Conclusion and relevance The development of age appropriate and acceptable paediatric dosage forms is a complex and challenging process, as it is necessary to consider children's acceptability and preferences for different formulations as well as the use of adequate excipients in this population. In our hospital, about one-third of the oral liquid preparations, the most adequate in paediatrics, are SP.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-051 CIRCUIT TO PREPARE AND CONDITION ORAL HAZARDOUS MEDICINES

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Background and importance Current recommendations from the National Institute for Occupational Safety and Health (NIOSH) require hospitals to ensure the safety of hospital workers when handling hazardous drugs (HD).

Aim and objectives To design a circuit to prepare and condition oral HD in a pharmacy service (PS).

Material and methods The HD included in the hospital documented by the NIOSH were selected, as well as those that due to their structure, mechanism of action and toxicity were similar to some HD or that some dangerous characteristic reflected in their data sheet.

Using Farmatools (electronic PS prescription) and electronic medical record programmes, the HD were identified by adding HD or HD-RR (if reproductive risk) to their description, and recommendations for their preparation and administration were incorporated in the file for each HD (this information was integrated into the nursing pharmacological activity sheet where they register the medication administered to patients).

Labels were designed to identify HD boxes in the PS.

The following 'observations on the dispensation' were defined and included in Farmatools:

Solid drugs: repackaged in blister, fractionated and repackaged in blister, dosed in capsule and repackaged in blister. Solid drugs administered by tube or for patients with swallowing problems: tablet packaged in syringe, crushed tablet and repackaged in syringe, powder repackaged in syringe, dosed and powder repackaged in syringe.

Liquid drugs: solution/suspension repackaged in syringe.

A guide was prepared for the administration by tube or for patients with swallowing problems (possibility of disintegrating or diluting in water, volume and time required, need to crush, etc).

Results Identification and recommendations from the computer programmes have allowed the location of the HD treatments in the PS to dispense them prepared, and nurses can differentiate them when necessary. With the pharmaceutical validation of the prescription, the most appropriate pharmaceutical forms were adapted and the corresponding observation was selected for each prescribed HD. Generating a 'treatment location list according to observations', which facilitates Farmatools, has allowed PS personnel to determine the relationship, pharmaceutical form and conditioning of the prescribed HD that have to be prepared.

Conclusion and relevance Changes in computer programmes have allowed the design of a circuit to prepare and condition oral HD and improve the safety of hospital workers.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-052 HAZARDOUS MEDICINES IN A PAEDIATRIC HOSPITAL

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Background and importance According to the European Commission, every year more than 20 million workers in Europe are exposed to carcinogenic, mutagenic, reprotoxic hazardous drugs, including cytotoxic drugs.

Aim and objectives To review the safety of handling hazardous drugs in our paediatric referral hospital, according to the national guidelines included in the 'technical document on hazardous medicines, preventive measures for their preparation and administration'(TDHM), published on 2016 by the Spanish National Institute for Safety and Hygiene at Work.

Material and methods Medicines included in our pharmacy formulary labelled as hazardous were identified, listed and classified into three groups according to the proposed model of the National Institute for Occupational Safety and Health (NIOSH). We categorised each group in two according to the route of administration (parenteral/oral). Those administered orally were divided according to their need for reconstitution or manipulation before administration. Also, we noted if drugs were currently prepared in the pharmacy department (PD).

Results (Figure 1).

Routes groups	1	2	3
Drugs	40	45	17
Parenteral administration	All prepared in PD*	9	11
		7 prepared in PD	8
		1 Bag ready to administer	2 2 bags ready to administer
		1 A. ampoule prepared out of PD due to the product stability *	5 B. prepared out of PD*
Oral administration	5	8	3
	All compounded as oral liquid formulations	5 Compounded as oral liquid formulations	C. All prepared out of PD*
		1 Reconstituted in PD*	
		2 D. reconstituted out of PD*	

Abstract 3PC-052 Figure 1

Conclusion and relevance After analysing our hazardous medicines handling protocols, we found that there is still room for improvement. We describe the actions planned for each drug group:

- Requesting compounded intravenous products to be stored in vials instead of ampoules would allow preparing them using enclosed systems.
- Regarding the five parenteral route group (three hazardous medicines currently prepared by nurses), three could be prepared in the PD and, for the remainder, an accurate handling protocol could be developed to ensure utilisation of the enclosed systems for their preparation.

- C. Regarding the five oral route group (three hazardous medicines), reconstitution is required for three, which can be done in the PD. The other two are sold in sachets, so we plan to develop a handling protocol.
- D. Directly proposed to prepare them in the PD.

Finally, we encourage implementing safe handling recommendations to achieve the goal of a safety plan for workers.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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No conflict of interest.

3PC-053 IMPACT OF SERIALISATION ON RECEPTION OF MEDICINES AND ACTIVITY SMOOTHING

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Background and importance In February 2019, EU regulation 2016/161 made serialisation compulsory to improve the safety of medicines. This new regulation caused a major change in our practice of receiving medicines. Indeed, because of the high number of boxes received, we will install a robot to decommission all the medicine boxes.

Aim and objectives To identify the modifications in our reception process with the new regulation.

Material and methods Reception data on our managing software (Copilote) for the last 23 weeks were exported and analysed by Excel.

Results The new regulation will reorganise our process of reception by creating three different flows instead of one. The three identified flows are: serialisable+robot (SR); serialisable+no robot (SNR); not serialisable+no robot (NSNR).

SR products will be handled by the robot whereas SNR will be decommissioned when received. We need to change our analysis method, from lines of product received to number of medicine boxes received, in order to assess the required volume of storage of our new robot. The main flow is SR (71%), followed by SNR (28.5%), whereas NSNR is negligible (0.5%). We observed that the number of drug boxes received was not smooth, with peak activity every 8 weeks.

Conclusion and relevance We identified the major changes caused by the new regulation and changed our analysis method to fit the new regulation. We will now analyse the largest laboratory orders to try to smooth out activity. Therefore, we will change the order calendar. Consequently, we expect an improvement in activity in order to stock the medicine boxes in the robot and reduce the delay in reception.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-054 SODIUM BENZOATE SUSPENSION IN NON-KETOTIC HYPERGLYCINAEMIA: A CASE REPORT

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Background and importance Non-ketotic hyperglycinaemia (NKH) is a rare inborn error of glycine metabolism characterised by accumulation of glycine in body fluids and tissues,

resulting in neurometabolic symptoms of variable severity. Sodium benzoate is the sodium salt of benzoic acid that conjugates with nitrogen containing glycine to form the molecule hippurate. Hippurate can be excreted by the kidneys, reducing plasma glycine levels. N-methyl-D-aspartate receptor antagonists may ameliorate neurological symptoms although it remains to be established whether they improve long term outcome. Lack of authorised presentations for treatment of rare diseases is an important obstacle that is usually resolved by hospital pharmacy formulations, especially in children.

Aim and objectives The aim was to provide an adequate, stable and well accepted oral sodium benzoate formulation for a patient with NKH, to improve her general status

Material and methods A 4-year-old girl with severe NKH needed oral treatment with sodium benzoate, although there is no standard oral formulation for children. To find an optimal and suitable solution, a literature search was carried out in the National Library of Medicine's (MEDLINE) database, including terms 'sodium benzoate/chemistry', and 'administration, oral' with no other filter. Our national and regional formulation databases were also checked.

Results The patient was initially treated with 16 mL, three times a day, sodium benzoate syrup 112.5 mg/mL, but the volume needed was impossible to swallow by the patient due to her clinical status. Subsequently, 2 g sodium benzoate sachets were given with meals (four times a day) but they were not well tolerated.

We then dispensed a 250 mg/mL suspension in Ora-Sweet with a stability of 90 days. Despite it being a new formulation for our pharmacy service, glycine levels were reduced from 900–1000 µ/L to 500 µ/L over 2 months. Currently, her clinical situation is stable, and the patient receives 8 g/24 hours of sodium benzoate which is well tolerated.

Conclusion and relevance Sodium benzoate oral suspension dispensed with Ora-Sweet seemed to be an adequate solution to NKH treatment in our patient. Although the formulation is a basic operation for hospital pharmacy services, it is essential, especially in children with rare diseases that need orphan drugs.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

Section 4: Clinical Pharmacy Services

4CPS-001 EXPERIENCE WITH THE NEW DIRECT ACTING ANTIVIRAL AGENTS IN A THIRD LEVEL HOSPITAL IN 2018

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Background and importance The new direct acting antivirals (DAAs), indicated in chronic hepatitis C (HCV), show a sustained virological response at 12 weeks (SVR12) >90% in clinical trials, with worse results in patients with genotype 3.

Aim and objectives To analyse the effectiveness of the new DAAs in a real cohort of HCV patients during 2018, and establish if there are differences between genotypes.

Material and methods This was a retrospective observational study including all patients treated with DAAs in 2018. The