Conclusion SI makes it difficult to manage medicines at the pharmacy service and consumes a significant amount of resources so that they do not affect the patient. Shortages usually increase treatment costs. Considering that most of the supply problems are essential drugs, these problems can compromise the quality of healthcare and patient safety.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

Agencia Española de Medicamentos y Productos Sanitarios, Centro de Inoformación de Medicamentos (CIMA) Disponible en:https://cima.aemps.es/cima/publico/home.html No conflict of interest.

## 2SPD-034

### DRUG SHORTAGES. ANALYSIS OF THE ECONOMIC IMPACT

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10.1136/ejhpharm-2019-eahpconf.74

Background Problems caused by medicines shortages are serious, threaten patient care in hospitals and require urgent

Purpose To evaluate the economic impact of drugs' shortages and analyse the consequences that it entailed in hospital pharmacy services.

Material and methods A retrospective observational study was performed. Medication requests were reviewed through the application of management of medicines in special situations (AGMSE) of the Spanish Medicines Agency (AEMPs) in the past 2 years (from July 2016 to July 2018) in two regional hospitals.

All purchases made by the pharmacy services during that period were reviewed. Those cases in which the purchase was made through the AGMSE of the AEMPs were studied due to a lack of supply by pharmaceutical laboratories. The economic impact of the supplier change was analysed because it could not be purchased from the national supplier. The purchasing management software (SAP) was used in order to calculate economic data.

Results A total of 447 requests were detected through the AGMSE of the AEMPs in the established period: 129 requests (28.85%) were drug-shortage problems which affected a total of 19 different active substances.

Most of the affected drugs (78.94%) were for intravenous administration.

The price of the national drug invoiced during the study period was compared with the price billed through the AGMSE of the AEMPs. This fact meant an increase of € 48,931.32 in comparison with the theoretical amount (€ 22,953.89). It showed an increase of 213.17% compared to the cost if these stock breakages had not occurred.

Conclusion During the study period, the shortage of medicines involved an increase of 213% in the cost of medicines, concerning numerous drugs, especially those for intravenous administration.

When a lack of supply occurs, small hospitals are affected early, consuming economic resources and increasing the work of health professionals.

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No conflict of interest.

#### 2SPD-035 | MEDICINE SHORTAGES: IMPACT ON A THIRD-LEVEL HOSPITAL PHARMACY DEPARTMENT ACTIVITY

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10.1136/ejhpharm-2019-eahpconf.75

Background Medicine shortages (MS) have become a global concern. It is a real challenge for hospital pharmacists who have to search for possible solutions in order to minimise their impact on patient's health.

Purpose The aim of this study was to assess the MS and to evaluate their effect on a third-level hospital pharmacy (HP) department's day-to-day activity.

Material and methods A retrospective descriptive study was carried out between July 2017 and June 2018. Data were obtained from internal MS data logs and MS notification registers from health authorities (HA). Data collected included: active substance, dosage form, manufacturer, pharmaceutical intervention, if the medicine shortage was informed by HA and if it changed the medicine distribution circuit (from community pharmacy (CP) to HP dispensation).

Results One-hundred and fifty-nine MS involving 144 different medicines were recorded during the period of study. Anti-neoplastics (14.5%) and cardiac therapy (10.1%) were the main therapeutic groups affected. In 54 cases (34%) it was necessary to import the active substance. In 43 cases (27%) a controlled medicine distribution programme was initiated to ensure a sufficient supply of medicines to patients. In 26 cases (16.4%) the active substance was purchased from a different manufacturer and in 25 cases (15.7%) a different dosage form was obtained. A therapeutic alternative was used in 11 cases (6.9%), with two of these requiring an importation of a foreign medicine.

35.2% of the MS led to a foreign medicine importation, which represents 26% of our total foreign medicine request applications in a year. According to Spanish law, foreign medicines must be provided by the HP and in 33 cases (20.8%) the medicine distribution circuit changed. One-hundred and eight (67.9%) of the MS registered were informed by HA during the study period.

Conclusion MS represent a significant increase in the hospital pharmacist activity, mainly focused on executing administrative tasks and planning for strategies to maintain the medication supply. Furthermore, this problem implies attending new outpatients who usually collect their medication at the CP. The lack of communication of MS supposes a cause of distress for patients, as they are unaware of the current medicine distribution circuit, and a real risk for treatment discontinuation.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

### 2SPD-036 | STORAGE AND DISPENSING OF SOLID ORAL DOSAGE FORMS FROM MULTIPLE UNIT CONTAINERS

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10.1136/ejhpharm-2019-eahpconf.76

Background Solid oral dosage forms packed in multiple unit containers (SODF-MUC) are exposed, when the package is

A34 EJHP 2019;26(Suppl 1):A1-A311 opened, to the hospital and patients' home conditions (light, temperature, humidity and microbiological).

#### Purpose

- To check the SODF-MUC requirement, after the container opening, in order to determine special conditions for its repackaging and storage.
  - a. Dry place that does not exceed 40% average relative humidity at 20°C or the equivalent water vapour pressure at other temperatures.
  - b. Room with temperature under 25°C.
  - c. Refrigeration, (temperature between 2° to 8° C).
  - d. Protected from the light.
- To quantify the importance of the annual net price of hospital SODF–MUC.

Material and methods Pharmaceutical and technical data of SODF-MUC were extracted from 89 technical sheets inserted in the website of the State Medication Agency.

Dispensations and its price, during the period 1 July 2017 to 30 June 2018, were obtained from the management programme of the Pharmacy Service.

Results Three SODF-MUC had a lack of a technical data sheet

Fifteen SODF-MUC (16.8%) reduced their expiration date (some drastically) after opening the bottle.

Twenty-nine SODF-MUC (32.6%) should be protected from moisture, 18 contain desiccant and 11 recommended to keep medication in the original container and/or in closed bottle.

Thirty-two SODF-MUC (35.9%) do not need special storage conditions, seven contain desiccant.

Ten SODF-MUC (11.2%) have desiccant in the container and colloidal silica as excipient.

Nine SODF-MUC need protection from light, three of these have the same active principle as the other six SODF-MUC which do not require this condition.

In terms of management, 7 63 063 units of 29 SODF-MUC were dispensed, whose net price during the year reached € 13,292,223. It means that 1.3% of the total of specialties consume 16% of annual medication expenditure.

Conclusion The amount and cost of SODF-MUC dispensed are high and their correct use in patients' homes is not guaranteed. Hospital pharmacy departments need conditions suitable for repackaging. This problem would probably be avoided if the SODF-MUC were marketed in single-dose containers.

#### REFERENCES AND/OR ACKNOWLEDGEMENTS

I would like to thank all my colleagues for their continued support. No conflict of interest.

## 2SPD-037

# OVER 5 YEARS OF MEDICINES SHORTAGES IN A UNIVERSITY HOSPITAL

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10.1136/ejhpharm-2019-eahpconf.77

Background Drug shortages, widely reported by healthcare professionals and patients over recent years, are an increasing concern for hospital pharmacists.

Purpose The aim is to verify the impact of a large number of long-term medicines shortages on the daily work of a hospital

pharmacist, in a university hospital (858 beds, 1500 medicines).

Material and methods Since 2013, the hospital pharmacist has identified the medicines shortages and determined the time of unavailability, which has resulted in the implementation of a method for managing medicine supply issues.

Results The number of medicines shortages was 197 (2013), 204 (2014), 260 (2015), 225 (2016), 251 (2017) and 196 (until September 2018). The duration of drug shortages is classified into minor (≤15 days), moderate (15 to 60 days) and major (≥60 days). The number of drug shortages with major duration is increasing over those years (37 in 2013, 53 in 2018). The procedure is based on: searching alternative(s) supported by a decision algorithm (one alternative for 53% of medicines shortages, two for 7% and three for 1%) and deploying a team of hospital pharmacists, pharmacy technicians and administrative personnel. Moreover, a spreadsheet including the results can easily be consulted to be informed about the proposed alternative. Finally, to secure a supply chain potentially at risk of alternative treatment, a communication platform concerning these changes has been developed and the multidisciplinary team is working in collaboration with the Medico-Pharmaceutical Committee to support clear communication to the other healthcare professionals.

Conclusion The implementation of a management structure for medicine supply issues, led by a hospital pharmacist, has become indispensable in dealing with the significant number and duration of current medicines shortages.

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No conflict of interest.

# 2SPD-038

# HOW LONG DO HOSPITAL PHARMACISTS SPEND IN MANAGING MEDICINES SHORTAGES?

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10.1136/ejhpharm-2019-eahpconf.78

**Background** The incidence of medicines shortages has increased during the past few years. In Europe, most of the hospital pharmacists estimate that they spend at least 5 hours (h) per week dealing with shortages.

Purpose The objective was to quantify the time dedicated to managing shortages.

Material and methods A prospective study was conducted in a university hospital over two three-week periods in 2018. Each person from the supply and purchasing staff collected the daily time dedicated to managing shortages. The following data was collected: medicines affected, staff qualifications, supply shortage types and action taken.

Results The average time devoted to shortages was 6.6 hour per day (min=2.6 - max=12.1). The supply staff dedicated 5.4 hour per day (2.2–11.3): 2.1 hour for monitoring, 1.0 hour for meetings, 0.5 hour to update shortage tracking files, 0.5 hour for software settings, 0.4 hour to follow-up existing orders, 0.4 hour for order adjustments, 0.3 hour for writing information notes designed to professionals working in clinical units and 0.2 hour for shortage-suppliers lists analysis. The purchasing staff dedicated 1.2 hour per day (0.2–3.4):

EJHP 2019;**26**(Suppl 1):A1-A311