Materials and Methods A quasi-experimental/retrospective study was carried out, analysing discrepancies between chronic medicines and drugs prescribed in the hospital, before and after a medicines reconciliation programme was implemented.

Patients admitted into a general surgery unit for more than 24 h who were taking ≥3 drugs chronically at home were included.

A standardised interview was conducted to record chronic medicines. Pharmacists detected and investigated discrepancies. The severity of unintended discrepancies was assessed by consensus with medical staff using the National Coordinating Council for Medication Error Reporting and Prevention 2001 classification. A computerised reconciliation tool, integrated into the electronic prescription, was implemented during the intervention phase.

Results A total of 191 patients were included (52.9% male, 47.1% female), 107 patients in the phase before intervention and 84 in the phase after intervention.

1,951 drugs were investigated, and 1,678 discrepancies were detected. There were 167 unintended discrepancies, 102 (10.6% of drugs investigated) in the first phase and 65 in the second phase (6.6%), $p = 0.0021$. Omission of drugs was the most common unintended discrepancy, being 89 (9.2%) in the phase before and 55 (5.6%) in the phase after intervention, $p = 0.0027$.

Unintended discrepancies were grade C severity in 79.2% of those detected, decreasing in the second phase (3.95% of total drugs investigated) compared to the first one (8.61%), $p < 0.05$.

Conclusions The implementation of the medicines reconciliation programme has shown a reduction of the rate of unintended discrepancies detected during admission into a general surgery unit. Omission of drugs was the most common type of discrepancy detected in both phases and decreased after intervention.

No conflict of interest.

GRP-088 IMPACT OF THE PHARMACEUTICAL VALIDATION OF PRESCRIPTIONS FOR INPATIENTS WITH RENAL IMPAIRMENT

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Background The use of drugs in patients with nephropathy carries certain risks. Therefore, dosages must be adjusted.

Purpose To describe pharmaceutical interventions (PIs) on electronic prescriptions for patients with renal impairment (RI = creatinine clearance <50 ml/min) admitted from emergencies.

Materials and Methods Nine-month observational study performed with patients with RI admitted from emergencies to wards with electronic prescribing. Glomerular filtration rate was calculated with MDRD-4 IDMS. Treatments were reviewed to evaluate the suitability of doses using the data sheets Medimecum, Micromedex and Lexicomp. If the dose was not correct, a PI was written in the 'Alerts' section of the prescribing programme which was subsequently seen by the physician. Demographics, date of the PI, serum creatinine, creatinine clearance, drug, PI, acceptance or rejection and why and evolution of renal function on the seventh day of the acceptance were recorded in the database.

Results 5311 patients were included, 221 PIs were made for 181 patients (3.41%). Patients for whom interventions were made had a mean age of 78 (29–102) and 49.2% were male. The drug with most interventions was levofloxacin (29.9%). The PIs were: dose-related (65.6%), increase of therapeutic range (26.7%) and contraindication (7.2%). 65.6% were accepted. The clinical consequences after acceptance of the PI were: improved renal function (54.5%), deteriorated (12.4%), unchanged (11.0%) or not evaluable (22.1%). In patients whose PI was rejected, renal function improved in 57.63%, deteriorated in 16.95%, was unchanged in 6.78 and not evaluable in 18.64%. A Chi-square test was applied to study whether the evolution of renal function depended on acceptance (p value 0.634).

Conclusions Electronic prescribing is a useful tool for identifying opportunities for PI in patients with RI. Differences in renal function progression between the group in which the PI were accepted and the group in which these were rejected were not statistically significant.

No conflict of interest.

GRP-089 IMPLEMENTATION OF A "MEDICATION SAFETY" CURRICULUM AS PART OF THE CONTINUING EDUCATION PROGRAMME FOR PHARMACISTS

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Background The 'action plan for the improvement of medication safety' issued by the German ministry of health demands a culture of safety awareness. To achieve this goal, an emphasis on medication safety should be placed in the education of health care professionals. In this context the German Society of Hospital Pharmacists (ADKA) has developed a curriculum on medication safety.

Purpose A workshop has been developed to improve the awareness of health care professionals regarding medication errors and the risks involved. The tools allow the pharmacist to perform a self-contained failure analysis as a basis for a goal-oriented prevention strategy.

Materials and Methods The curriculum consists of three parts. After a brief introduction, the tools to develop strategies for error prevention are explained. These tools are then applied to real life examples of medication errors in the clinical routine or in the community pharmacy respectively. The curriculum has been presented to the local boards of pharmacy and the association of statutory health insurance physicians.

Results After approval by the board of pharmacy of Lower Saxony, a pilot course was conducted. Within four days of the first invitation being sent, almost 30 participants had enrolled. Finally more than 50 participants, the majority of whom were community pharmacists successfully completed the curriculum, which was evaluated by the local board of pharmacists.

Conclusions The rapid and strong response to the invitation is a sign that the subjects 'medication safety and medication errors' are of particular interest to community pharmacists. It also tells us that medication safety is not a substantial part of continuing education. An evaluation has shown that the time allotted for the curriculum (90 min.) is apparently too short and should be extended to at least 150 min. The participants appreciated the opportunity to develop their own strategies to prevent medication errors. The experience accumulated so far demonstrates that the basic concept of the curriculum, now available to all interested boards of pharmacists, is a promising strategy.

No conflict of interest.

GRP-090 IMPLEMENTATION OF GRAVIMETRIC ANALYSIS IN THE PHARMACY DEPARTMENT

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Background Parenteral nutrition (PN) involves multicomponent intravenous mixtures of high complexity and is considered a high-risk medicine. Monitoring systems are needed to reduce the morbidity and mortality of patients receiving PN.

Purpose To report the introduction of a gravimetric process of weighing to encourage its future implementation and increase the quality and safety in the preparation of parenteral nutrition (PN).
Materials and Methods In order to standardise the gravimetric control of PN, a protocol was developed by the nutrition unit. The quality of the PN preparation was established by calculating the accuracy (the mean of the error in the gravimetric analyses (EGA)) and precision (square root of the mean square of the EGA) and the alert limits were set at ±5%.

The first step was to determinate the densities of the components of the PN and update the parenteral nutrition programme. The PN labels were modified to show the theoretical weight of the PN and the maximum and minimum limits allowed.
Results One strategy established for the quality control of the final product was to compare the final weight of the product with the volume and the density calculated for each component.

In the first 67 days 150 parenteral nutrition mixtures were made in the neonatology department. The average theoretical weight was 323.68 g (±236.04) and the average measured weight was 323.45 g (±239.94).

The mean difference of the actual weight versus the theoretical was 2.8% (±0.04).
Conclusions Gravimetric analysis is a strategy to cheque the accuracy and precision in PN and complements the quality assurance processes normally used to regulate the preparation.

No conflict of interest.

GRP-091 IMPLEMENTATION OF KEY PERFORMANCE INDICATORS IN CYTOTOXIC COMPOUNDING UNITS

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Background The Capital Region Hospital pharmacy prepares more than 90,000 bags of cytotoxic treatments a year. There has been no tradition in the pharmacy of systematically monitoring essential parameters in the productions units. Because of an increasing need for treatments on the wards, the delivery time for cytotoxics went up to 5 hours, resulting in complaints from patients. The number of products that were rejected was very high. In 2010, the cost of rejected products was more than €200,000. Analysing and addressing root causes when nonconformities arose could take up to one year.
Purpose To reduce production time and make it more stable while improving quality and reducing costs.
Materials and Methods Three Key Performance Indicators (KPIs) were introduced: Delivery, Rejects and GMP non-conformities, in order to ensure a stable, short production time and a constant focus on cost and product quality. The three KPIs are continuously monitored and posted on boards in the production area. The KPIs are discussed with the staff in weekly meetings.
Results Overall delivery time has been reduced. 75% of patients are now waiting less than 1½ hours and 90% of the pre-ordered treatments are delivered on time.

1. The number and types of rejects are now known. The goal is to reduce the value of rejects by 15% in 2012.
2. Processing time for non-conformities is now a maximum of 21 days.

Conclusions By defining the relevant KPIs, and having an ongoing dialogue with employees about the KPIs, it has been possible to significantly increase awareness among the employees of the overall performance of the production process. The increased awareness has resulted in a significantly improved performance that provides value for our patients.

No conflict of interest.

GRP-092 IMPLEMENTATION OF RECOMMENDATIONS ARISING FROM THERAPEUTIC MONITORING OF VANCOMYCIN TROUGH LEVELS IN A TERTIARY HOSPITAL

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Background In 2009 we established a consensus review of therapeutic monitoring of vancomycin by several societies including the American Society of Health-System Pharmacists (ASHP), the Infectious Diseases Society of America (IDSA) and the Society of Infectious Diseases Pharmacists (SIDP).
Purpose To study the use of plasma concentrations (PCs) as a tool for monitoring the effectiveness and safety of vancomycin treatment; follow-up of the changes made in response to the recommendations made.
Materials and Methods Retrospective descriptive study in a tertiary hospital during the first four months of 2012. Vancomycin trough plasma concentrations (PCs) were collected. The laboratory service requested and identified patients treated with vancomycin in the unit dose dispensing system. An automatic system recorded the doses, days of treatment indicated, glomerular filtration rate (GF) prior to and during treatment with vancomycin (calculated by the MDRD formula, considering renal function impairment (RFI) lower GFR 80 ml/min) and concomitant treatment. The recommendations contained in the consensus document on vancomycin therapeutic monitoring of the Infectious Diseases Society of America (IDSA) and the American Society of Health-System Pharmacists (ASHP) were used as the standard criteria for vancomycin PC monitoring: RFI, treatment for more than five days or concomitant nephrotoxic drug administered.
Results 30 patients were enrolled, median age 66, 21 men, median treatment duration of 7 (1–46) days. The PC was checked in 10% (3) of the patients, two had PCs within the recommended values. In the third patient a single plasma level was requested, which revealed less than the recommended values but the same dose and schedule was maintained throughout the 29 days of treatment. In none was the area under the curve divided by the minimum inhibitory concentration (AUC/MIC) reported, the pharmacokinetic parameter best related to the effectiveness of vancomycin. Plasma levels were not requested in 27 patients, 90% of the total treated with vancomycin. 63% met one or more criteria for monitoring; treatment for longer than five days was the most common criterion (20). In one patient the recommendations made were acted on.
Conclusions The established recommendations on therapeutic monitoring of vancomycin are not being applied in our hospital.

A high number of patients treated with vancomycin did not use the PC as a parameter with which to monitor the efficacy and safety of antibiotic treatment.

One possible cause could be a lack of training of medical staff on the usefulness and benefits of vancomycin monitoring, particularly during prolonged treatment and in patients with RFI.

No conflict of interest.

GRP-093 IMPLEMENTING AND IMPROVING MEDICINES RECONCILIATION ON ADMISSION AT NORTH BRISTOL NHS TRUST (NBT)

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Background Medicines Reconciliation ensures that medicines prescribed on patient admission correspond to those taken before