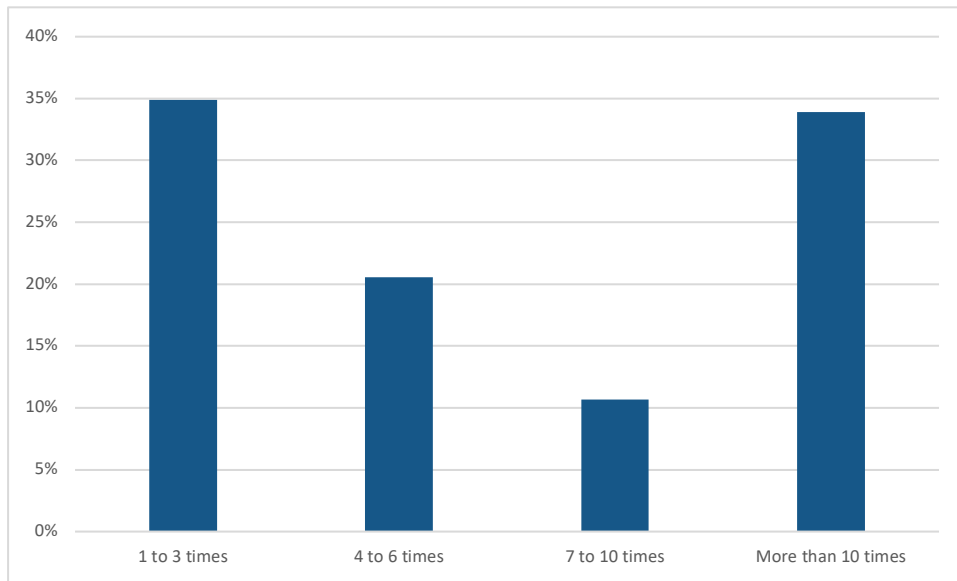


Figure 27 Percentage of responses by hospital pharmacists (N=1207) for question 19, 'In your experience, in 2022 how many times have you experienced a shortage of a medical device?'.

Question 20 (hospital pharmacists): Do manufacturers communicate the shortage of a medical device?

Communication of medical device shortages seems to be an issue since 37% (N=448) of hospital pharmacists reported that such problems are only shared if specific questions on the availability of medical devices are asked via e-mail. Interestingly 33% (N=396) of respondents could not provide feedback which could be attributed to the fact that hospital pharmacists are not handling all medical devices in all European countries.

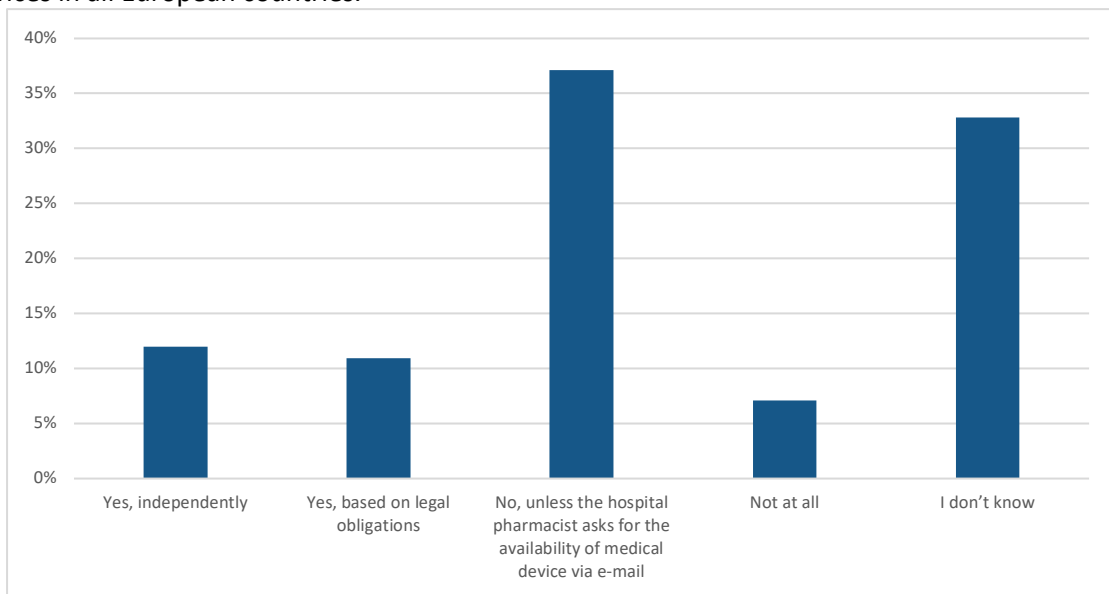
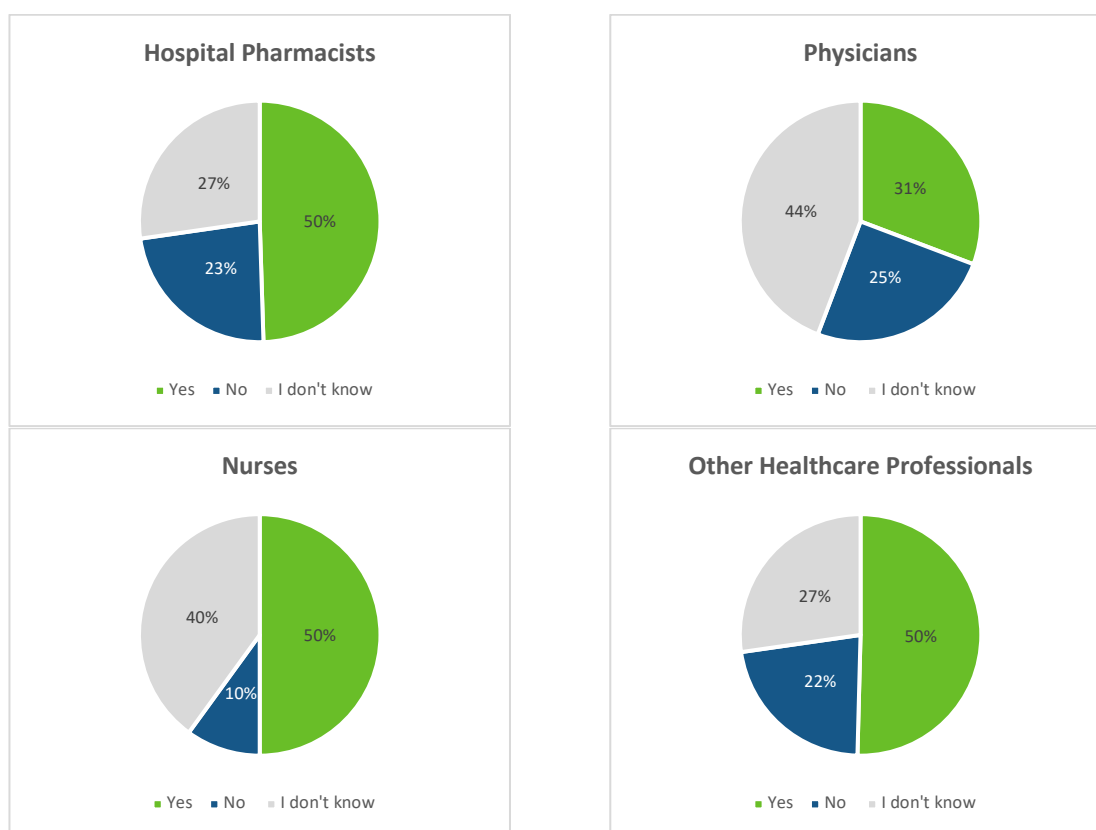


Figure 28 Percentage of responses by hospital pharmacists (N=1207) for question 20, 'Do manufacturers communicate the shortage of a medical device?'.

Medicine shortages management

Question 21 (hospital pharmacists) | Question 57 (physicians, nurses and other healthcare professionals): Is the reporting of medicine shortages mandatory in your country?

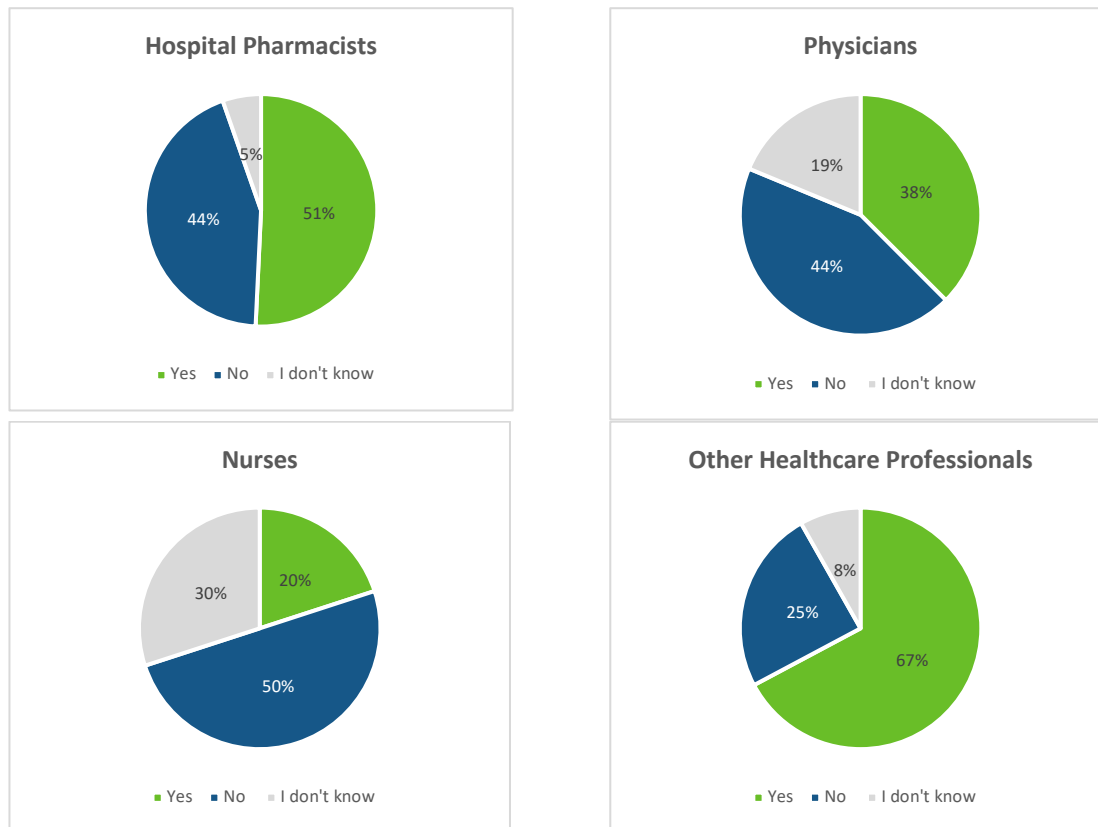
For half of the hospital pharmacists (50% | N=597), nurses (50% | N=10) and other healthcare professionals (50% | N=61) that participated in the survey reporting medicine shortages is mandatory in their country. The remaining two-quarters of hospital pharmacists could either not provide feedback and had to select the option 'I don't know' (27% | N=329) or they shared that reporting was not mandatory in their country (23% | N=280). The same was true for other healthcare professionals with 23% (N=27) option for 'no' and 27% (N=33) for 'I don't know'. For nurses, the group that could not provide feedback was with 40% (N=8) much larger than the 10% (N=2) that ticked 'no'. Physicians were mostly not able to give an answer (44% | N=23). A share of them said that reporting is mandatory (31% | N=16) and those who disagreed (25% | N=13) were almost equal.



Figures 29, 30, 31 and 32 Percentage of responses by hospital pharmacists (N=1206) for question 21, physicians (N=52), nurses (N=20) and other healthcare professionals (N=121) for question 57 'Is the reporting of medicine shortages mandatory in your country?', grouped by profession.

Question 22 (hospital pharmacists) | Question 58 (physicians, nurses and other healthcare professionals): Do you find that your national reporting system on shortages is useful and regularly updated?

Those who didn't answer 'I don't know' to question 21 were asked whether they found their national public reporting system on shortages to be useful and regularly updated. Of the four groups, other healthcare professionals were the most positive, with 67% (N=41) answering 'yes'. In 2019, the nurses were the most positive group. Four years later they are the most critical one with only 20% (N=2) agreeing that the national reporting system for shortages is useful and regularly updated. Half of the hospital pharmacists (51% | N=303) are in agreement with this statement and 38% (N=6) of physicians. For both the numbers did not significantly change since 2019.



Figures 33, 34, 35 and 36 Percentage of responses by hospital pharmacists (N=597) for question 22, physicians (N=16), nurses (N=10) and other healthcare professionals (N=61) for question 58 'Do you find that your national reporting system on shortages is useful and regularly updated?', grouped by profession.

Question 23 (hospital pharmacists): Who is managing the shortage reporting system in your country?

Hospital pharmacists were then asked who manages the public shortages reporting system in their country. The most common answer was the ‘Medicines Agency’ with 67% (N=779) in 2023 and 64% in 2019. The Ministry of Health (29% | N=331) and healthcare professionals (28% | N=325) were the second and third most selected options. Unlike four years ago, the other professions were not asked to reply to this question.

Respondents were given the option to specify their answers with a free text response. Several hospital pharmacists highlighted that they did not know who manages the reporting system. Others provided a wide range of responses, including listing the name of the Medicines Agency.

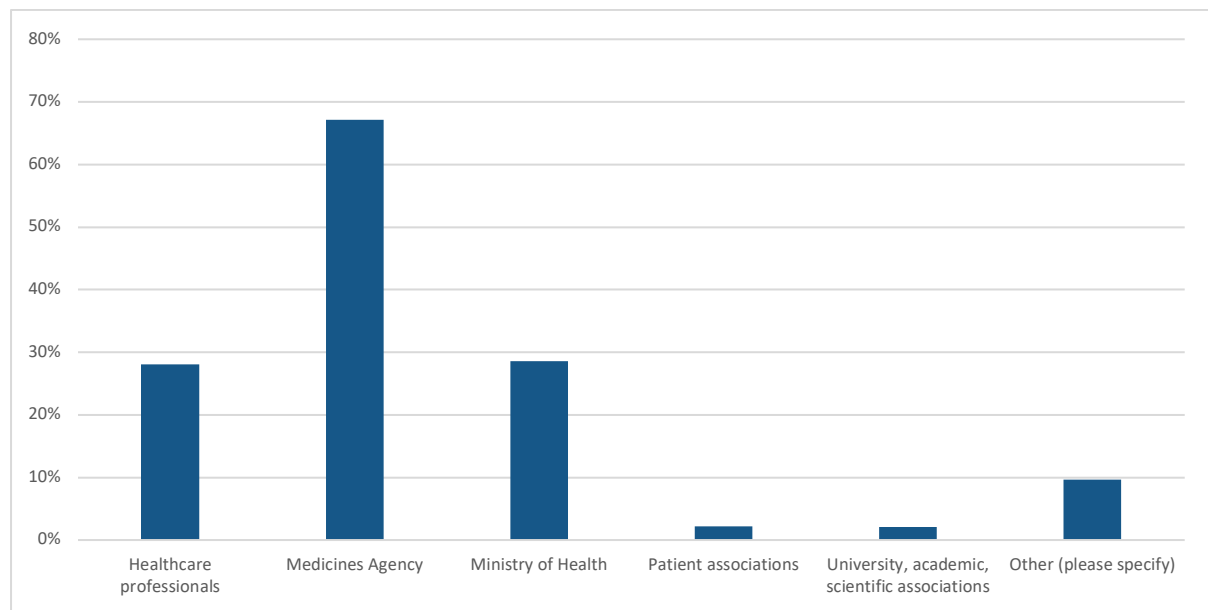


Figure 37 Percentage of responses by hospital pharmacists (N=1160) for question 23, ‘Who is managing the shortage reporting system in your country?’.

Question 24 (hospital pharmacists): Please name the database or databases for reporting.

This question inquired about the existing national public reporting system via which medicines shortages can be reported in each country. A summary of the responses is included in the table below.

Country	Website of the reporting system
Austria	https://medicineshortage.basg.gv.at/
Belgium	https://farmastatus.be/
Bosnia and Herzegovina	http://www.almbih.gov.ba/
Bulgaria	https://www.bda.bg/
Croatia	http://www.halmed.hr/
Cyprus	/
Czech Republic	https://prehledy.sukl.cz
Denmark	/
Estonia	www.ravimiregister.ee
Finland	https://www.fimea.fi/web/en/databases_and_registers/shortages
France	https://ansm.sante.fr/
Germany	https://www.bfarm.de/
Greece	https://www.eof.gr/
Hungary	https://www.ogyei.gov.hu/gyogyszeradatbazis
Iceland	https://www.lyfjastofnun.is/lyf/lyfjaskortur/tilkynntur-lyfjaskortur/#&cat=l%20skorti
Ireland	https://www.hpra.ie/homepage/medicines/medicines-information/medicines-shortages
Italy	https://www.aifa.gov.it/farmaci-carenti
Latvia	www.zva.gov.lv
Lithuania	www.vvkt.lt
Luxembourg	/
Malta	/
Montenegro	/
North Macedonia	https://malmed.gov.mk/
Norway	https://legemiddelverket.no/legemiddelmangel/legemiddelmangel-og-avregistreringer-rad-til-apotek-og-helsepersonell-inneverende-ar
Poland	https://zsmopl.ezdrowie.gov.pl/
Portugal	https://www.infarmed.pt/web/infarmed/gestao-da-disponibilidade-do-medicamento
Romania	https://www.anm.ro/en/
Serbia	https://www.rfzo.rs
Slovakia	www.sukl.sk
Slovenia	https://www.jazmp.si/humana-zdravila/podatki-o-zdravilih/zdravila-na-trgu/
Spain	https://www.aemps.gob.es/profesional-sanitario/problemas-de-suministro-de-medicamentos/
Sweden	www.lakemedelsverket.se
Switzerland	www.drugshortage.ch
The Netherlands	https://farmanco.knmp.nl/
Türkiye	https://www.titck.gov.tr/
United Kingdom	/

Table 7 – Databases for the monitoring of shortages.

Question 25 (hospital pharmacists): Do you get feedback from an organisation/entity in charge of the reporting system, when you report a medicine shortage?

Although this question was asked to all professions in 2019, for 2023 it was only posed to hospital pharmacists. A quarter of them (26% | N=296) confirmed that they received feedback from the entity that was running the shortage reporting system. Around one-third (33% | N=373) denied this was the case and 41% (N=468) could not give an answer. The figures from 2019 were similar with 21% selecting 'yes', 34% option for 'no' and 45% not in a position to answer.

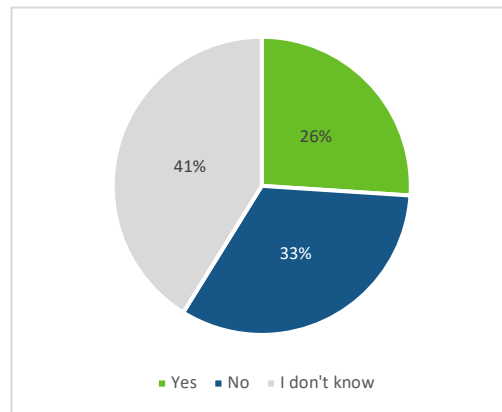


Figure 38 Percentage of responses by hospital pharmacists (N=1137) for question 25, 'Do you get feedback from an organisation/entity in charge of the reporting system, when you report a medicine shortage?'

Question 26 (hospital pharmacists): Do manufacturers communicate the shortage of a medicine independently of or based on legal obligations?

Hospital pharmacists were asked to provide feedback on the reporting obligations of manufacturers. The majority of them (42% | N=477) indicated that the notification by manufacturers is based on legal obligations. 26% (N=297) of hospital pharmacists believed that reporting is carried out independently. The remaining survey participants were unsure and therefore opted for the answer possibility 'I don't know' (32% | N=363). Like in the previous question, these answers did not differ much from those given by hospital pharmacists in 2019.

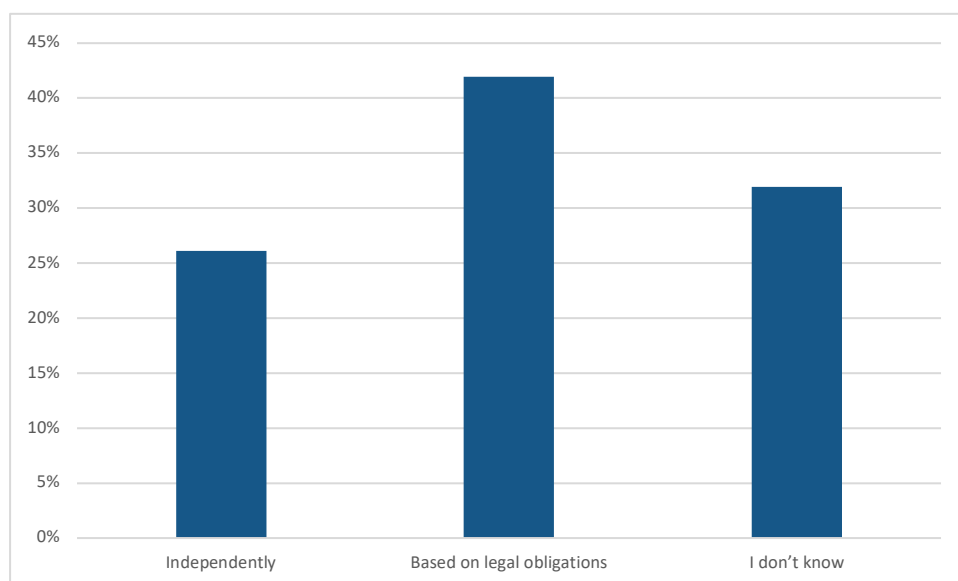


Figure 39 Percentage of responses by hospital pharmacists (N=1137) for question 26, 'Do manufacturers communicate the shortage of a medicine independently of or based on legal obligations?'

Question 27 (hospital pharmacists): How often do manufacturers communicate shortages?

Communication of medicine shortages does not seem to happen frequently since 71% (N=551) of hospital pharmacists reported that manufacturers only rarely share this information. For 27% (N=211) shortage information was always provided to them and 2% (N=12) never received any. Due to the lack of communication hospital pharmacists have to reach out frequently even if a legal reporting obligation exists.

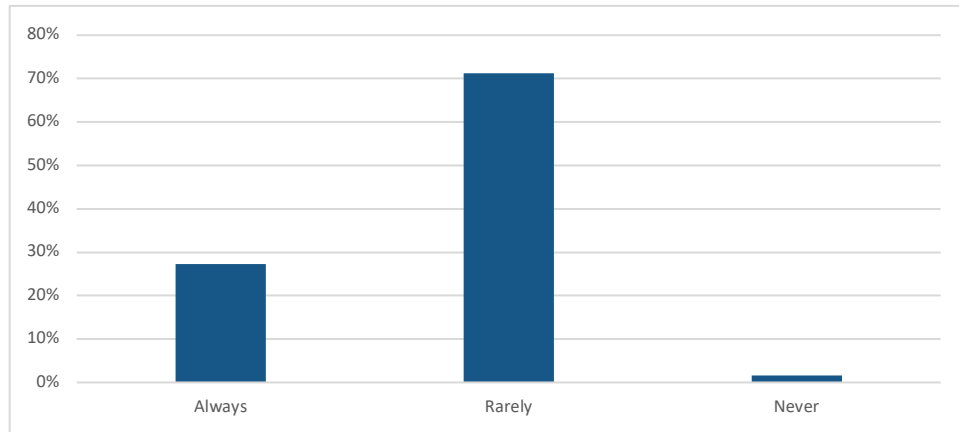


Figure 40 Percentage of responses by hospital pharmacists (N=774) for question 27, 'How often do manufacturers communicate shortages?'

Question 28 (hospital pharmacists): Do you have a medicine shortages task force group?

Due to the importance of the coordination of responses to medicine shortages, question 28 inquired about the existence of a task force group or team dedicated to this topic. Over two-thirds of respondents replied positively to this question. Task forces and/or dedicated teams are mostly situated in the hospital or at the national level. In the hospital they mostly comprised hospital pharmacists (21% | N=241), while at the national level cooperation plays a role and thus multiple different professions are involved in the task force group (18 %| N=202). Under one-fifth of hospital pharmacists shared that such groups are organised regionally either with only the involvement of them (7% |N=83) or them and other professionals (5% |N=56).

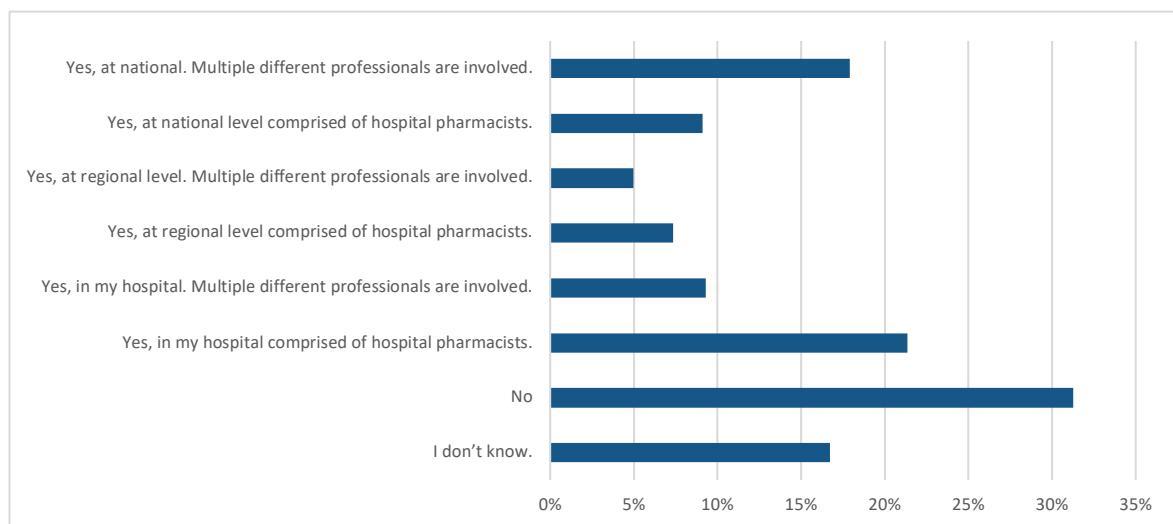


Figure 41 Percentage of responses by hospital pharmacists (N=1129) for question 28, 'Do you have a medicine shortages task force group?'

Question 29 (hospital pharmacists): Do you use a European and/or an international database dedicated to shortages as a source of information to mitigate shortages?

The large majority of hospital pharmacists either do not use a European and/or an international database dedicated to shortages as a source of information to mitigate shortages (68% | N=768) or could not provide feedback to this question and opted for 'I don't know' (19% | N=218). This shows that apart from the 13% (N=143) that replied positively to this question, hospital pharmacists tend to work with national information. This could be linked to the fact that there is no proper database that provides detailed shortage data at the European or international level.

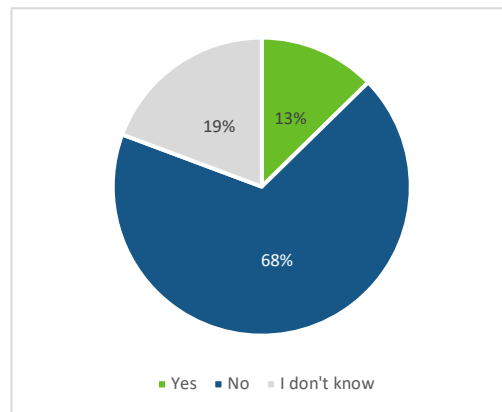


Figure 42 Percentage of responses by hospital pharmacists (N=1129) for question 29, 'Do you use a European and/or an international database dedicated to shortages as a source of information to mitigate shortages?'

Question 30 (hospital pharmacists): Please select all the databases that you use (multiple answers are possible).

The small group that replied positively to the previous question was asked to share more details about the database that was being used by them. Over two-thirds (75% | N=106) consulted the European Medicines Agency (EMA) Shortages catalogue, while around one-third (30% | N=42) relied on information from the Food and Drug Administration (FDA) Drug Shortages database. The 28% (N=40) that ticked the option 'other' surprisingly referred exclusively to national shortage databases.

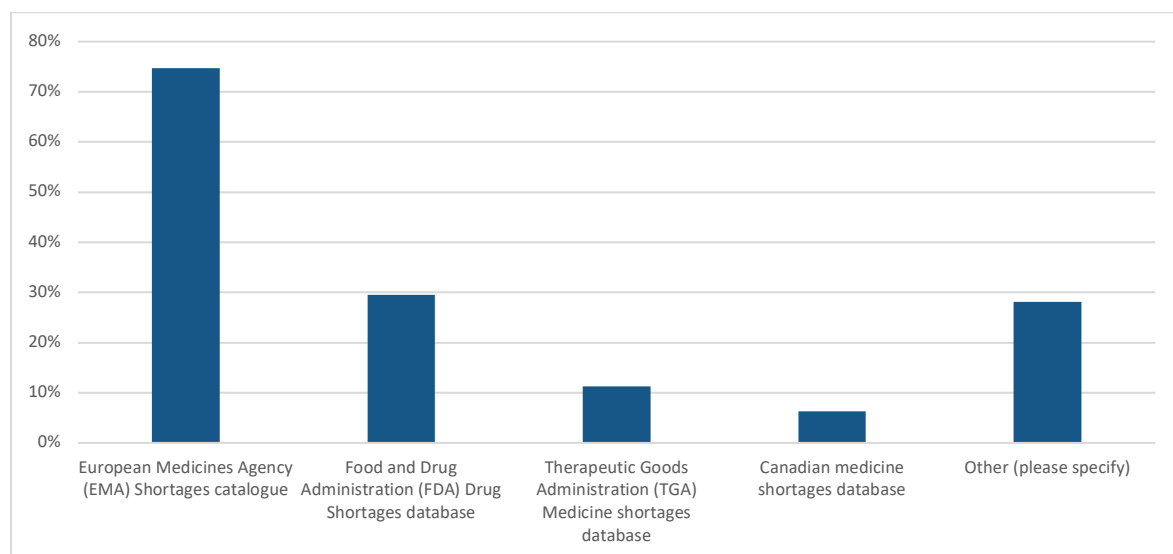


Figure 43 Percentage of responses by hospital pharmacists (N=142) for question 30, 'Please select all the databases that you use (multiple answers are possible).'

Question 31 (hospital pharmacists) | Question 59 (physicians, nurses and other healthcare professionals): How do you communicate information on shortages/alternatives with other healthcare professionals in your team?

In 2023, e-mail (87% | N=972) and phone communication (42% | N=466) were identified by hospital pharmacists as the most commonly used mediums through which information on medicines shortages and alternatives is shared with the different professionals in their hospitals. In 2019, all four professions saw them as the most important sources. For nurses face-to-face meetings (55 %| N=11) are not the best communication option, while physicians (41% | N=21) and other healthcare professionals (40% | N=48) use them second mostly. Like in 2019, apps such as WhatsApp, Viber and other social media programmes were the least favoured means of communication among hospital pharmacists (9% | N=103) and nurses (15% | N=3). The use of print materials and communication via the Drug and Therapeutic Committee increased for all professions compared to 2019.

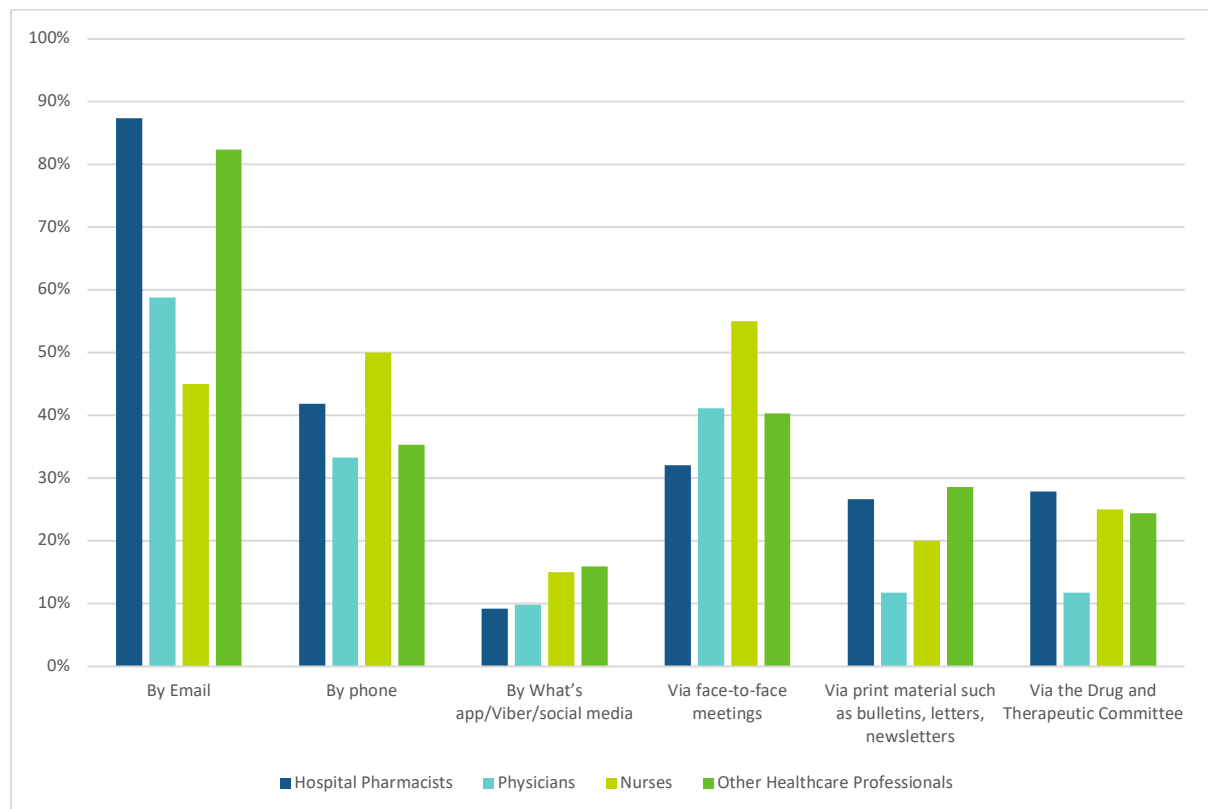
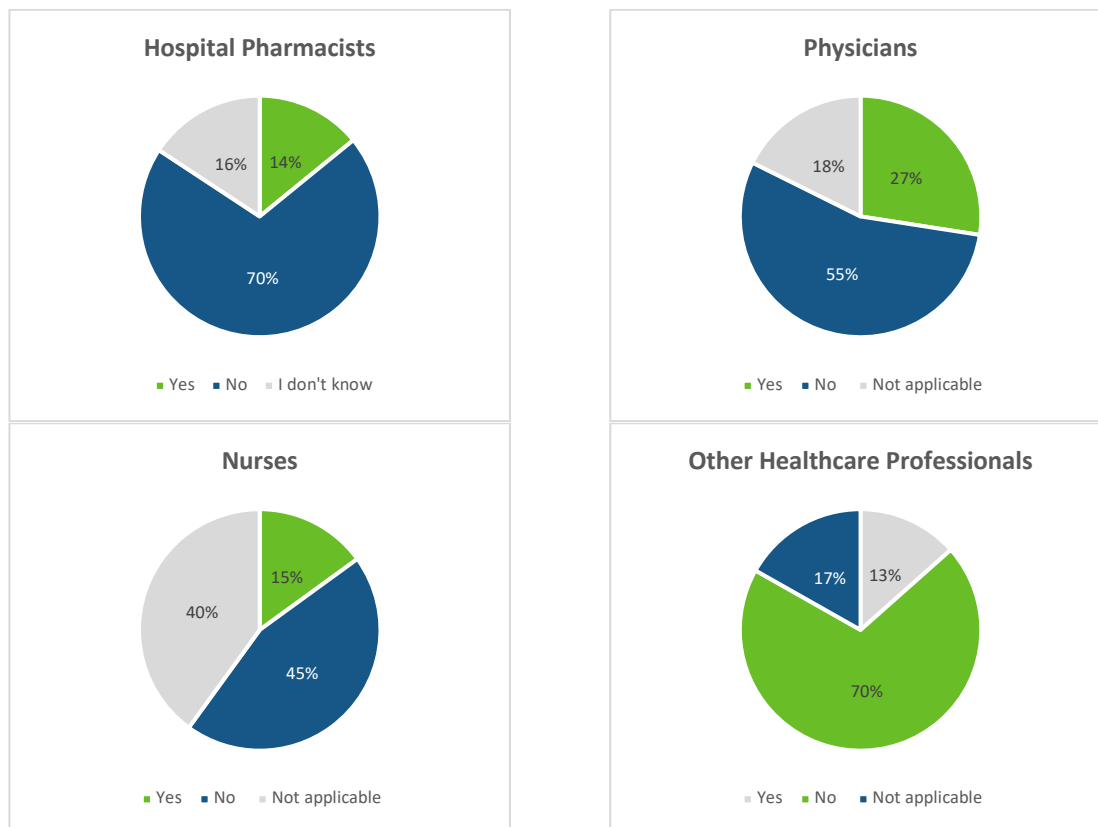


Figure 44 Percentage of responses by hospital pharmacists (N=1112) for question 31, physicians (N=51), nurses (N=20) and other healthcare professionals (N=119) for question 59 'How do you communicate information on shortages/alternatives with other healthcare professionals in your team?', grouped by profession.

Question 32 (hospital pharmacists) | Question 60 (physicians, nurses and other healthcare professionals): Is the medicine prescribing/dispensing IT system automatically fed with information on ongoing shortages and potential alternatives in your hospital?

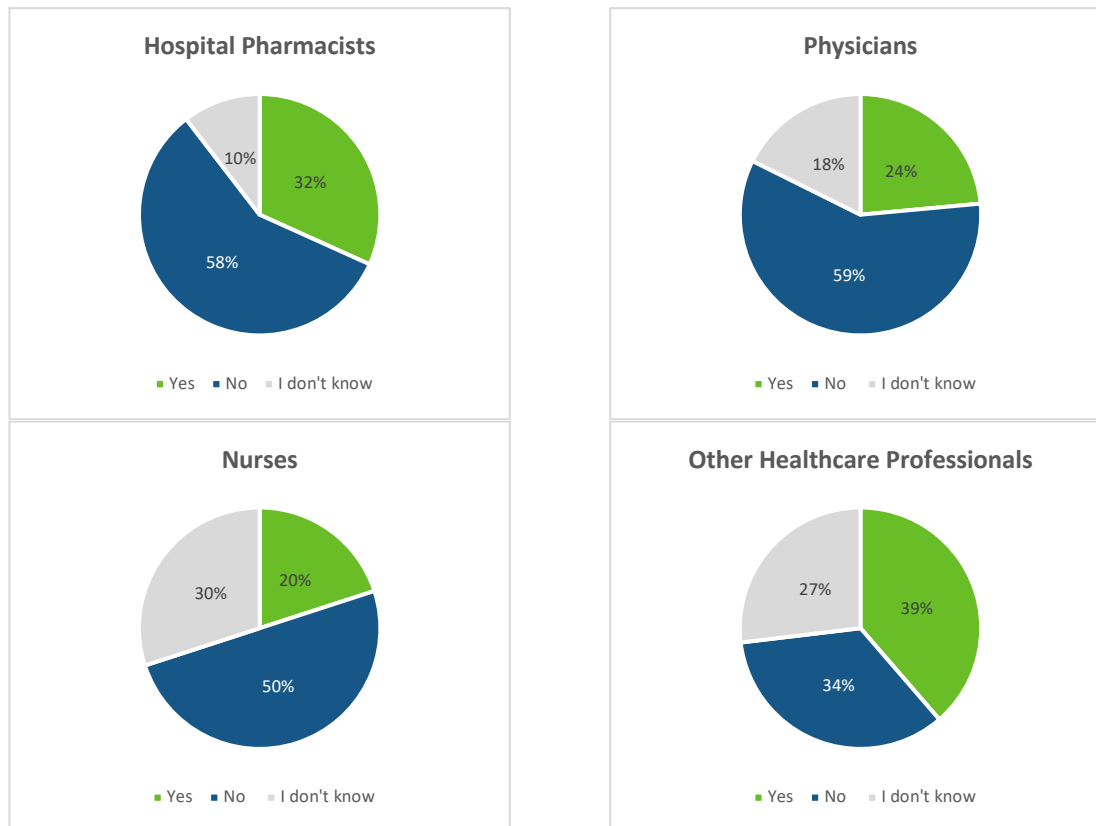
All professions were asked whether the medicine prescribing/dispensing IT system was automatically fed with information on ongoing shortages and potential alternatives in their hospital. The figures for hospital pharmacists remained exactly the same as in 2019 with 70% (N=780) ticking ‘no’, 14% (N=157) opting ‘yes’ and the rest (16% |N=175) selecting ‘not applicable’. This year the responses of other healthcare professionals matched those of hospital pharmacists with 70% (N=83) choosing ‘no’ and 13% (N=16) ‘yes’. For physicians (55% |N=28) and nurses (45% | N=9) the feedback was more mixed with around half confirming that the medicine prescribing/dispensing IT system is not automatically fed with information on ongoing shortages and potential alternatives.



Figures 45, 46, 47 and 48 Percentage of responses by hospital pharmacists (N=1112) for question 32, physicians (N=51), nurses (N=20) and other healthcare professionals (N=119) for question 60 ‘Is the medicine prescribing/dispensing IT system automatically fed with information on ongoing shortages and potential alternatives in your hospital?’, grouped by profession.

Question 33 (hospital pharmacists) | Question 61 (physicians, nurses and other healthcare professionals): Do you have a protocol/contingency plan on therapeutic substitutions due to medicine shortages in your hospital?

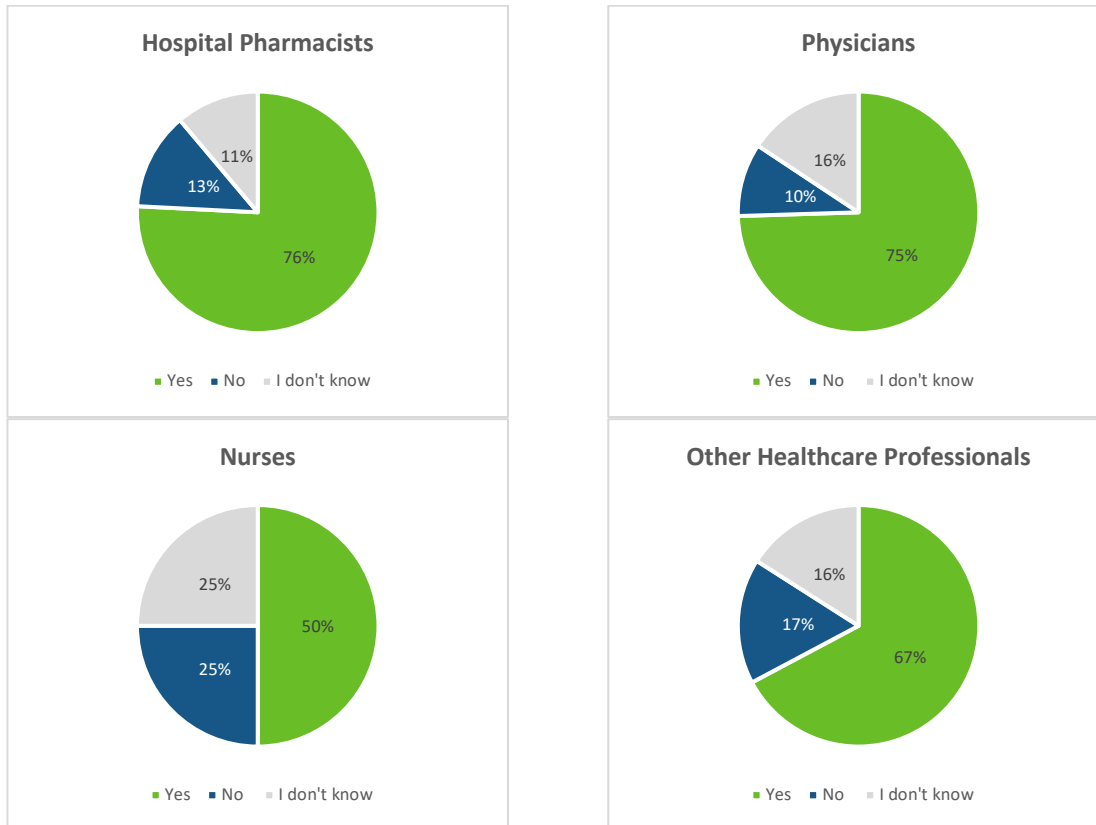
The question on protocols and contingency plans for managing medicines shortages went to all professions. Their existence was confirmed by 32% (N=353) of hospital pharmacists, 20% (N=4) of nurses, 24% (N=12) of physicians and 39% (N=46) of other healthcare professionals. Compared to data from 2019 – when this question was only asked to hospital pharmacists and other healthcare professionals – the availability of protocols and contingency plans increased more for other healthcare professionals (28% in 2019 | 39% in 2023) than for hospital pharmacists (29% in 2019 | 32% in 2023).



Figures 49, 50, 51 and 52 Percentage of responses by hospital pharmacists (N=1112) for question 33, physicians (N=51), nurses (N=20) and other healthcare professionals (N=119) for question 61 'Do you have a protocol/contingency plan on therapeutic substitutions due to medicine shortages in your hospital?', grouped by profession.

Question 34 (hospital pharmacists) | Question 62 (physicians, nurses and other healthcare professionals): Did you have to implement clinical changes in order to manage shortages?

The implementation of clinical changes is carried out by 76% (N=843) of hospital pharmacists, 50% (N=10) of nurses, 75% (N=38) of physicians and 67% (N=80) of other healthcare professionals. Based on this information it could be argued that nurses are less involved in shortage management than the other professions.



Figures 53, 54, 55 and 56 Percentage of responses by hospital pharmacists (N=1112) for question 34, physicians (N=51), nurses (N=20) and other healthcare professionals (N=119) for question 62 'Did you have to implement clinical changes in order to manage shortages?', grouped by profession.

Question 35 (hospital pharmacists) | Question 63 (physicians, nurses and other healthcare professionals): Please select all the clinical changes that you deem appropriate and/or use regularly.

Switching to alternative medicine that might not be as effective as a medicine affected by a shortage or might have additional side effects was the clinical change most introduced by all professions (hospital pharmacists (89% | N=750), nurses (89% | N=8), physicians (90% | N=35) and other healthcare professionals (89% | N=71)). With 60% (N=48) changing administrative protocols only ranked in second place for other healthcare professionals. For the other professions converting from an intravenous to an oral form of a medicine (hospital pharmacists (68% | N=574), nurses (56% | N=5) and physicians (41% | N=16)) was the second most chosen clinical change.

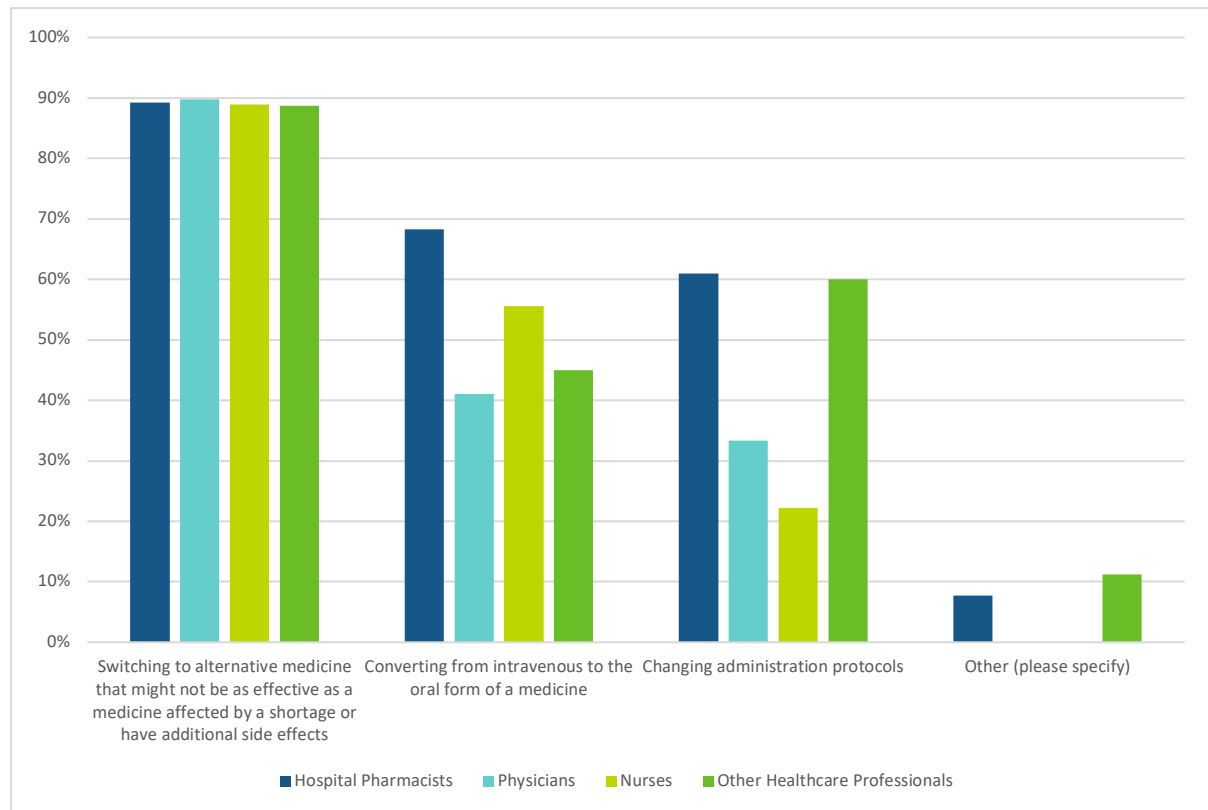
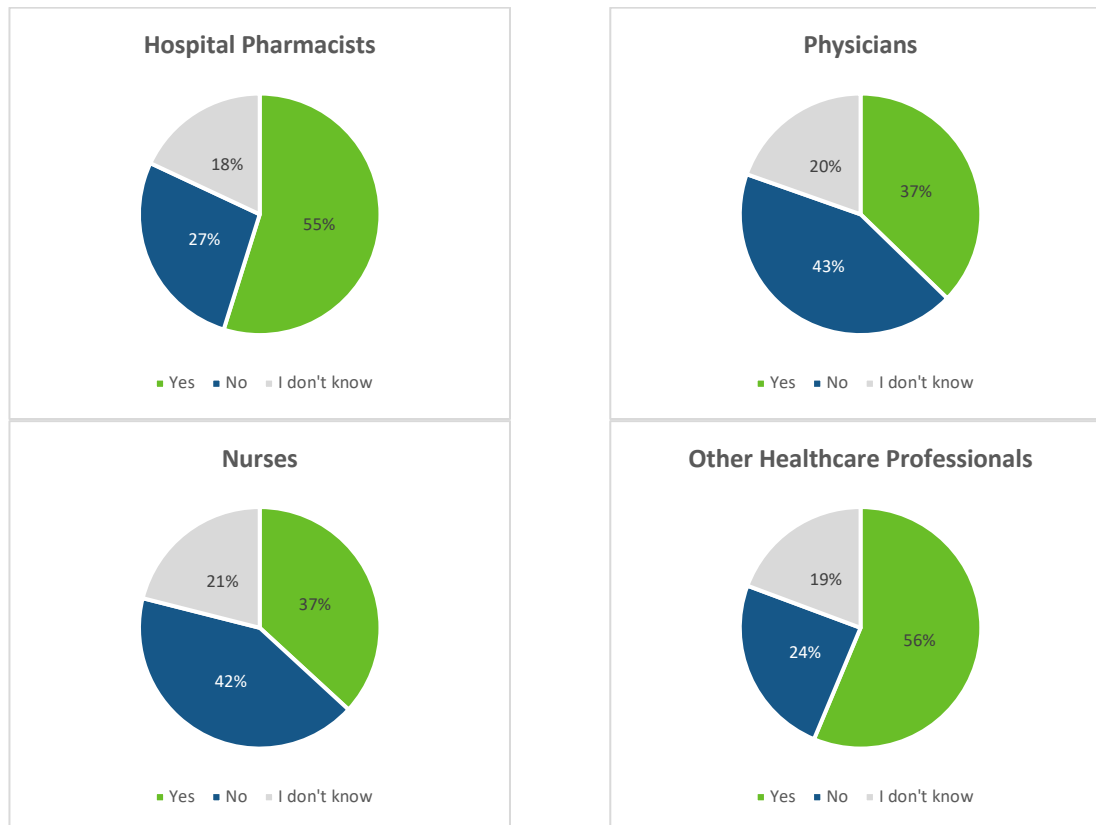


Figure 57 Percentage of responses by hospital pharmacists (N=841) for question 35, physicians (N=39), nurses (N=9) and other healthcare professionals (N=80) for question 63 'Please select all the clinical changes that you deem appropriate and/or use regularly.', grouped by profession.

Question 36 (hospital pharmacists) | Question 64 (physicians, nurses and other healthcare professionals): Have you implemented operational changes in order to manage shortages?

Operational changes were implemented by 55% (N=608) of hospital pharmacists and 56% (N=67) of other healthcare professionals. The other two groups were less likely to opt for change with only 37% of nurses (N=7) and physicians (N=19) taking this route.



Figures 58, 59, 60 and 61 Percentage of responses by hospital pharmacists (N=1109) for question 36, physicians (N=51), nurses (N=19) and other healthcare professionals (N=119) for question 64 'Have you implemented operational changes in order to manage shortages?', grouped by profession.

Question 37 (hospital pharmacists) | Question 65 (physicians, nurses and other healthcare professionals): Please select all the operational changes you deem appropriate and/or use regularly.

Changing medicinal products stocked for procedures and emergencies was the favoured operational change by nurses (71% | N=5), physicians (72% | N=13) and other healthcare professionals (80% | N=51). For hospital pharmacists purchasing medicine’s vial sizes or concentrations not routinely stocked ranked first (82% | N=498) and was closely followed by the change in medical products preferred by the other three groups (81% | N=489).

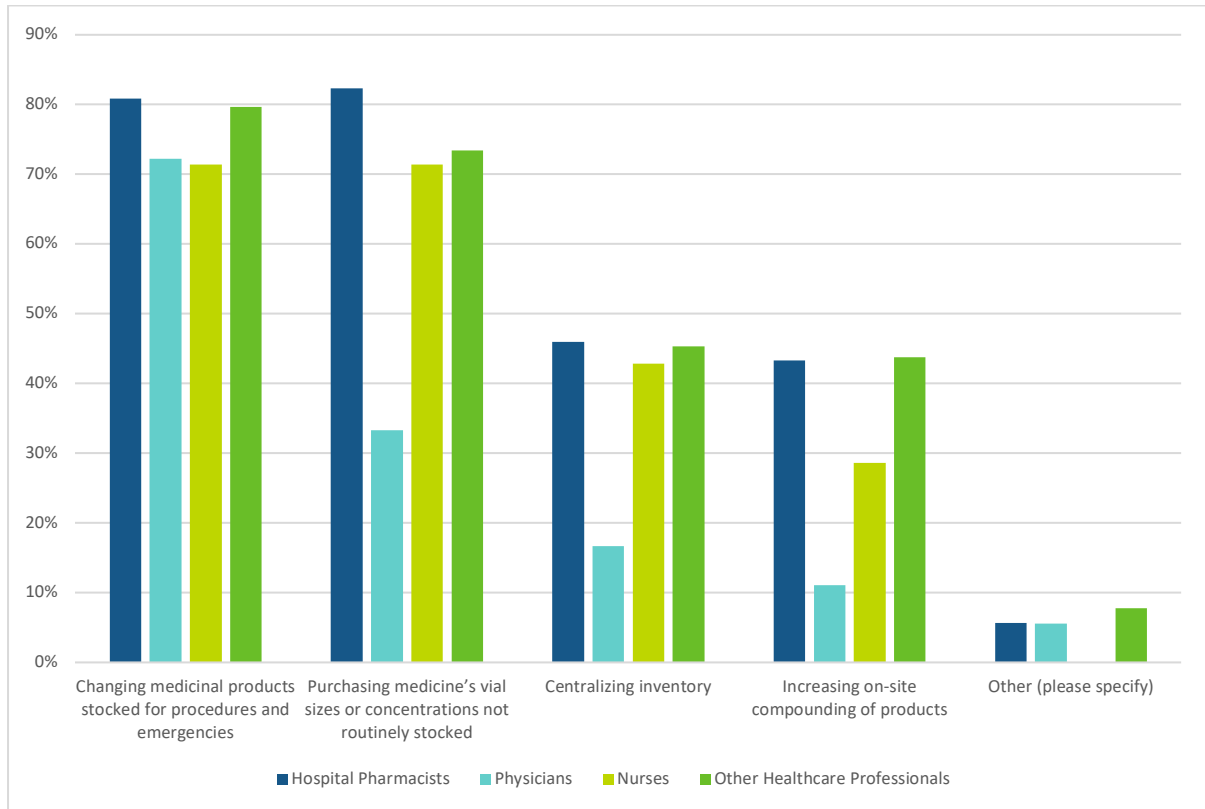


Figure 62 Percentage of responses by hospital pharmacists (N=605) for question 37, physicians (N=18), nurses (N=7) and other healthcare professionals (N=64) for question 65 'Please select all the operational changes you deem appropriate and/or use regularly.', grouped by profession.

Question 38 (hospital pharmacists): What do you do when shortages occur in your hospital?

Hospital pharmacists usually address a shortage by overcoming it and informing every single healthcare professional via an IT system (40% | N=439). Managing it without communication (8 % | N=89) and ignoring it (1% | N=11) scored the lowest in relation to this question. The 13% (N=140) of hospital pharmacists who opted for 'other' shared a long list of different approaches. Selected suggestions included:

We try to ensure sufficient supplies of the drug or to secure a generic drug. If we are unable to supply the medicine, we will inform the healthcare professionals concerned and agree on the next course of action. (Hospital Pharmacist, Czech Republic)

Assess the risk and review the impact depending on current stock holdings and anticipated re-supply date. Then the action will depend on whether this is highlighted to the wider pharmacy team or managed by ordering more of the alternative, this can be off-contract purchases in some cases. (Hospital Pharmacist, United Kingdom)

Overcoming the shortage, communicating with wards and doctors who use this particular medication and documenting it in an online tool that can be consulted by every nurse, doctor and pharmacist in the hospital. (Hospital Pharmacist, Belgium)

Question 39 (hospital pharmacists) | Question 66 (physicians, nurses and other healthcare professionals): How would you rank the following solutions? (0 = not useful | 5 = very useful)

Like in 2019, possible solutions were explored. This time four instead of five different proposals were rated by the four professional groups. The answers provided demonstrate that the four groups have very similar opinions on which solutions are most likely to be effective and useful in addressing medicine shortages. The four proposals were well received by all four groups of professionals, with 5 being the favoured rank for all but one of the proposals. Also in 2023, the least preferred suggestion was 'evoking appropriate staffing levels in order to lower the impact that medicine shortages currently have on the overall patient services. This suggests that appropriate staffing levels cannot mitigate the impact of medicine shortages on patients. Health professionals preferred again proposal that aimed to tackle the root of the problem of medicine shortages on the European level and improve communications.

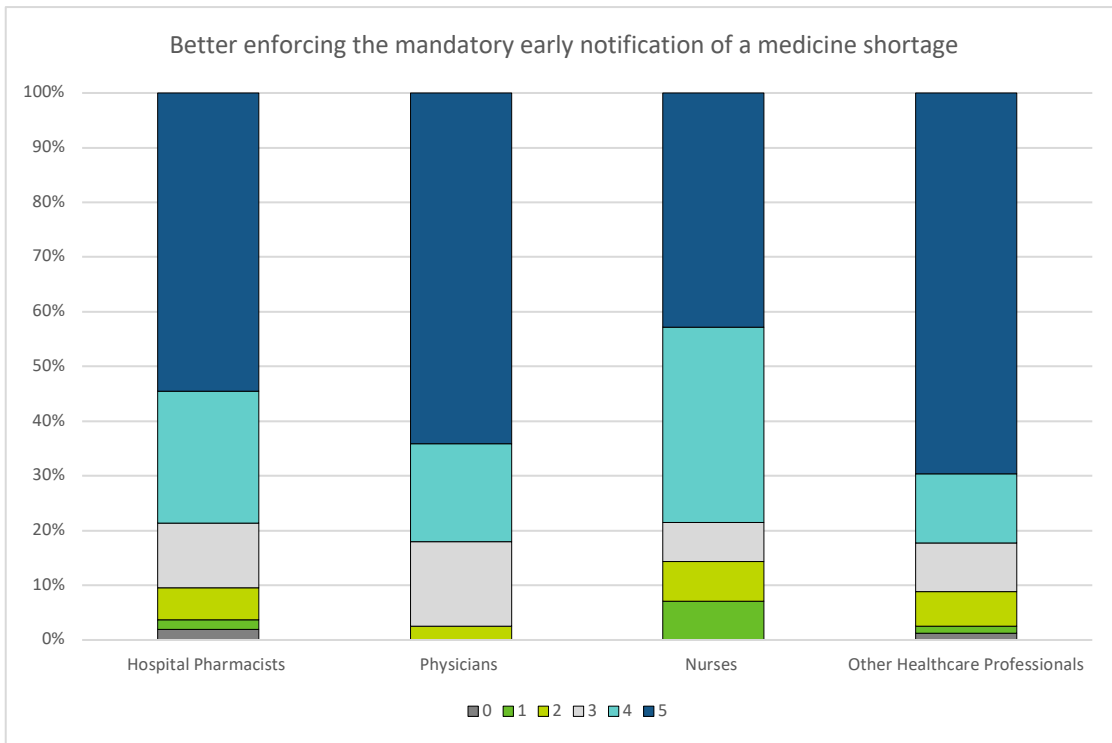


Figure 63 Percentage of responses by hospital pharmacists (N=1053) for question 39, physicians (N=45), nurses (N=19) and other healthcare professionals (N=105) for question 66 'How would you rank the following solutions?', grouped by profession. Proposed solution: Better enforcing the mandatory early notification of a medicine shortage.

47% (N=500) of hospital pharmacists, 56% (N=25) of physicians, 32% (N=6) of nurses and 52% (N=55) of other healthcare professionals gave the solution 'better enforcing the mandatory early notification of a medicine shortage' a ranking of 5 (very useful).

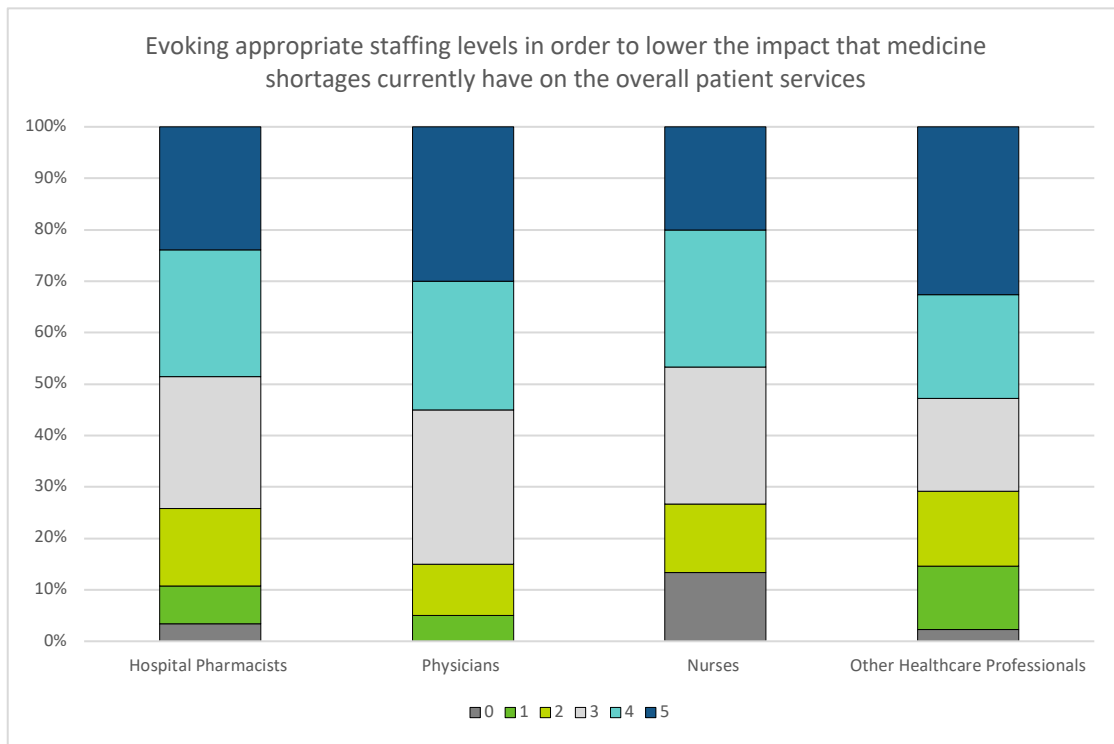


Figure 64 Percentage of responses by hospital pharmacists (N=1053) for question 39, physicians (N=45), nurses (N=19) and other healthcare professionals (N=105) for question 66 'How would you rank the following solutions?', grouped by profession. Proposed solution: Evoking appropriate staffing levels in order to lower the impact that medicine shortages currently have on the overall patient services.

The solution 'evoking appropriate staffing levels in order to lower the impact that medicine shortages currently have on the overall patient services' was not as well received by respondents. In comparison to the other three it was deemed less useful with only 22% (N=231) of hospital pharmacists, 27% (N=12) of physicians, 16% (N=3) of nurses and 28% (N=29) of other healthcare professionals giving it the highest ranking. Nurses seemed to be least supportive since 11% (N=2) gave the solution the ranking 0 (not useful).

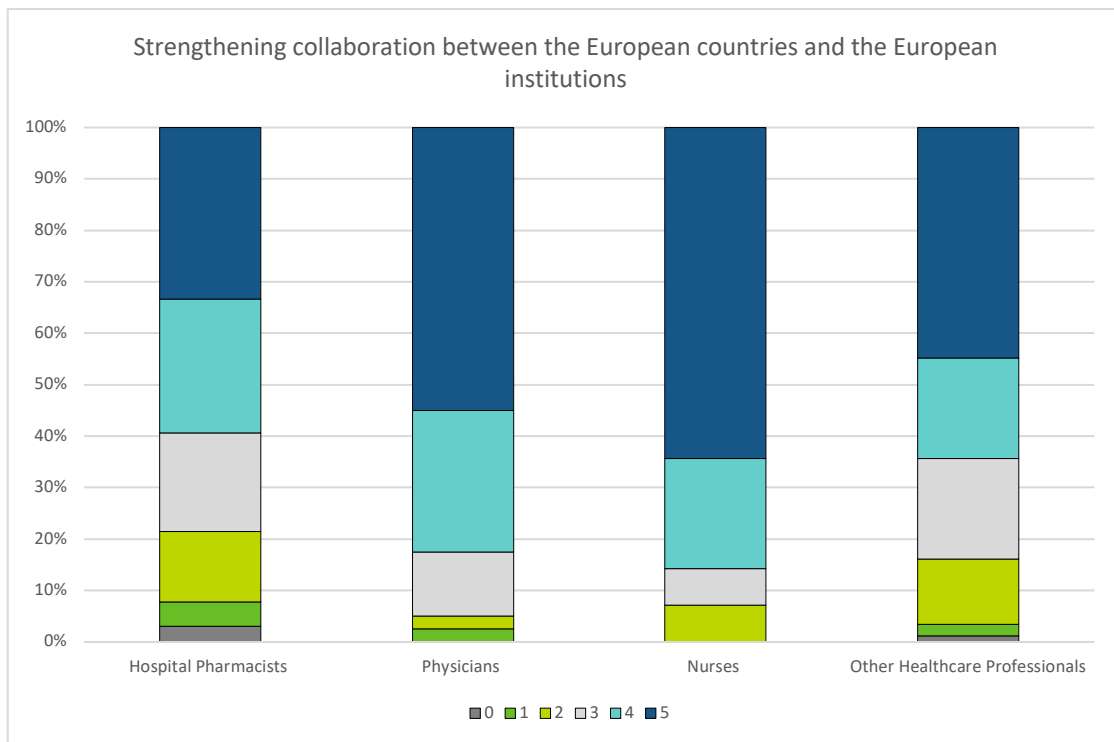


Figure 65 Percentage of responses by hospital pharmacists (N=1053) for question 39, physicians (N=45), nurses (N=19) and other healthcare professionals (N=105) for question 66 'How would you rank the following solutions?', grouped by profession. Proposed solution: Strengthening collaboration between the European countries and the European institutions.

The solution of 'strengthening collaboration between the European countries and the European institutions' received more positive feedback compared to the previous one. With 31% (N=323) of hospital pharmacists, 49% (N=22) of physicians, 47% (N=9) of nurses and 37% (N=39) of other healthcare professionals giving the proposal a ranking of 5 (very useful).

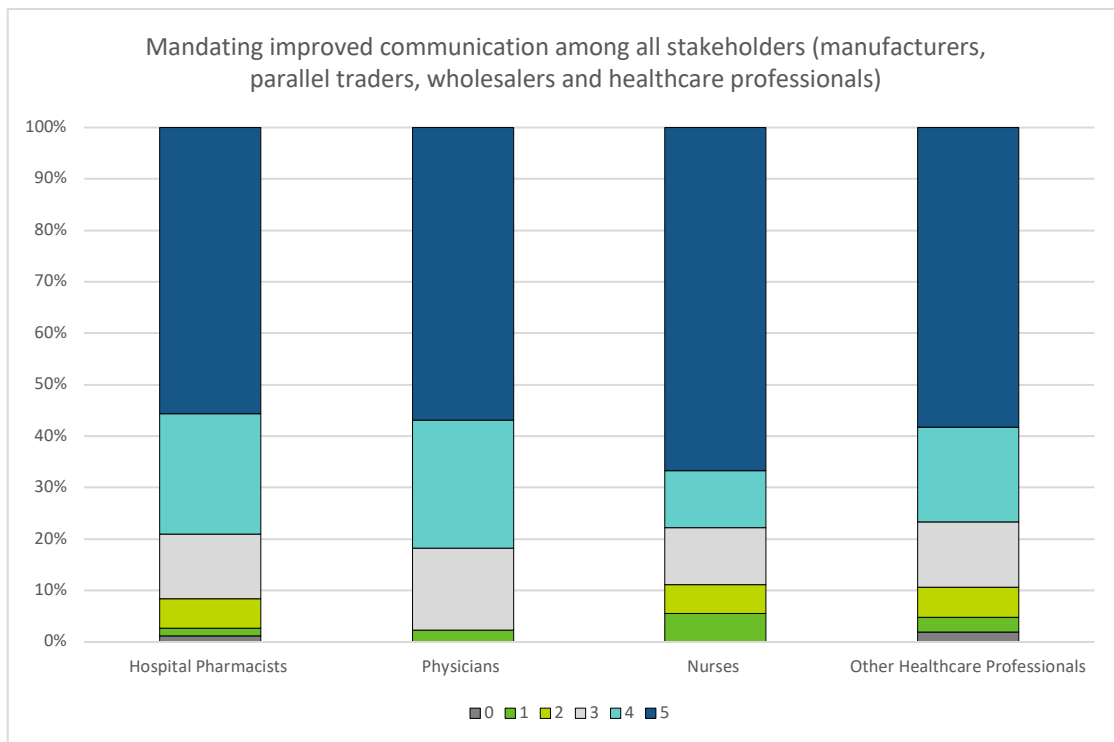


Figure 66 Percentage of responses by hospital pharmacists (N=1053) for question 39, physicians (N=45), nurses (N=19) and other healthcare professionals (N=105) for question 66 ‘How would you rank the following solutions?’, grouped by profession. Proposed solution: Mandating improved communication among all stakeholders (manufacturers, parallel traders, wholesalers and healthcare professionals).

The proposal ‘mandating improved communication among all stakeholders (manufacturers, parallel traders, wholesalers and healthcare professionals)’ received a very positive response. With 54% (N=568) of hospital pharmacists, 56% (N=25) of physicians, 63% (N=12) of nurses and 57% (N=60) of other healthcare professionals giving the proposal a ranking of 5 (very useful).

Question 40 (hospital pharmacists) | Question 67 (physicians, nurses and other healthcare professionals): Do you have another solution that is currently being applied in your hospital/ your country that could help alleviate the problem of medicine shortages?

The 352 proposals submitted by hospital pharmacists in relation to this question were diverse. Thus a few of them are displayed below:

“We recently started a group of several doctors and pharmacists who will continuously meet to discuss current shortages.” (Hospital Pharmacist, Sweden)

“It would be very useful to be informed about the clinical alternatives, when there is no available equivalent product.” (Hospital Pharmacist, Spain)

“The federal government currently has a strategic stock of certain medications that hospitals can order from if the usual suppliers can't supply anymore. While currently used mostly for IV opioids, expanding this system to other medications with frequent shortages would provide an alternative where otherwise no alternative suppliers are.” (Hospital Pharmacist, Belgium)

“There are mandatory reserve supplies in Finland. These are useful, especially during shorter shortages. However, sometimes the expiration dates of the medicines are too soon for mandatory reserve supplies.” (Hospital Pharmacist, Finland)

“There is currently no other solution but the idea of a better collaboration between all the hospitals. Every pharmacy has to find a solution. It would be good if the search for a solution was centralised.” (Hospital Pharmacist, Switzerland)

“Infarmed has created a “direct communication channel” where a great majority of national hospital pharmacists are inserted and can quickly communicate shortages, be automatically aware of these shortages and know about possible alternative suppliers or procedures to acquire a certain alternative or official INFARMED’s guidelines to a specific situation. I think this measure has immensely improved communication between Infarmed and hospital pharmacists.” (Hospital Pharmacist, Portugal)

“Distribution of medicines by the wholesaler proportionally according to previous withdrawals, in order to avoid accumulation of the medicines in one hospital and a shortage in another.” (Hospital Pharmacist, Slovakia)

At a national level, there is a Taskforce for drug shortages, the federal department of national health department develops a reservation stock for critical medicines to help hospitals with problems. We have mandatory communication and a national website Farmastatus.be to see which drug is in shortage and to see the end date if known and alternatives. (Hospital Pharmacist, Belgium)

“For critical drugs should be mandatory that the manufacturers of API are based in Europe and for those essential drugs whose revenues are not enough to guarantee the continuity of production by the pharmaceutical companies, the governments should establish specific funds to support those productions.” (Hospital Pharmacist, Italy)

“Strengthening the pharmacy staff. Strengthening manufacturers, that produce in the EU by focusing on these manufacturers.” (Hospital Pharmacist, Germany)

“The “just in time” principle must not be applied the medicines. We unfortunately have done this on every level in the health care system in my country. But work is being done to rectify this.” (Hospital Pharmacist, Sweden)

“We could produce medicines in hospital pharmacists during shortages.” (Hospital Pharmacist, France)

Fewer responses were received from the other professional groups. The two nurses who commented proposed to improve the information system at the national level and to reduce antibiotic use. For the 10 physicians that provided feedback improving communication and cooperation were the main suggestions. Out of the 52 other healthcare professionals who responded, the majority called for better communication procedures and mutual aid, including simplified transfer between healthcare institutions.

Medicine shortages patient impact

Question 41 (hospital pharmacists) | Question 68 (physicians, nurses and other healthcare professionals): In which area of medicine does your hospital experience shortages most commonly? Please refer to the year 2022.

Over two-thirds of the hospital pharmacists (76% | N=790) that responded to this question selected antimicrobial agents as the area of medicine that is most commonly in short supply in their hospitals. Analgesics (43% | N=441) followed in second place and anaesthetic agents (37% | N=384) ranked third. The latter had been in third place in 2019, while analgesics and oncology medicines that were now ranked fourth (35% | N=368) traded places.

The findings for physicians, nurses and other healthcare professionals differed from those for hospital pharmacists. While all identified antimicrobial agents as the area of medicine that is most commonly in short supply (nurses (63% | N=12), physicians (50% | N=22) and other healthcare professionals (67% | N=68)), their second and third choices differed. Anaesthetic agents and blood derivate products (both 32% | N=6) ranked second for physicians. Followed by analgesics and cardiovascular medicines (both 26% | N=5). For nurses, anaesthetic agents (32% | N=6) came in second place. Like for physicians, analgesics and cardiovascular medicines ranked third (both 26 % | N=5). The second most selected option by other healthcare professionals was analgesics (33% | N=33). Paediatric medicines (30 %| N=30) came third.

Those who selected the option 'other' shared that psychiatric medicines, low molecular heparins and epilepsy medicines are frequently in shortage. Some also mentioned specific brand names.

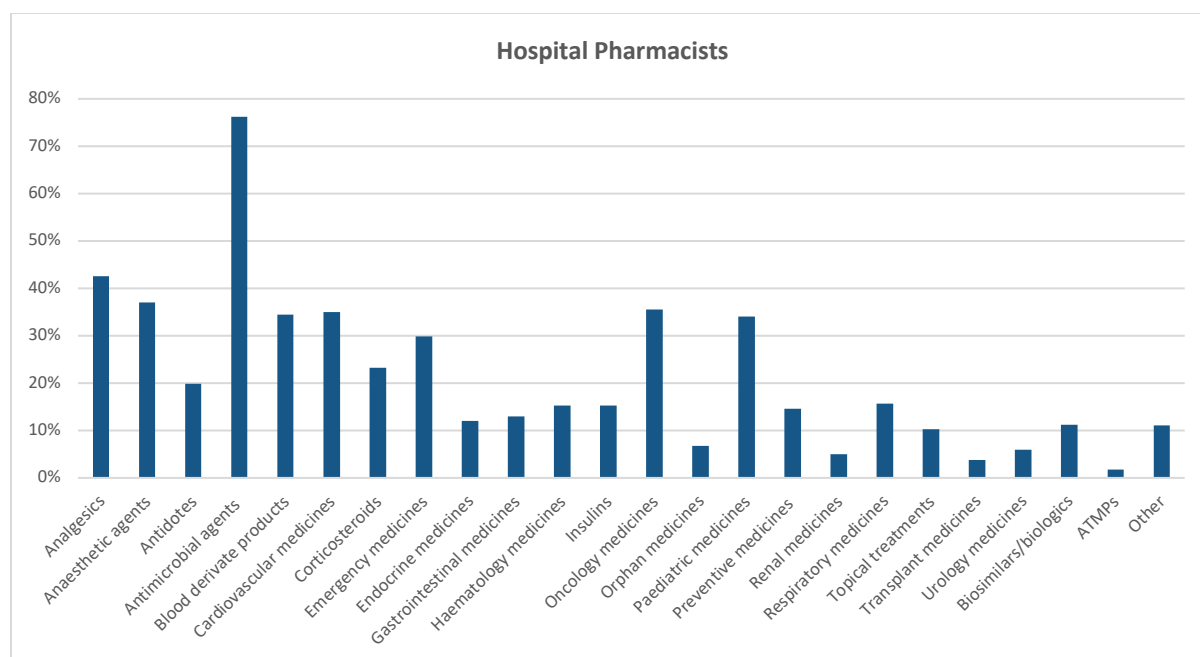


Figure 67 Percentage of responses by hospital pharmacists (N=1037) for question 41 'In which area of medicine does your hospital experience shortages most commonly? Please refer to the year 2022.'. (Note that this was a tick-all question)

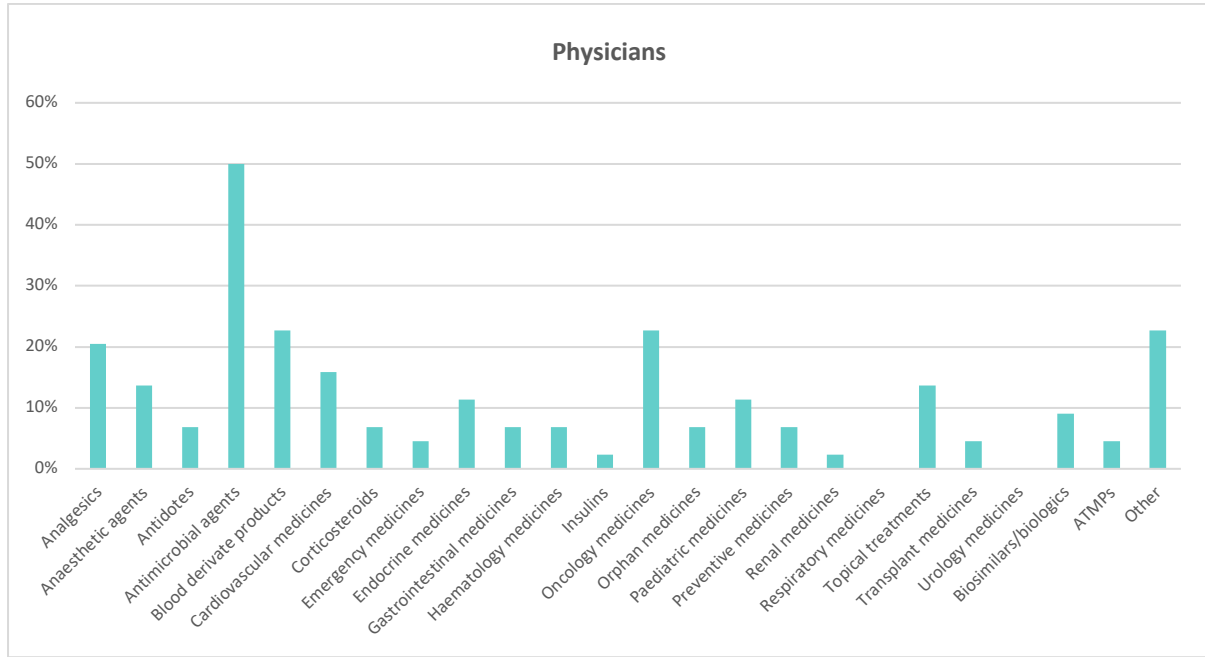


Figure 68 Percentage of responses by physicians (N=44) for question 68 'In which area of medicine does your hospital experience shortages most commonly? Please refer to the year 2022.'. (Note that this was a tick-all question)

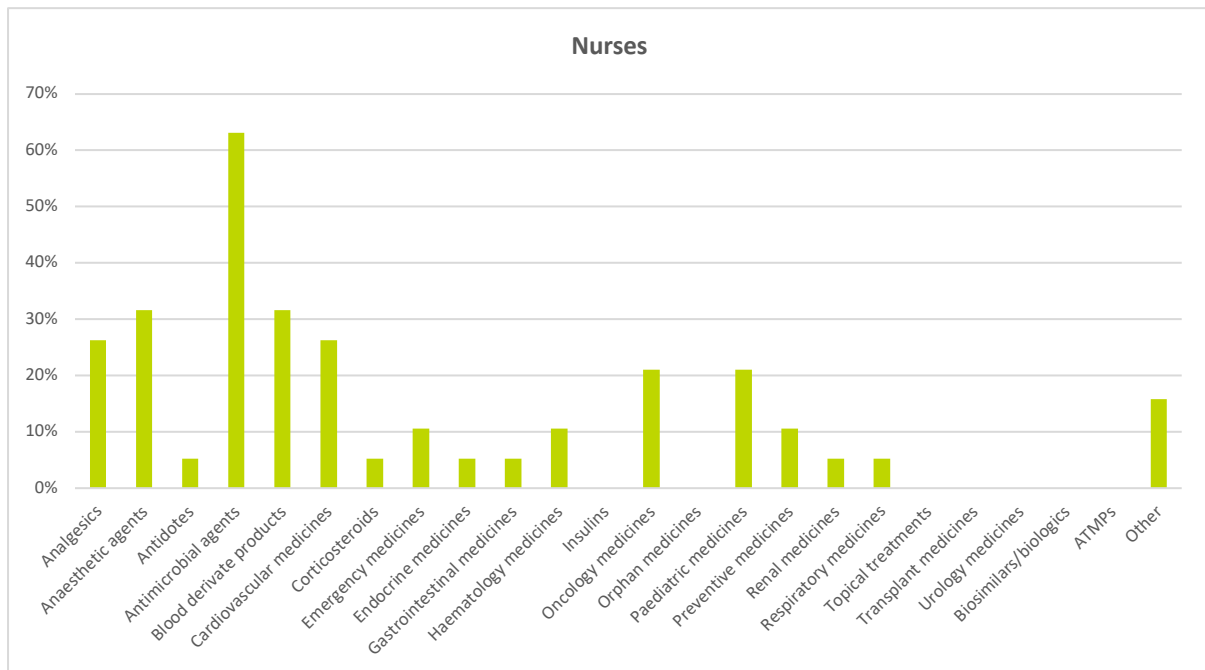


Figure 69 Percentage of responses by nurses (N=19) for question 68 'In which area of medicine does your hospital experience shortages most commonly? Please refer to the year 2022.'. (Note that this was a tick-all question)

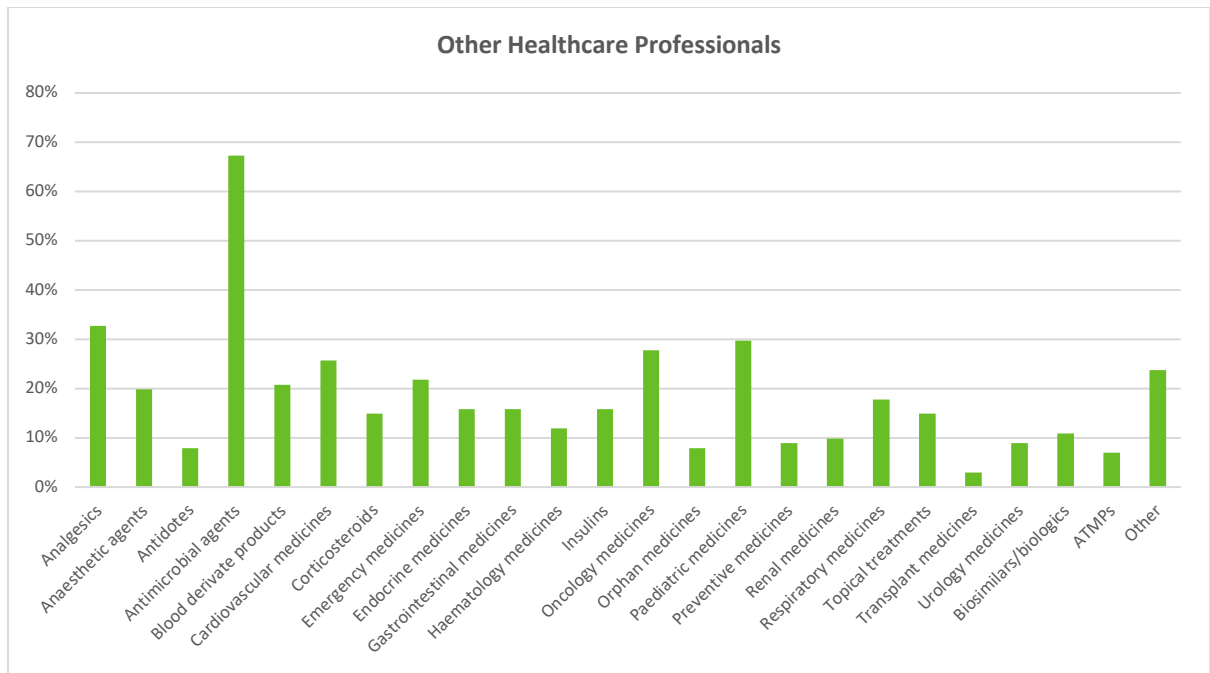


Figure 70 Percentage of responses by other healthcare professionals (N=101) for question 68 'In which area of medicine does your hospital experience shortages most commonly? Please refer to the year 2022.'. (Note that this was a tick-all question)

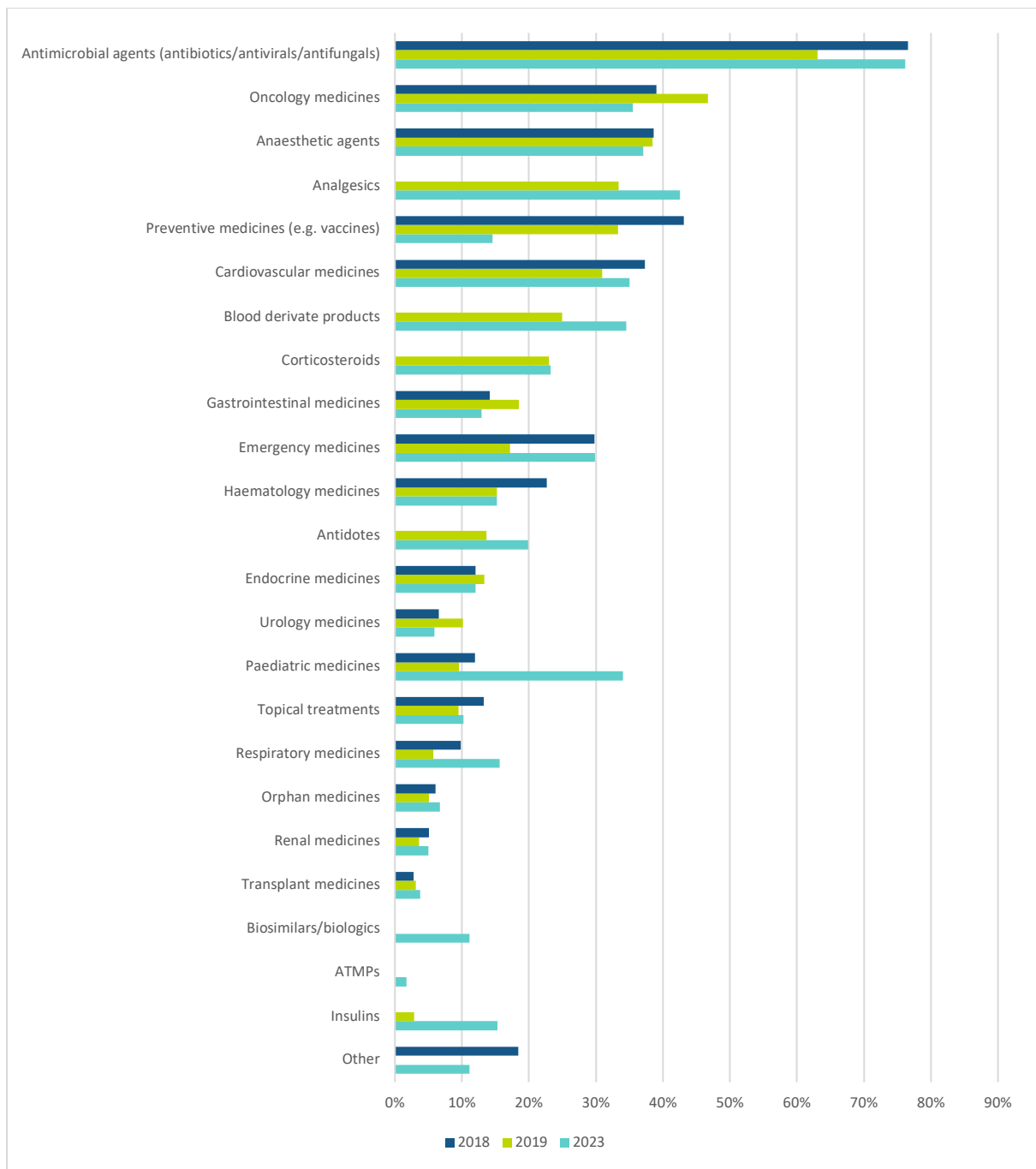
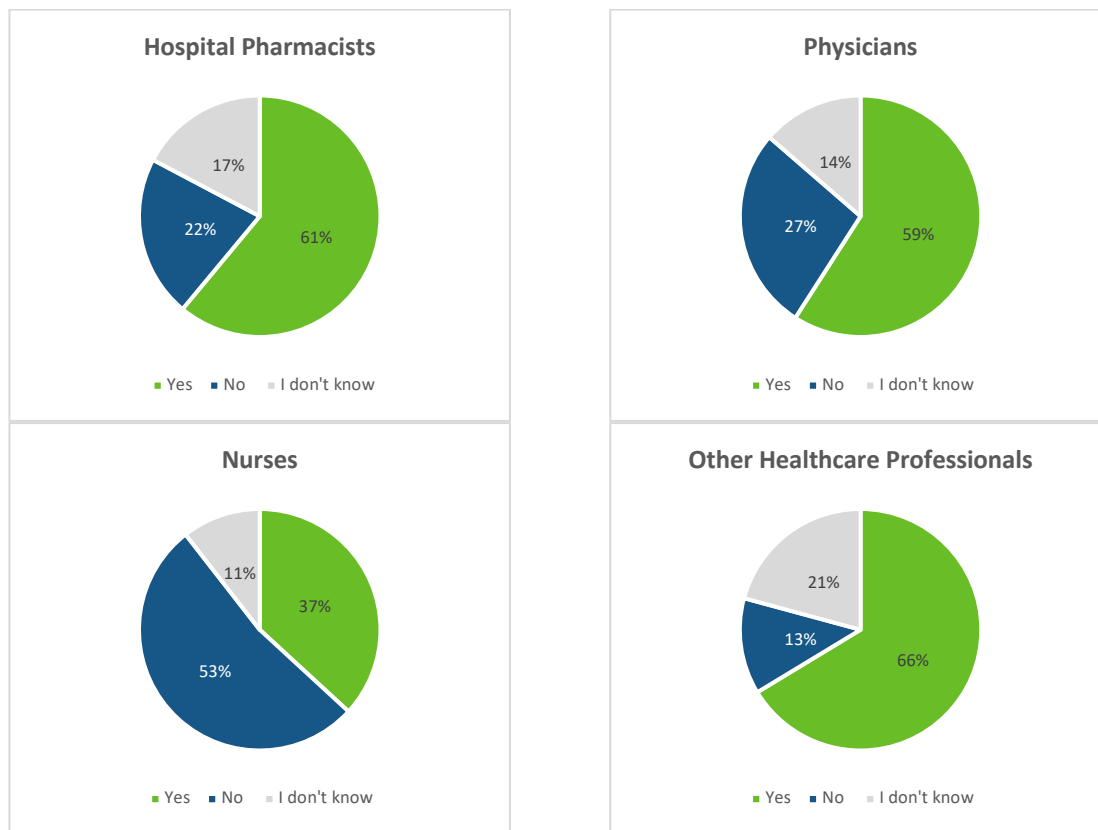


Figure 71 Percentage of responses by hospital pharmacists (N=1037) for question 41 'In which area of medicine does your hospital experience shortages most commonly? Please refer to the year 2022.' compared to responses by hospital pharmacists to EAHP's Medicine Shortage Surveys in 2018 and 2019.

Question 42 (hospital pharmacists) | Question 69 (physicians, nurses and other healthcare professionals): Did the shortage/the shortages you have experienced in 2022 have an impact on patient care in your hospital?

More than half of the hospital pharmacists (61 % | N= 633) who participated in the survey indicated that they had experienced shortages having an impact on patient care in their hospital. A similar response rate was observed for physicians (59% | N=26) and other healthcare professionals (66% | N=67). For nurses the picture was reversed with half (53% | N=10) not having experienced shortages that had a patient impact.

Compared to 2019 the figures remained similar for hospital pharmacists, physicians and other healthcare professionals. For nurses the group that did not know decreased compared to 2019, while those who did not have any experience with a shortage that impacted patient care increased.



Figures 72, 73, 74 and 75 Percentage of responses by hospital pharmacists (N=1037) for question 42, physicians (N=44), nurses (N=19) and other healthcare professionals (N=101) for question 69 'Did the shortage/the shortages you have experienced in 2022 have an impact on patient care in your hospital?', grouped by profession.

Question 43 (hospital pharmacists) | Question 70 (physicians, nurses and other healthcare professionals): Please choose the type of impact medicine shortages had on patient care in your hospital.

This question analysed the effect that medicine shortages had on patient care from the perspective of the four different groups of professionals who participated in the survey. Like in 2019, hospital pharmacists identified delays in care or therapy (59% | N=269), suboptimal treatment (43% | N=268) and cancellation of care (35% | N=220) as the main consequences of medicines shortages in the hospitals where they practice in.

Delays in care/therapy in the disease pathway were selected most by nurses (57% | N=4) and other healthcare professionals (56% | N=37), while physicians opted for suboptimal treatment/inferior efficacy in addition to delays in care/therapy in the disease pathway as their first choice (both 54% | N=14). Cancellation of care ranked second for physicians (35% | N=9) and other healthcare professionals (38% | N=25). Nurses chose this impact as well as increased length of stay in the hospital (both 43% | N=3) in second place. The latter came third for physicians (31% | N=8) and other healthcare professionals (36% | N=24), while nurses placed medication errors third (29% | N=2).

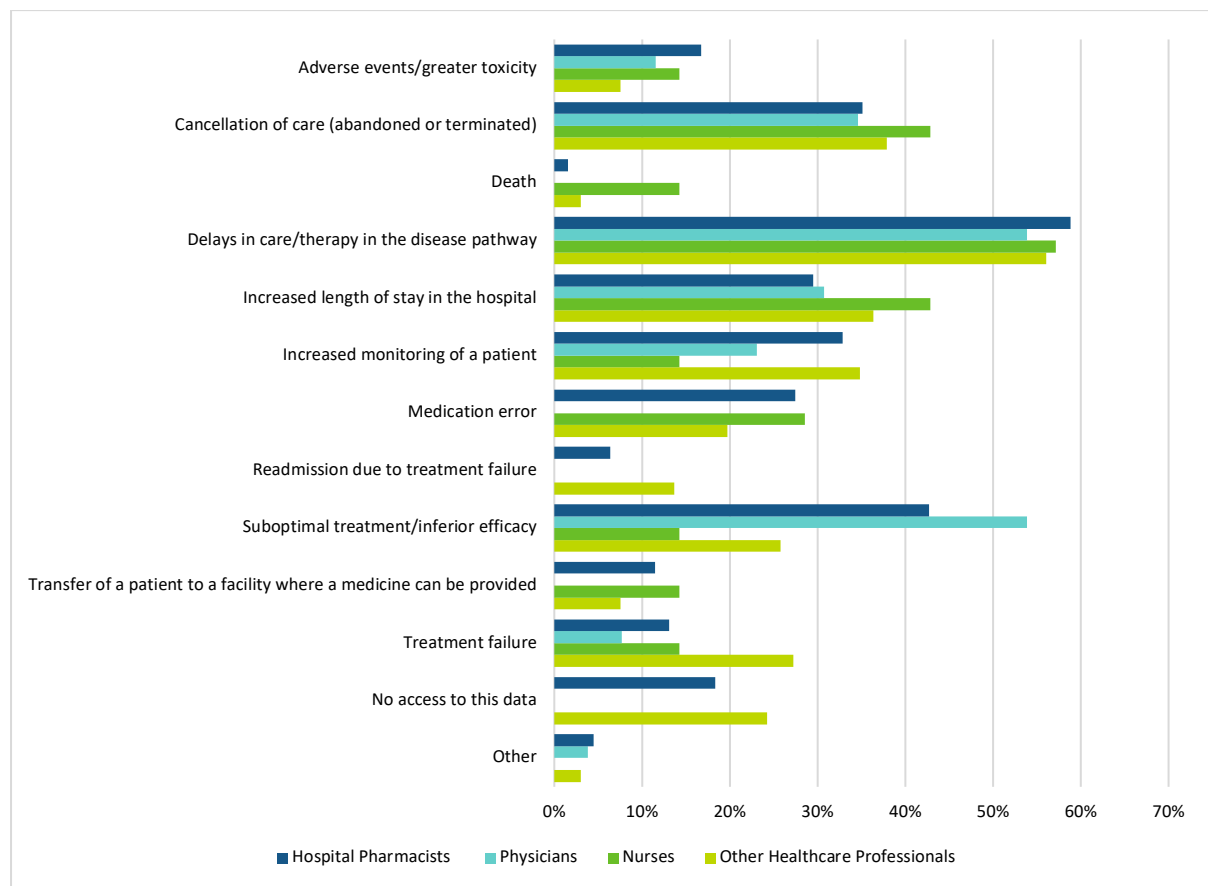


Figure 76 Percentage of responses by hospital pharmacists (N=627) for question 43, physicians (N=26), nurses (N=7) and other healthcare professionals (N=66) for question 70 'Please choose the type of impact medicine shortages had on patient care in your hospital.', grouped by profession.

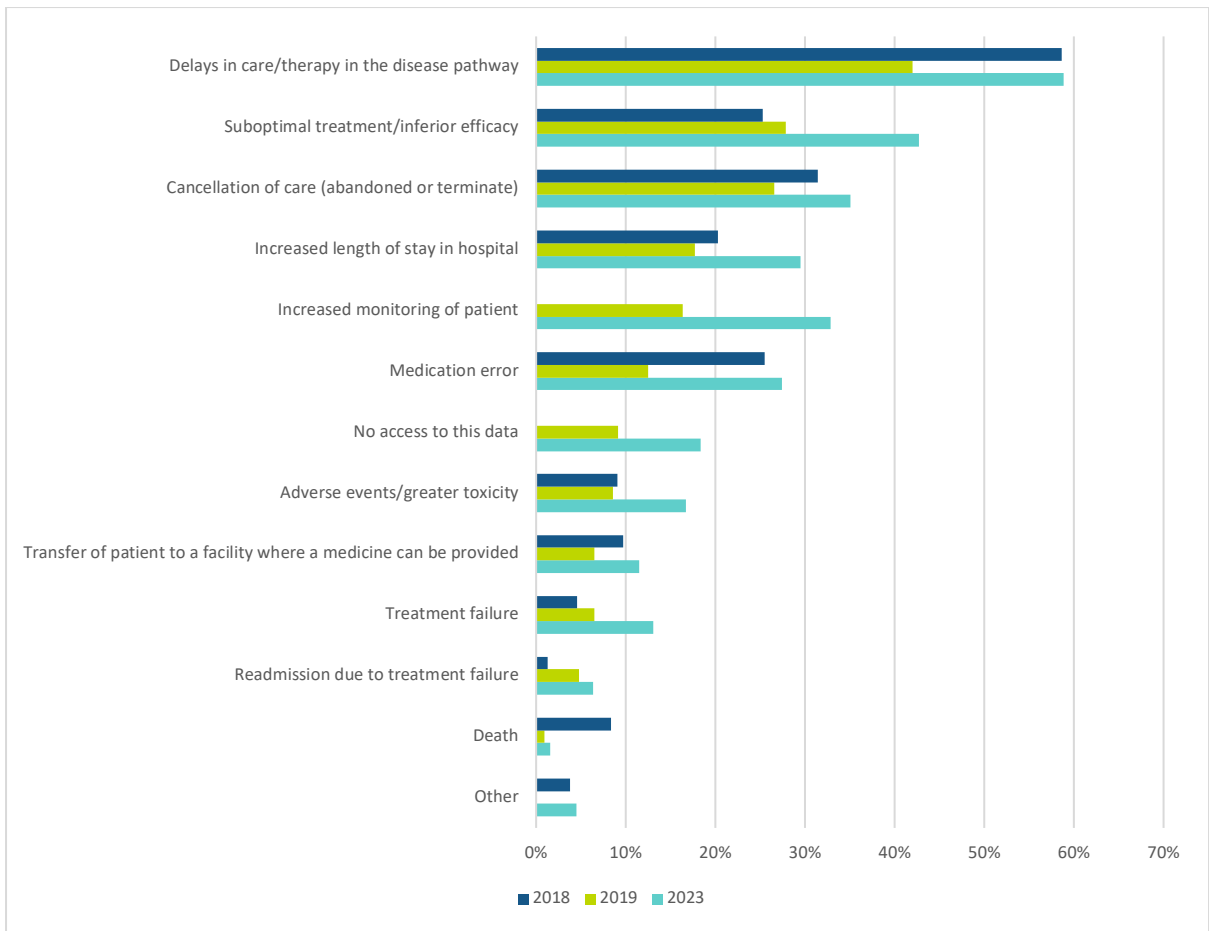


Figure 77 Percentage of responses by hospital pharmacists (N=627) for question 43 ‘Please choose the type of impact medicine shortages had on patient care in your hospital.’ compared to responses by hospital pharmacists to EAHP’s Medicine Shortage Surveys in 2018 and 2019.

Question 44 (hospital pharmacists) | Question 71 (physicians, nurses and other healthcare professionals): Please grade the severity of shortages.

All professions were asked to grade the severity of shortages. For hospital pharmacists and other healthcare professionals, the scale went from moderate (hospital pharmacists (48% | N=303) | other healthcare professionals (47% | N=31)) to severe (hospital pharmacists (31% | N=195) | other healthcare professionals (29% | N=19)) and ended with mild impact (hospital pharmacists (20% | N=124) | other healthcare professionals (23% | N=15)). Only 1% (N=5) and 2% (N=) of other healthcare professionals opted for no impact. For nurses, mild and moderate impact (both 43% | N=3) ranked equally high followed by severe impact (14% | N=2). No nurse and no physician selected 'no impact'. The scale for physicians started with mild (46% | N=12) over moderated (38% | N=10) and ended with severe impact (15% | N=4).

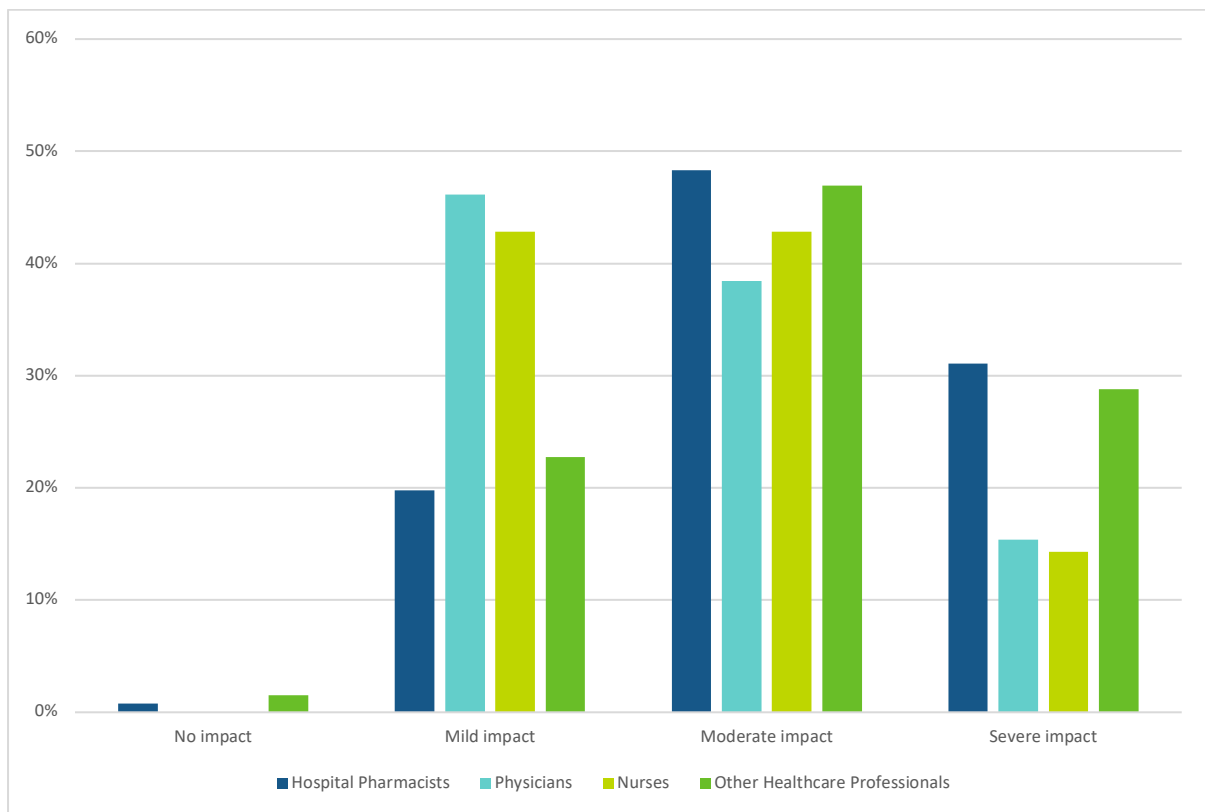


Figure 78 Percentage of responses by hospital pharmacists (N=627) for question44, physicians (N=26), nurses (N=7) and other healthcare professionals (N=66) for question 71 'Please grade the severity of shortages.', grouped by profession.

Question 45 (hospital pharmacists) | Question 72 (physicians, nurses and other healthcare professionals): Were you in a position to prioritize the provision of medicines to the patients based on their disease/clinical status when it comes to medical treatment affected by shortages?

For medical treatment affected by medicines shortages, 40% (N=410) of the hospital pharmacists who participated in the survey were able to prioritise the provision of medicines to patients based on their disease/clinical status. Nurses were able to prioritise in 37% (N=7) of the cases, while both physicians could do so in 36% (N=16) and other healthcare professionals in 39% (N=38) of the cases.

The fact that the option 'I don't know' was introduced in 2023 could have impacted the differences between the results when comparing 2019 and 2023 data. When looking at hospital pharmacists it could be observed that the 50% that selected no in 2019 increased to 44% (N=453) in 2023 due to the 16% (N=168) that could not provide feedback and thus opted for 'I don't know'.

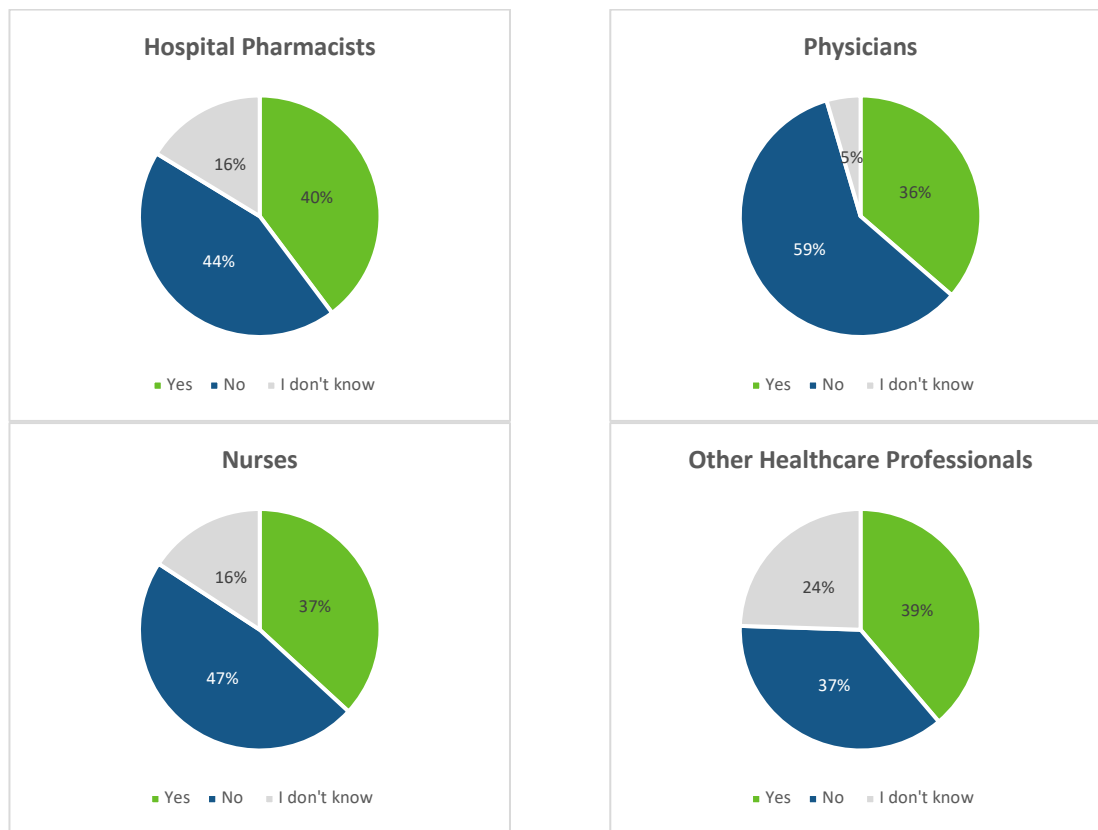


Figure 79 Percentage of responses by hospital pharmacists (N=1031) for question 45, physicians (N=44), nurses (N=19) and other healthcare professionals (N=98) for question 72 'Were you in a position to prioritize the provision of medicines to the patients based on their disease/clinical status when it comes to medical treatment affected by shortages?', grouped by profession.

Question 46 (hospital pharmacists) | Question 73 (physicians, nurses and other healthcare professionals): Did this prioritization affect a larger group of patients who might benefit from the treatment?

Those who responded positively to the previous question were asked if the prioritisation affected a larger group of patients. The responses from the different professionals who participated in the survey were mixed. While an almost equal number of nurses (37% | N=7), physicians (36% | N=16) and other healthcare professionals (39% | N=38) confirmed that a larger group was affected. The response rate by hospital pharmacists was higher with 50% confirming this. Compared to 2019 data the effect of prioritization went down.

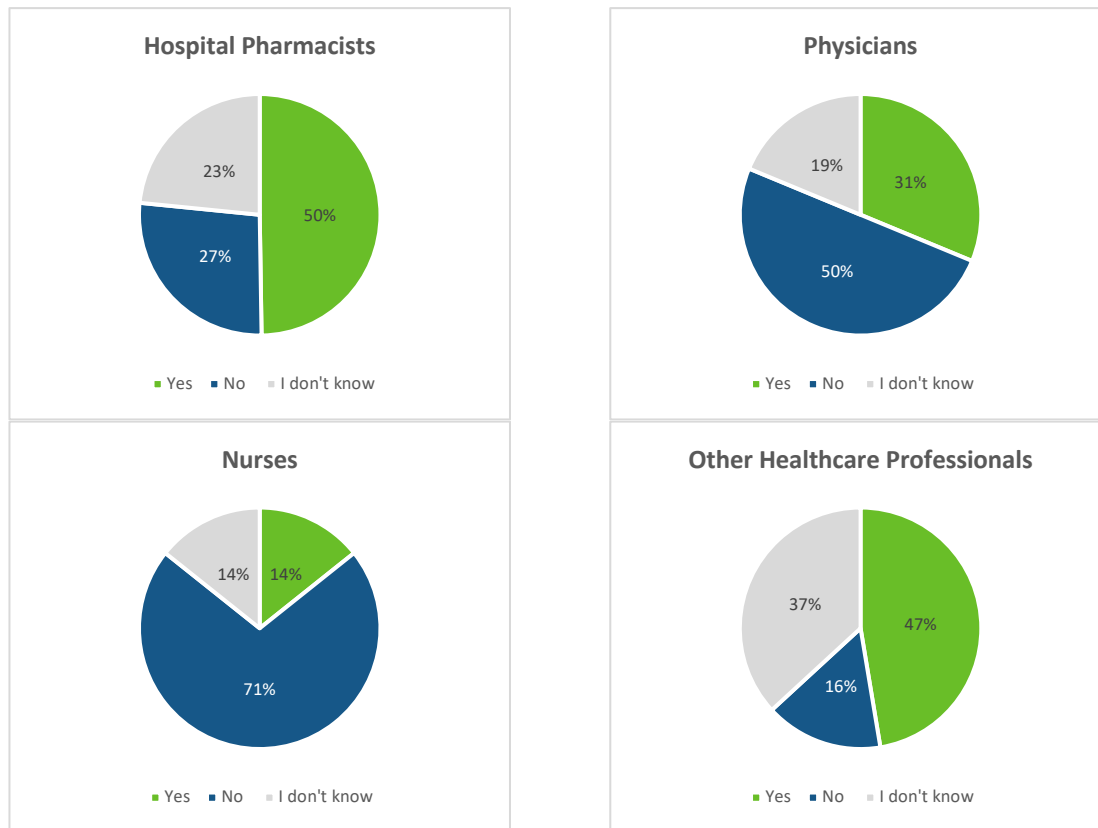


Figure 80 Percentage of responses by hospital pharmacists (N=410) for question 46, physicians (N=16), nurses (N=7) and other healthcare professionals (N=38) for question 73 'Did this prioritization affect a larger group of patients who might benefit from the treatment?', grouped by profession.

Question 47 (hospital pharmacists) | Question 74 (physicians, nurses and other healthcare professionals): Did you experience higher admission rates at your hospital as a consequence of shortages?

More than half of the hospital pharmacists (55% | N=564) stated that they didn't know whether they had experienced higher admission rates at their hospital as a consequence of shortages. This figure was similar to the one recorded for 2019 (59%). For nurses, this figure increased from 43% in 2019 to 58% (N=11) in 2023 who could not provide feedback to this question. For other healthcare professionals, the figure slightly decreased from 71% in 2019 to 69% (N=67) in 2023. Physicians presented the highest percentage (59% | N=16) that answered 'no' to this question.

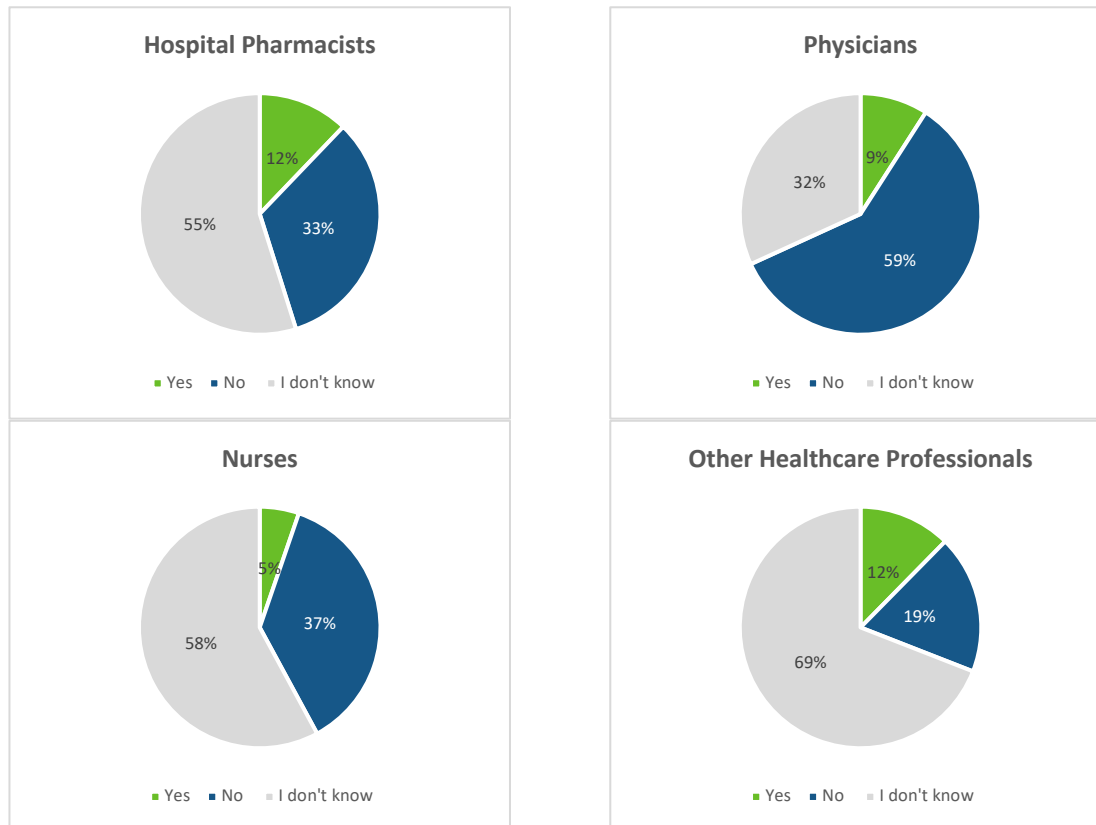


Figure 81 Percentage of responses by hospital pharmacists (N=1028) for question 47, physicians (N=44), nurses (N=19) and other healthcare professionals (N=97) for question 74 'Did you experience higher admission rates at your hospital as a consequence of shortages?', grouped by profession.

Question 48 (hospital pharmacists): Are you carrying out health risk assessments in case of a shortage?

The graph shows that only 15% (N=150) of hospital pharmacists are carrying out risk assessments in case of a shortage. This figure increased by 5% since 2019. 56% (N=574) of hospital pharmacists – in comparison to 69% in 2019 – are not carrying out risk assessments. The remaining 30% (N=304) answered that they didn't know. Risk assessments are still not conducted widely in European hospitals, but over the past 4 years, the situation slightly improved.

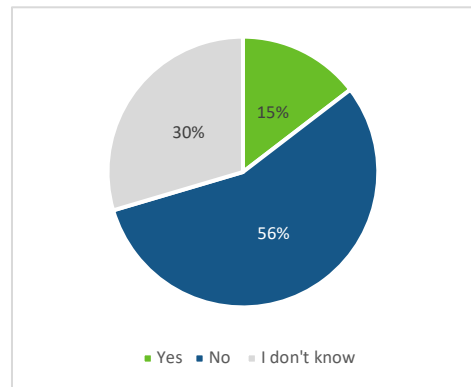


Figure 82 Percentage of responses by hospital pharmacists (N=1028) for question 48 'Are you carrying out health risk assessments in case of a shortage?'

Question 49 (hospital pharmacists): Which tool do you use to carry out the health risk assessment?

Hospital pharmacists had the possibility to specify what tool they use if they answered 'yes' to question 48. In addition to a free text field, three options were offered. Most (32% | N=48) selected the Root Cause Analysis (RCA). While an equal amount (24 %| N=36) opted for the Failure Mode and Effect Analysis (FMEA) and the Healthcare Failure Mode and Effect Analysis (HFMEA). The remaining 13% (N=20) chose the free text response to mention local tools or that they could not provide feedback to this question.

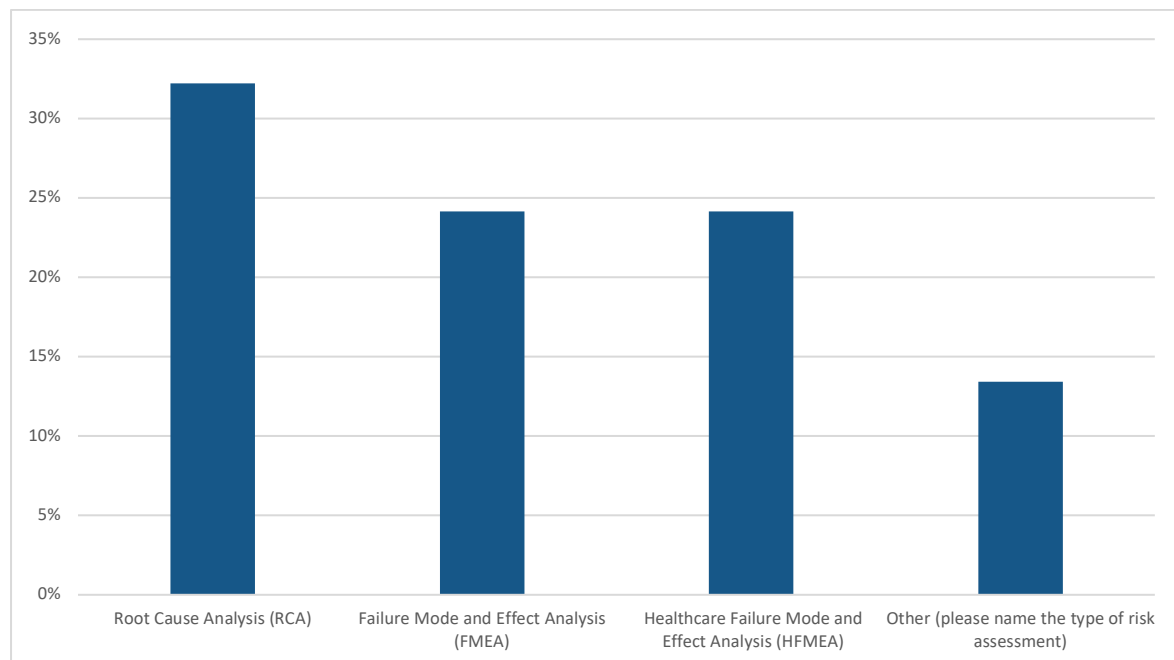


Figure 83 Percentage of responses by hospital pharmacists (N=149) for question 49 'Which tool do you use to carry out the health risk assessment?'

Patients' views and experiences

Question 75 (patients): Did you or one of your family members during a stay/treatment at a hospital ever experience a shortage of medicines?

Patients were given their own set of questions beginning with question 75. Among the respondents to this question, 55% (N=16) reported that they had experienced medicine shortages. 35% (N=10) of the patients who answered this question said that neither they nor a member of their family had been affected by a shortage. 10% (N=2) of the respondents did not know how to answer this question. Compared to the figures from the EAHP's 2019 Medicines Shortages Survey, there was a slight increase (from 47% in 2019 to 55% in 2023) in the respondents who experienced medicines shortages.

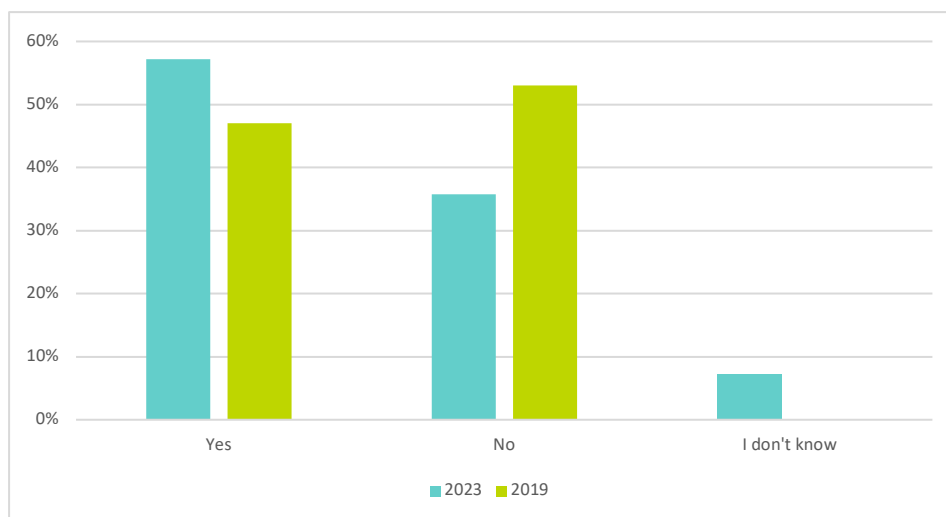


Figure 84 Percentage of responses by patients (N=28) for question 75 'Did you or one of your family members during a stay/treatment at a hospital ever experience a shortage of medicines?' compared to responses by patients to EAHP's Medicine Shortage Surveys in 2019.

Question 76 (patients): Did you or one of your family members during a stay/treatment at a hospital ever experience a shortage of medical devices?

The majority of the patients reported that they had not been affected by a shortage of medical devices (N=13), while a smaller percentage were affected by the unavailability of these products (N=5).

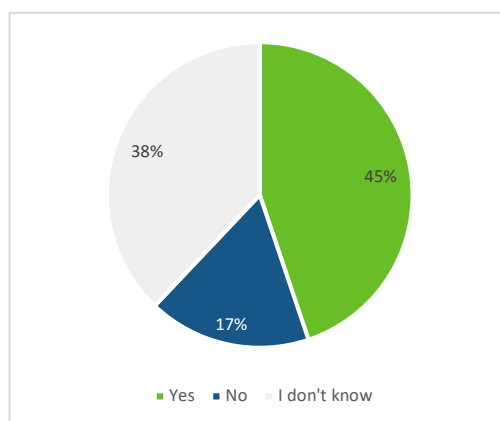


Figure 85 Percentage of responses by patients (N=28) for question 76 'Did you or one of your family members during a stay/treatment at a hospital ever experience a shortage of medical devices?'.

Question 77 (patients): What type of information was provided to you by your hospital pharmacist/physician?

Most of the patients (38%) have received information concerning supply chain problems (N=8), while others (29%) were informed that the shortage was due to manufacturing problems (N=6). A smaller percentage (19%) indicated that the price (N=5) of the medicine and another 19% of patients reported that poor prediction of needs by manufacturers (N=3) led to unavailability problems.

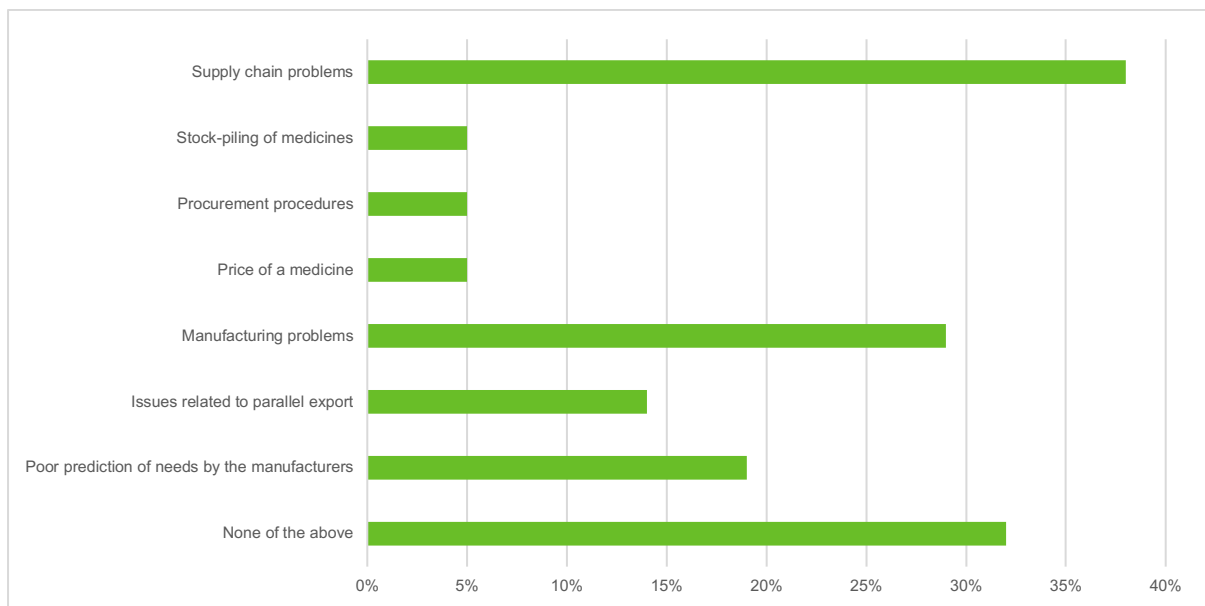


Figure 86 Percentage of responses by patients (N=21) for question 77 'What type of information was provided to you by your hospital pharmacist/physician?'.
Note: The text in the image incorrectly states N=21 for the total sample, while the text above states N=21 for the question. The chart data is based on the text above.

Question 78 (patients): What solution was offered to you?

Patients who were largely affected by a shortage of a medical product have received an alternative treatment to solve the problem (N=8) and others were advised to take a lower dose (N=3) or received a solution that was not listed in the options (N=3).

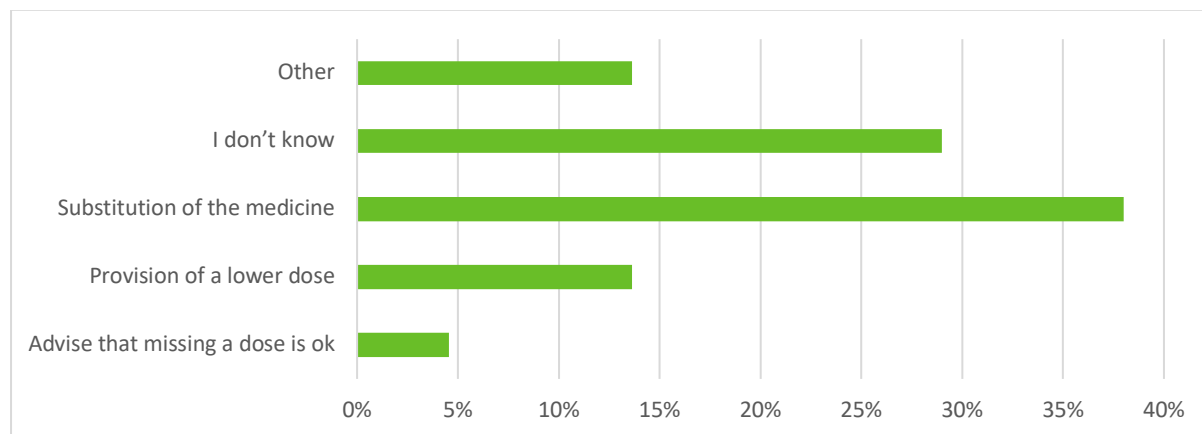


Figure 87 Percentage of responses by patients (N=21) for question 78 'What solution was offered to you?'

Three themes emerged from the free text responses included by patients who selected the option 'Other'. These included sometimes the provision of no dose, substitution with sub-optimal treatment (i.e., with major side effects), finding the medicine in the outpatient setting (in private pharmacies, wholesalers), or waiting because the treatment was not urgent.

Question 79 (patients): Do you feel that the problem was correctly handled?

This question was only answered by those patients who had responded 'yes' to question 77 which inquired about the type of information that was provided by the hospital pharmacist/physician. There were 21 responses to this question, with only 24% (N=5) of respondents stating that they felt that the problem had been correctly handled. In contrast, 33% (N=7) of the patients who answered this question stated that they did not feel that their problem was correctly handled or 43% (N=9) did not know how to respond to this question.

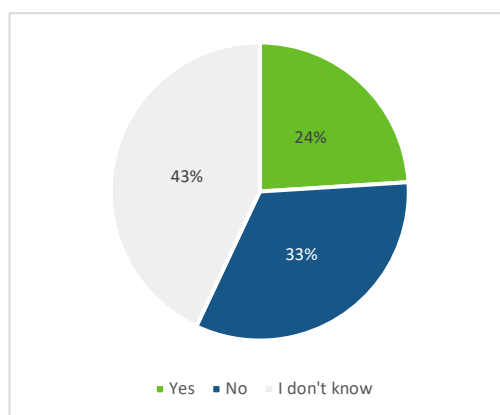


Figure 88 *Percentage of responses by patients (N=21) for question 79 'Do you feel that the problem was correctly handled?'.*

Question 80 (patients): Since you felt that the problem was not correctly handled, please tell us what went wrong and what should be improved.

Patients were asked to give recommendations on how to improve the solutions offered to them and their families in the event of a medicine or medical device shortage. Overall, patients from France used this opportunity to reiterate their concerns relating to the shortage problem. One stressed that the price of the product means that it is not prescribed to patients or is only prescribed in small doses strictly limited and bound to specific medical criteria. Another one reported that *“No communication about the real reason for the shortage. No communication at all until you arrive to be treated (case of repeated treatment). Low overall knowledge about the situation of health professionals...communication between national hospitals and drug agencies (then EMA), where they exist, must be improved”*. A patient from Spain underlined that *“I can't have a lower dosage than the one prescribed by my treating physician without endangering my health”* and another one from the Netherlands reported that *“A generic alternative which was not offered to me”*.

Question 81 (patients): Did the shortage/the shortages that you or one of your family members experienced impact your/the family members' care in the hospital?

This question had 19 responses from patients, with 37% (N=7) of them reporting that the care provided at the hospital was affected by medicines shortages, while 37% (N=7) stated that they did not believe that the shortage had an impact on the care provided in the hospital. 26% (N=5) of respondents did not know how to answer this question.

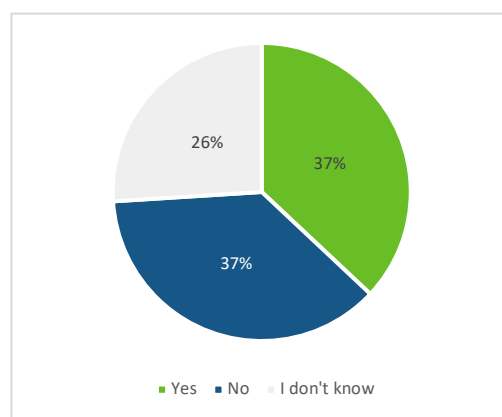


Figure 89 Percentage of responses by patients (N=19) for question 81 'Did the shortage/the shortages that you or one of your family members experienced impact your/the family members' care in the hospital?'

Question 82 (patients): Please choose the type of impact that medicine shortages had on your care/the care of your family member.

This multiple-response question was only answered by those patients who had responded 'yes' to question 81 which inquired "if the shortage/the shortages that the patient or one of him/her family members experienced impacted your/the family members' care in the hospital". This question had 5 responses from patients, with 100% (N=5) having delay in care/therapy in the disease pathway, 40% (N=2) responding that adverse events/greater toxicity affected them, another 40% (N=2) were readmitted due to treatment failure, 20% (N=1) flagging the cancellation of care (abandoned or terminated), 20% (N=1) experienced treatment failure, 20% (N=1) died, 20% (N=1) replying the increasing length of stay in the hospital, 20% (N=1) reporting the increased monitoring.

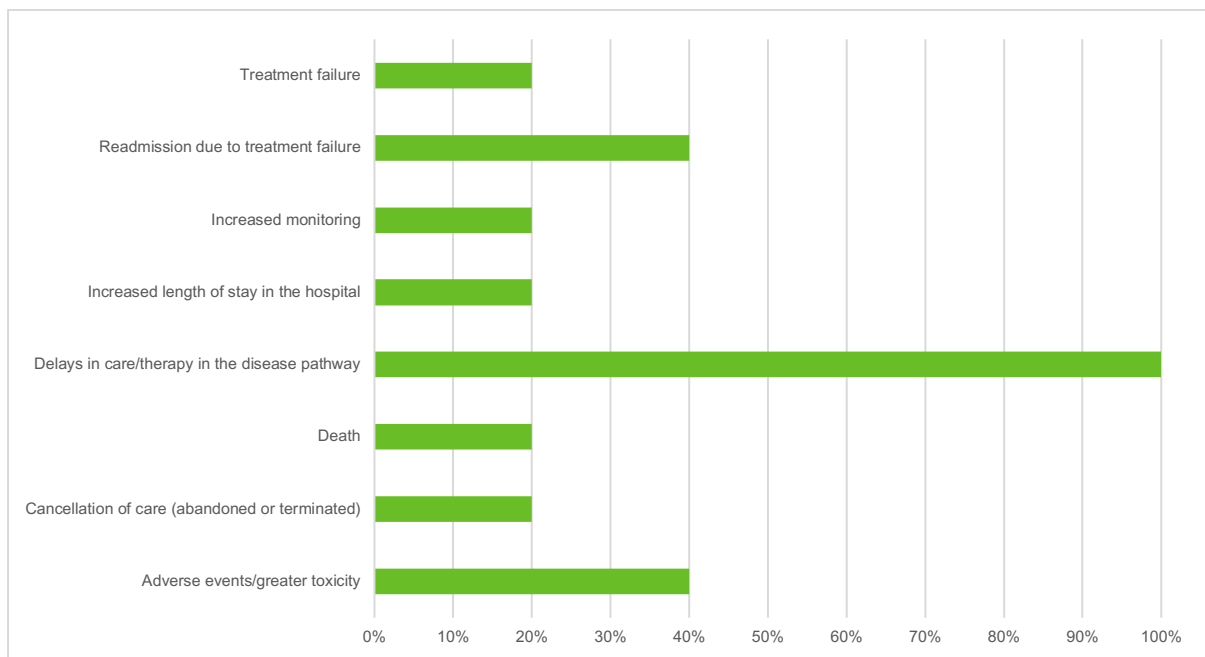


Figure 90 Percentage of responses by patients (N=5) for question 82 'Please choose the type of impact that medicine shortages had on your care/the care of your family member.'.

Annex 1

Annex 1 – Responses by hospital pharmacists from African countries

The 37 African hospital pharmacists that provided feedback to EAHP's 2023 Shortage Survey came from Ghana, Kenya, Nigeria, South Africa, Swaziland and Zambia. Similar to their colleagues in Europe, also 95% (N=35) of African hospital pharmacists reported that medicine shortages are a major problem in their hospitals. Procurement/tendering procedures (70% | N=26), supply chain problems (65% | N=24) and bad planning/forecasting (57% | N=21) were named as the main causes of medicine shortages. In terms of involvement in tendering procedures, African hospital pharmacists are less often engaged (51% | N=18) in comparison to their European colleagues (63%).

Lists of critical medicines seem to be widely used since 90% (N=27) indicated that such lists existed for them. Responsibility for these lists lies with the local healthcare setting committee or the national health authority. In Europe, the situation is different with only 37% of hospital pharmacists mentioning that a list of critical medicines, which should never be in shortage has been put in place. Shortages of medical devices are a problem for 92% (N=22) of African hospital pharmacists.

Concerning patient impact, 87% of the African hospital pharmacists stressed that they had experienced shortages having an impact on patient care in their hospital. Delays in care or therapy, readmission due to treatment failure and transfer of a patient to a facility where a medicine can be provided were frequently reported as factors that influence patient outcomes.

In comparison to the information collected from European hospital pharmacists, the groups of medicines most frequently in shortage do not differ significantly. Over four-fifth of the African hospital pharmacists (86%) who responded to this question selected antimicrobial agents as the area of medicine that is most commonly in short supply in their hospitals. Analgesics (60%) followed in second place and emergency medicines (47%) ranked third.

EAHP 2023 Shortage Survey Report

Shortages of medicines and devices
in the hospital sector – prevalence,
nature and impact on patient care

website | www.eahp.eu
email | info@eahp.eu
phone | +32 (0) 2/669.25.15

