Materials and Methods We compared the real observed costs incurred by preparing the intravenous mixtures in the pharmacy service and the expected cost if the mixtures were prepared on the wards by using complete vials for each patient and dose, discarding the remainder of the dose.

We have focused the study on the intravenous mixtures area selecting those drugs which need to be prepared individually for the correct dose and those used in the paediatric and neonatology area due to the low dose needed and its variability; however we excluded drugs used in oncology and nutrition from this study.

Results During 2011, 4053 intravenous mixtures were prepared.

The centralised preparation of liposomal amphotericin B (1017 treatments) made an estimated hypothetical saving of €15,226; infliximab preparation (894) hypothetically saved €122,856.

Romiplostim (234) generated savings of €59,551 and tocilizumab (174) €11,280.

In the neonatology area the standard preparation of 200 IU epoetin beta from NeoRecormon 500 IU hypothetically saved €603 with 1623 treatments.

Agalsidase alfa, a high financial impact drug used in Fabry's disease, hypothetically made savings of €62,253 with 111 preparations.

Total savings generated by centralising the preparation of intravenous mixtures with these 6 drugs amounted to €271,770.

The median saving exceeded €67/treatment and €744/day. We achieved this situation by sharing vials and using the dose remaining from one treatment to prepare the next one.

Conclusions Centralization of intravenous mixtures allows us to increase efficiency and generate important financial savings, but in addition to increase the quality of healthcare, because it also involves us in pharmacotherapeutic monitoring and avoiding medicines errors. This practise also ensures drugs are handled correctly, which helps maintain their physicochemical and microbiological stability.

No conflict of interest.

OHP-041 FORMULARY DECISION-MAKING FOR BIOSIMILARS: CONSIDERATIONS FOR HOSPITAL PHARMACISTS

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Background It has been 6 years since the first biosimilar was approved for use in the European Union (EU). Given the likelihood that biosimilar monoclonal antibodies will be approved in Europe in the near future, it is timely to review the formulary selection criteria for biologicals and biosimilars.

The European Medicines Agency (EMA) has issued guidelines that define the regulation of biosimilars in Europe and recommend approaches to establish biosimilarity. However, several questions regarding the assessment of biosimilars for formulary inclusion remain unanswered, including those related to manufacturing and drug supply.

Purpose To aid hospital pharmacists in developing evaluation criteria for biosimilars under consideration for formulary inclusion.

Materials and Methods EU and United States biosimilar legislation, peer-reviewed literature, public data, EMA guidelines and formulary decision-making practises were reviewed to identify key considerations and evaluation criteria for including biosimilars in a formulary.

Results Biosimilars may differ in certain characteristics from their reference product and, therefore, require more extensive evaluation during formulary consideration than small-molecule generics. Recent drug shortages and stockouts throughout Europe underscore the need to evaluate manufacturer reliability and supply chain considerations in formulary reviews of biosimilars. Indications approved for the reference product may not be approved for the biosimilar and should be considered during formulary review. Therefore, we propose a checklist that includes criteria for product evaluation and manufacturer-related parameters, such as differences in administration devices, drug availability, inventory turns, history of shortages, recalls, inventory levels, manufacturing redundancy and supply chain security.

Conclusions Ensuring a stable, reliable supply of quality products is a critical component of healthcare. Product, manufacturer, and pharmacoeconomic information should be considered in formulary decision-making for biosimilars. A checklist of key product- and manufacturer-related information will be promoted thorough evaluation of biosimilars, permitting educated decisions regarding formulary inclusion.

No conflict of interest.

OHP-042 HEPARIN-INDUCED THROMBOCYTOPENIA (HIT): PRE-TEST CLINICAL SCORE (4TS) TO JUSTIFY DANAPAROID PRESCRIPTIONS? WHAT ELSE?

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Background HIT is a prothrombotic adverse drug reaction caused by heparin and requires an alternative anticoagulant: danaparoid. Because of its cost and the specific indication, the physicians must request two laboratory tests with prescriptions (LT: Platelet Aggregation Test, Anti PF4H) and a 4Ts assessment, in order to have danaparoid dispensed.

Purpose To find out whether prescriptions are justified and if we can use the 4Ts score as a basis for HIT detection.

Materials and Methods We analysed 5 years of prescriptions: 4Ts score results (the 4Ts assessment is used to arrive at a high (score 6 or more), intermediate (score 4–5) or low (score 3 or less) probability of HIT.

Of 72 hospitalised patients followed (LT and/or prescription), 34 had a LT score without danaparoid prescription (32 negative and 2 positive results). 38 had a prescription that had been dispensed. 32 patients of these 38 had a 4Ts score. Looking at the 4 Ts' results:

- 3.12% (1/32) patients had low score (LT not requested).
- 62.5% (20/32) came into the intermediate category (LT: 8/20 negative – 4/20 positive – uncertain 3/20 – not requested 5/20).
- 34.4% (11/32) came into the high-score group (LT: 4/11 negative – 4/11 positive – 1/11 uncertain – not requested 2/11).

In 60.5% of the cases (23/38), the prescription was justified by a high score or a positive LT test or HIT diagnosed before. In 39.5% of the cases (15/38), a danaparoid prescription wasn't justified: 7 patients still received danaparoid after negative LT results and 8 without a 4Ts score.

Conclusions In our hospital, positive predictive value doesn't match like it's written in the literature. The 4Ts score doesn't seem to favourably correspond with HIT laboratory testing results. A new scoring HIT Expert Probability Score is right now in validation. Will it be more suitable for our practise?

No conflict of interest.

OHP-043 HIP AND KNEE PROSTHESES IN REPLACEMENT SURGERY: REVIEW OF USE

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Background Total knee and hip arthroplasties are one of the most common and costly surgical procedures. They are performed to relieve pain and improve the patient's quality of life.
Purpose To describe the use of prostheses in hip and knee replacement surgery in a 1200-bed hospital.
Materials and Methods Descriptive retrospective study of the prostheses used in elective total hip and knee arthroplasties during year 2011.

Surgical orthopaedic interventions records and clinical histories were reviewed. Variables studied: sex, age, number of total hip and knee replacements performed: primary and revision (prosthetic replacement) procedures and reasons for revision surgery.
Results 94 total hip arthroplasties were carried out: 80 primary surgical procedures (85.1%) performed on 40 men and 40 women, with a median age of 64 years (20–84), and 14 revision surgical procedures (14.9%) performed on 4 men and 10 women, with a median age of 75 years (46–84). 2 of these patients had undergone primary surgery in the same year.

Reasons for prosthetic replacement were: aseptic loosening: 6 patients (6.4%), dislocation: 4 (4.3%), pain: 3 (3.2%) and infection: (1.1%).

140 total knee replacement procedures were carried out: 125 primary procedures (89.29%) performed on 28 men and 99 women, with a median age of 71 years (42–87), and 15 revision procedures (10.71%) performed on 2 men and 13 women, with a median age of 72 years (65–80).

Etiologic factors of revision were: stiffness: 5 patients (3.6%), instability: 5 (3.6%), pain: 2 (1.4%), aseptic loosening of the prosthesis: 2 (1.4%) and infection: 1 (0.7%).
Conclusions In most cases, both procedures are performed in patients younger than 75 years in order to improve their quality of life.

Total knee replacement surgery is more common than hip replacement. It is mainly performed in women and revision surgical procedures are less likely.

Prosthetic infection is the most important complication after surgery, but fortunately, is the least frequent cause of revision surgery.

No conflict of interest.

OHP-044 HOW FAMILIAR ARE JOB ROLES OF HOSPITAL PHARMACISTS TO PHARMACY STUDENTS?

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Background Pharmacists in a Clinical Centre in Serbia are involved in various educational programmes for pharmacy students.
Purpose To evaluate how much information pharmacy students had about the activities of pharmacists in hospitals.
Materials and Methods A survey containing 32 questions has been conducted among the 58 students of both genders, varying interests and academic achievement in the final year of study. 75% of questions were multiple-choice and the rest were related to specific cases; opinions and suggestions were requested as well.
Results 35 of the 58 respondents thought that pharmacists didn't participate in public procurement and 22 thought that pharmacists didn't participate in the supply of medical devices. 39 thought that a pharmacist made a decision on the use of the appropriate drug from a particular pharmacotherapy group, 46 thought that the hospital pharmacist decided on the posology of the appropriate drug, while 56 thought that pharmacists were regularly consulted by the medical staff on the dissolution of certain medicines (antibiotics and cytostatics). The same number also had an opinion that pharmacists were always consulted about drug interactions. 64% of students believed that they had sufficient knowledge of chemistry, pharmaceutical technology and pharmacotherapy, but insufficient knowledge in certain medical areas – anatomy, pathology and physiology. 78% of students thought that basics of hospital pharmacy should be introduced as an optional subject during undergraduate studies or there should be appropriate specialisation in this field after graduation.
Conclusions More than half of the students were not sufficiently informed about hospital pharmacy, but they were eager to learn things that would help them in their future practise. It suggests that fellow practitioners should be actively engaged in continuing education programmes for students, and developing better cooperation with the faculty of pharmacy in order to provide both theoretical and practical knowledge in the field of hospital pharmacy.

No conflict of interest.

OHP-045 IMPACT OF A MULTIDISCIPLINARY STAFF MEETING ON ANTIBIOTIC TREATMENT QUALITY FOR OSTEOARTICULAR INFECTIONS IN AN ORTHOPAEDIC SURGERY CARE UNIT

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Background Treating osteoarticular infections is difficult.
Purpose To evaluate professional practise, we studied the effect of a multidisciplinary staff meeting on the quality of antibiotic treatment in an orthopaedic surgery care unit.
Materials and Methods Via the coding process, we retrospectively studied patients hospitalised for osteoarticular infections (diabetic foot excluded) in the orthopaedic care unit of a general hospital in France. We compared antibiotic treatment conformity to good practise (bacteriology, dose, length of treatment, time taken to implementing microbiology report), length of hospitalisation and 6 month-outcome, for patients with osteoarticular infections, before (March 2007 to March 2009) and after (March 2009 to March 2011).implementation of the multidisciplinary staff meeting.
Results 85 patients were selected and 77 files were examined. Fifty-five medical records were actively devoted to osteoarticular infection and all of them were analysed: this worked out at 30 patients (32 infections) before the staff meetings and 26 patients (28 infections) after the staff meetings had started. Staff meeting decisions were reported in medical files in 72% of cases. Before staff meetings were instituted, antibiotic treatment was changed in 47% of cases, versus 96% since establishment of the staff meeting ($p < 0.0001$). Dose was optimum in 72% of infections before staff meetings were instituted, versus 89% afterwards ($P = 0.11$) and length of antibiotic treatment conformed to recommendations in 41% of infections before staff meetings, versus 86% after staff meetings had begun ($P = 0,0005$). The average time to respond to an antibiogram decreased from 2 days before staff meetings to 1.7 days after staff meeting ($P = 0.43$), and length of hospitalisation was 19.8 days before staff meetings versus 23.1 days after ($P = 0.49$). Recovery at 6 months accounted for 62% of patients before staff meetings, versus 76% after staff meetings ($P = 0.35$) and failure at 6 months concerned 29% of infections before staff meetings versus 24% after their institution ($P = 0.75$).
Conclusions Since the beginning of multidisciplinary staff meeting in our orthopaedic surgery care unit, antibiotic treatment has significantly improved concerning spectrum and duration of