an extraction of the software was done to study the forced steps (the steps refused by the software but accepted by the pharmacist because of the correct volume read) over a period of 6 months.

Results The metrological tests enable to qualify the balances. The bias of the weighing scales fluctuates between 0.94% and 4.40%. Over 6 months, 15 227 preparations were realised with a total of 1 89 334 steps including 49 180 weighing steps. Among those, there were 2023 forced steps (4.1%). The most forced cytotoxic molecules were identified. The two most forced stages were the weighing of the syringe with cytotoxic (41%) and of the final pouch (23%). The 50 ml syringe is responsible for 41% of this forced stage and, in 85% of the cases, it is because the volume to collect has a decimal value.

Conclusion Concerning the sensitivity, a method is elaborated to determine the rate of the false negatives with a fake cytotoxic preparations plan and calculated weighing errors. Our method validation plan is complete with the validation of the two components: precision scale and software.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

3PC-025 OPTIMISATION OF COMPOUNDING ORGANISATION AFTER IMPLEMENTING A ROBOTIC SYSTEM FOR AUTOMATED PREPARATION OF ONCOLOGIC DRUGS

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Background The aseptic preparation of oncologic drugs is performed in the centralised, pharmacy-based cytotoxic drugs preparation unit equipped with a biological safety cabinet and the robotic system APOTECAchemo (Loccioni, Italy), installed in 2012. Manual and fully automated preparations run in parallel are operated by two and one pharmacy technicians (PT), respectively. On average, the annual workload amounts to 35 000 preparations, two-thirds of which are prepared with the robotic system.

Purpose The aim of this study was to evaluate the working efficiency of PT after implementing the robotic system and calculate the amount of preparations to be transferred from the manual to the automated process to optimize human resources' utilisation.

Material and methods Manual and automated preparation were analysed over three years (2014–2016). Full-time equivalents (FTE) required by both processes were calculated for each year. A FTE of 1.0 was equivalent to a PT working full-time 40 hours per week, 1,700 hours per year. The throughput in terms of annual preparations per FTE was calculated including direct activities (compounding) and indirect activities related to production (quality controls and standard operating procedures, e.g. cleaning and gowning). The calculation was performed for both manual and automated preparation processes.

Results On average, the overall working time spent by PT on direct and indirect activities amounted to 4,670 hours/year for the manual process and to 2,441 hours/year for the automated process, resulting in 14 151 and 21 534 preparations, respectively. The annual amount of preparations per 1.0 FTE in the automated process (mean: 15,066) was three times higher than in the manual process (mean: 5,036). The production times were comparable, but the working time spent by PT on indirect activities was reduced by 85% by using the robotic system. Each 7600 preparation transferred from the manual process to the robotic system results in 1.0 FTE made available for different working activities.

Conclusion Results of this study revealed that the automated process with the robotic system improves the working efficiency of PT, thereby allowing the reallocation of human resources and the optimisation of workload distribution in the daily pharmacy practice. Other indirect advantages related to cost and production quality are achieved.

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No conflict of interest.

3PC-026 WHAT IS THE BEST CHEMICAL DECONTAMINATION SOLUTION FOR CONVENTIONAL ANTI-NEOPLASTIC DRUGS IN A HOSPITAL COMPOUNDING UNIT?

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Background Several decontamination methods are currently available to reduce the occupational exposure of hospital facilities to conventional anti-neoplastic drugs. Alcohol-based microbicides are not sufficiently efficient in removing chemical contamination and data are lacking on many marketed biocides. Recent data confirm that using a specific chemical decontamination solution is helpful in removing traces of contaminants.

Purpose To perform a literature review in order to help pharmacists in choosing a chemical decontamination solution to implement in their compounding unit.

Material and methods Articles were searched on Pubmed using the following requests: 'antineoplastic agents AND cleaning' or 'antineoplastic agents AND chemical degradation' or 'antineoplastic agents AND chemical decontamination'.

Criteria used to classify the performance and usability of decontamination solutions were: decontamination efficiency, number and nature of tested contaminants, hazardousness of the decontamination solution, implementation difficulties and respect of the aseptic environment.

Results Two-hundred and seventy-four articles were retrieved following the request application. Two-hundred and fifty-seven articles were discarded for different reasons leading to the analysis of 17 articles. Fifty-nine methods were tested as degradation (n=19) or desorption methods (n=40) with various decontamination efficiencies ranging from ≤10% to 100%.

Applying the selection criteria, three decontamination solutions were chosen: sodium hypochlorite, admixture of 10^{-2} M sodium dodecyl sulfate (SDS) and 70% isopropanol (80/20), marketed two steps towelettes kit (1. Quaternary ammonium solution, 2. Isopropanol). Their inertness to facilities' surfaces is different and sodium hypochlorite solutions oxide metals. Solutions involving tension-active agents such as SDS may form a film on the facilities surface, which may alter the sterility environment.

Conclusion The applied selection criteria led to select only three decontamination solutions. Their application modalities are also to be discussed regarding the biological and chemical facilities' monitoring. As the solutions were assessed with