Background and Importance At the beginning of October 2019, an international shortage of ranitidine forced us to adjust paclitaxel-based chemotherapy premedication regimens. After several modifications, we implemented an anti-allergic premedication protocol based on Dexchlorpheniramine as histamine-1 antagonist (H1A), Methylprednisolone as corticosteroid (Double dose at first injection) and withdrawal of histamine-2 antagonists (H2A).
Aim and Objectives This study aimed to determine the efficacy of this modified regimen and assess the hypersensitivity reactions (HSRs) associated with it.
Material and Methods We conducted a single-centre observational retrospective study of paclitaxel administrations (n=831 patients). All incidents characterised as drug allergies in the prescribing software were exhaustively recorded over a two-year period from January 2019 to December 2020 (before and after ranitidine shortage, including the period with oral Famotidine as a transitional alternative). To model the risk of allergy at each injection according to the type of injection and possible confounding factors, a mixed logistic regression model was implemented to account for repeated administration per patient.
Results Among the 7146 paclitaxel administrations, there were a total of 27 HSRs occurring in 24 patients, among whom three patients had two consecutive events. No protective effect was observed for H2A premedication regimens, neither when comparing the two types of H2A (famotidine or ranitidine) separately ($p = 0.94$) nor when comparing injections with H2A premedication versus injections without H2A (OR: 1.12, 95% CI, 0.36-3.50, $p = 0.84$). However, the risk of HSRs was significantly lower for paclitaxel injections with corticosteroids than for those without corticosteroids (OR: 0.08, 95% CI: 0.008-0.78, $p = 0.03$). In addition, the risk of HSR was significantly higher for the first, second, or third paclitaxel injections than for the subsequent injections (OR: 10.1, 95% CI: 3.23-31.4, $p < 0.001$).
Conclusion and Relevance We did not find evidence of an increased risk of HSR due to the absence of H2A in the premedication protocols of Paclitaxel. Our findings support the choice of a premedication protocol without H2A, despite what is historically stated in Paclitaxel monographs.

REFERENCES AND/OR ACKNOWLEDGEMENTS
Conflict of Interest No conflict of interest

5PSQ-016 HUMAN FACTORS ROLE IN MEDICATION ERRORS: DILUTING INTRAVENOUS MEDICATIONS AT HOSPITAL WARDS – A STUDY BASED ON INCIDENT REPORTS

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Background and Importance Humans make mistakes, inadvertently when making poor decisions, being distracted or when not perceiving risk whilst managing medications. Health professionals do not make mistakes on purpose, yet medication errors remain the most common type of medical errors. A human factors approach can be applied to address the causation of medication errors from a process point of view while addressing our error-prone human nature. Intravenous medications are complex to prepare and administer. Specific tasks, such as diluting intravenous medications are at a higher risk of medication errors.
Aim and Objectives This study aims to address human factors in medication calculation errors involving dilution of intravenous medications.
Material and Methods From the medication errors reported in 2016 and 2017 to the Norwegian Incident Reporting System, we specifically scrutinised medication calculation errors that required dilution during medication preparation, dispensing and administration. We included real events that had reached the patients, and which contained sufficient incident description to allow for causal analysis. From the incident descriptions, we conducted a content analysis of human factors.
Results In total, 14 incidents met the inclusion criteria and involved the dilution of morphine, oxycodone, adrenalin, and noradrenalin. Several human factors exposed the intravenous preparation process to risks. For example, performing tasks with cognitive loads, such as dilution, followed by bedside dose calculation whilst providing patient care. Some dilution errors were caused by not knowing the exact concentration after dilution, which resulted in one infant receiving 7 mg of morphine instead of 0.7 mg. Administering from a syringe that contains more than the prescribed dose was found as a high-risk practice. Most dilution errors led to overdosages and resulted in patient harm.
Conclusion and Relevance This study discusses how cognitive processing is related to medication errors. Addressing human factors that contributed to medication errors should involve systemic measures which take in account how humans think and process information to avoid patient harm from dilution errors.

REFERENCES AND/OR ACKNOWLEDGEMENTS
Conflict of Interest No conflict of interest

5PSQ-019 ANALYSIS OF THE USE OF IDARUCIZUMAB IN A TERTIARY HOSPITAL

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Background and Importance The evaluation of anticoagulation reversal practices of direct-acting oral anticoagulants allows their optimisation by improving their safety and efficiency.
Aim and Objectives To review the use of idarucizumab in the reversal of the effect of dabigatran and to evaluate its effectiveness in the normalisation of coagulation parameters and clinical evolution of the patient.
Material and Methods Descriptive, observational, retrospective study of all patients who received idarucizumab in the period from December 2015 to June 2022, inclusive, in a tertiary hospital. Data were collected from the electronic medical record. Variables assessed were: demographics (age, sex); coagulation parameters [activated partial thromboplastin time (aPTT)]; indication and dose of dabigatran; reason for

prescription and dose of idarucizumab; response to treatment (normalisation of aPTT and clinical evolution).

Results Fifty-four patients prescribed idarucizumab were identified. One patient was excluded because active treatment was declined (n=53). Median age was 82 years (RIQ: 75-88.5), 58.5% male and 41.5% female. The indication for dabigatran was stroke prevention and systemic embolism due to non-valvular atrial fibrillation in 52 patients and stroke in 1 patient. The doses of dabigatran reported in the medical records were: 150 mg/12 h in 16 patients, 110 mg/12 in 34 patients and 75 mg/12 in 1 patient (no data in 2 patients). Thirty-six patients received idarucizumab for major bleeding, 12 for urgent surgery, 3 for urgent invasive procedure and 2 for supratherapeutic levels of dabigatran. In all cases the indication was established by the haematology department. Median aPTT before antidote administration was 46.95 seconds (RIQ: 35.2-52.5) (n=52); 1 patient had supratherapeutic levels of dabigatran, showing incoagulable. Median aPTT after idarucizumab administration was 27.4 seconds (RIQ: 25-29.8) (no post-administration aPTT values in 6 patients). The dose of idarucizumab was 5 g in all cases. Four patients died. In 49 patients treatment was effective with no episodes of rebleeding or thromboembolism.

Conclusion and Relevance Idarucizumab was mostly used in major bleeding. Treatment was effective in 92% of the study population.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of Interest No conflict of interest

5PSQ-020 ANALYSIS OF A PHARMACEUTICAL INTERVENTION IN POLYMEDICATED PATIENTS TO INCREASE THE SAFETY AND ADEQUACY OF THEIR TREATMENT

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Background and Importance Polymedication has potential health risks for patients such as interactions and increased risk of adverse effects that can be fatal.

Aim and Objectives The aim of this study was to analyse a pharmaceutical intervention carried out by a group of pharmacists in patients taking 15 or more drugs concomitantly to improve the safety and adequacy of their prescriptions.

Material and Methods Pre-post study that included patients of any age, with 15 or more drug prescriptions, prescribed by a general practitoners (GPs) in the electronic prescription system, from January to December 2021. The intervention was performed by 9 pharmacists in 35 primary health-care centres (PHCC) and 673 GPs. They provide health care to 677,782 inhabitants. First, a general session was held in each PHCC, presenting the objectives and informative material. Subsequently, individual meetings were scheduled with each physician, in which the pharmacists provided the prescribers with lists of polymedicated patients (PP) and various local documents, STOPP/START, Beers criteria and clinical practice guidelines to help review treatments. Each prescribed drug was evaluated based on its necessity, effectiveness, appropriateness and safety. In addition, the pharmacists also issued review reports on patients with particularly complex pathologies. The reviews performed were recorded by the GPs in the digital health record. These records and lists of PP were extracted thanks to a local software application and analysed in Excel.

Results Pharmacists provided 39 group training sessions and 387 individual meetings to the Gps. A total of 1468 patients met the criteria for PP. Mean age 73.58 years+-11.14(58% women). Prescriptions of 91.7%of PP were reviewed at least once in 2021. A total of 4,848 reviews were performed.

In 14.41%of the cases, a new treatment was started. In 14.73%of the revisions, it was necessary to change the dosage or the prescribed treatment regimen. In 27.81%of the cases, the GPs cancelled a drug from the patient´s prescriptions. In 54.68%of the reviews, no change in treatment was made

Conclusion and Relevance The intervention had a high level of acceptance.

Despite the high percentage of patients reviewed, it is striking the high number of patients in whom, no change in their treatment was made, which raises the question of whether the reviews were correct.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Conflict of Interest No conflict of interest

5PSQ-021 AUTOMATION MEETS TRACEABILITY TO OPTIMISE DRUGS AND MEDICAL DEVICES LOGISTICS GUARANTEEING PATIENT SAFETY AND HOSPITAL STAFF WELL-BEING

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Background and Importance Hospital San Raffaele was seeking a solution to improve the medication management process and logistics, spanning from central pharmacy to the patient's bedside, in order to avoid shortage, improve staff well-being and patient safety by ensuring the five rights of medication administration (patient, drug, dose, time and route).

Aim and Objectives The Covid emergency, the shortage of personnel and the need to control healthcare spending, are key drivers in seeking innovative solutions to improve the efficiency in drugs and medical devices logistics.

The new system includes a new generation of automated carts and cabinets: before each round, the software predicts the overall need for drugs/medical devices.

The drugs are automatically loaded into the carts without any human intervention.

During the round, once the patient is identified, the automated cart retrieves the drug(s) to be administered and places them directly on the countertop.

The system tracks all the operations: which drug was administered, at what time and by whom.

The new system enables end-to-end traceability ensuring the complete visibility to the hospital pharmacists/staff on drug flows from the central pharmacy up to medicines' administration and bringing many benefits such as: logistics optimisation and inventory accuracy by avoiding waste and shortage, while guaranteeing precise recalls/withdrawals and having a real-time visibility on the entire hospital stocks.Material and Methods

The study compared the new AUTOMATED solution versus the TRADITIONAL one by measuring different metrics and KPI.