

years old; 75% taking  $\geq 3$  capsules per dose). 88.57% vs. 85.71% of patients took their pills in cycles of 5 days followed by 23 days without treatment.

Satisfaction pre- and post-intervention was related to: the number of capsules prescribed per dose ( $4.43 \pm 1.60$  vs.  $4.96 \pm 0.84$ ), the possibility of taking their treatment everywhere ( $5.17 \pm 0.92$  vs.  $5.32 \pm 0.82$ ), and the convenience of the chemotherapeutic regime ( $5.06 \pm 0.94$  vs.  $5.07 \pm 1.05$ ).

The usefulness of the pharmaceutical attention, the pillbox and the leaflet were evaluated as  $5.46 \pm 0.58$ ,  $5.39 \pm 0.69$  and  $5.68 \pm 0.48$ , respectively. Global satisfaction with pharmaceutical attention was  $5.79 \pm 0.42$ .

**Conclusions** In this study, information provided by hospital pharmacist and the use of pillboxes improved satisfaction in patients treated with temozolomide.

No conflict of interest.

### OHP-026 ECONOMIC EVALUATION OF ANTIFUNGAL DRUGS IN AN INTENSIVE CARE UNIT

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**Background** Anidulafungin is a semisynthetic echinocandin, mainly used in invasive *Candida* infections in non-neutropenic patients, with a daily dose cost lower than other antifungal drugs used in candidiasis treatment.

**Purpose** To prepare a mathematical model, able to produce an estimate of the savings that could be realised using anidulafungin instead of the other antifungals.

**Materials and Methods** A pilot study was carried out at Turin hospital 'Città della Salute e della Scienza', involving two Intensive Care Units (ICUs), which are the major consumers of echinocandins.

In these two ICUs:

- Data concerning consumption, prices and 2010 rebates for various antimycotics were collected;
- The medical records of 174 patients, admitted in 2010, were examined to identify all those instances where anidulafungin could have been appropriately used, instead of other antifungals.

Based on the analysis of medical records, the substitution index of the other antimycotics with anidulafungin has enabled us to calculate its potential use and the saving that the hospital might be able to achieve.

**Results** The analysis revealed a frequently inappropriate use of various antifungal drugs.

The review of medical reports confirmed a 70% substitution index of liposomal amphotericin B with anidulafungin.

In 2010, the hospital used 9,237 vials of caspofungin, anidulafungin and liposomal amphotericin B.

If we assume 100% use of anidulafungin in instances where it would be appropriate in the two ICUs, the hospital could make savings exceeding Euro 100,000 per year.

**Results** The ICUs in question account for 18% of the total vials. The possible savings that could be made by extending the analysis and application of the mathematical model to the entire hospital have not yet been investigated, but the model has confirmed the initial assumption of possibly saving money by using anidulafungin, according to approved indications, in substitution for other antimycotic drugs.

No conflict of interest.

### OHP-027 EDUCATIONAL MODEL FOR IT SYSTEMS

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**Background** An electronic documentation management system had been implemented, replacing and uniting three previously paper-based documentation systems. 130 users located on 6 different locations needed to be educated in the new system.

**Purpose** To evaluate the training on the new system. Would it be possible for a large number of employees at 6 different locations to use an educational model, called Less Is More (LIM) to rapidly learn a new IT system, with a high degree of satisfied users?

**Materials and Methods** The training of the personnel was carried out by educating 30 supervisors over a period of 5 days. The supervisors conducted the education of the remaining personnel, based on the principles and materials of LIM. The education model (LIM), is based on simple graphic displays with very simple drawings, that do not require e.g. PowerPoint. The graphic displays give a visual overview of the system. The graphic displays are supplemented by a short storey, telling the procedure of the system. In addition the drawings are followed up by a single page, navigation note with short instructions on how to carry out a specific procedure.

The evaluation was performed using a user survey of the course. The users were to complete a questionnaire, rating relevant statements on a scale from extremely satisfactory, very satisfactory, satisfactory, less than satisfactory and not satisfactory.

**Results** A survey conducted after the course showed that all 30 supervisors found the method extremely satisfactory, very satisfactory or satisfactory. 100 users on 6 different locations were subsequently educated in a period of 4 weeks, and reports from the system show that the system is being used as desired.

**Conclusions** We would recommend LIM as an educational model for IT systems, it was used successfully with a high degree of satisfied users.

No conflict of interest.

### OHP-028 EFFECT OF A CLOSED SYSTEM DEVICE AND NEW CLEANING PROCEDURE ON SURFACE CONTAMINATION WITH CYTOSTATICS

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**Background** The potential for contamination associated with handling cytostatic drugs exists in the workplace despite compliance with the protective measures for the safe handling of cytostatics.

**Purpose** To investigate the efficacy of using closed system drug transfer devices and implementing a new cleaning procedure for environmental cytostatics contamination in the central cytostatics department.

**Materials and Methods** Wipe samples were taken from five defined areas in March, 2011: Laminar air flow (LAF) cabinet, workbench, floor in front of the LAF cabinet, transport box and the handle of the refrigerator located in the make-ready room. They were tested for contamination with 8 substances (5-Fluorouracil (5-FU), cyclophosphamide (CP), ifosfamide (Ifos), gemcitabine (Gem), etoposide (Eto), methotrexate (MTX), pacli-taxel (Pac), docetaxel (Doc)) using LC-MS/MS. After seven months the test was repeated on the same surfaces (except the refrigerator handle) after the implementation of PhaSeal closed-system drug transfer device and 0.1 m NaOH decontamination solution.

**Results** In the first test the level of substances wiped from the refrigerator handle was under the detection limit. The LAF cabinet

was the most contaminated area, where the 5-FU, Gem, MTX and CP levels were above the German reference value (0.1 ng/cm<sup>2</sup>) and the Ifos and Doc contamination levels were also high. The levels detected on the other three surfaces, ranked in descending order were as follows: workbench, floor and transport box. 5-FU, Gem and CP were present on these surfaces in large quantities.

After seven months the levels of surface contamination showed significant improvement on every surface. MTX, CP, Ifos, Doc were not detectable in the LAF cabinet and the levels of 5-FU and Gem had reduced dramatically.

**Conclusions** The results suggest that implementing an appropriate decontamination method and preparing with closed system drug transfer devices can minimise environmental cytostatics contamination.

No conflict of interest.

### OHP-029 EFFECTS OF A PHARMACIST'S INTERVENTIONS IN A SURGICAL UNIT

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**Background** In the hospital setting, preoperative and postoperative stages can be considered as vulnerable moments when patients receive multiple drugs before, during and after surgical procedures.

A pharmacist's inclusion in the clinical routine can contribute to detecting and solving drug-related-problems (DRPs) in these patients.

**Purpose** To implement and develop a working method that enables DRPs to be detected and solved in patients admitted for scheduled surgery.

**Materials and Methods** Prospective study design over a two-month period. (June–July 2012).

The pharmacotherapy of general surgery inpatients was evaluated by a pharmacist. For each patient, current and home medicines were reviewed. If detected, DRPs were mentioned to the doctor so he/she could assess the need for correction. Any DRPs identified were classified using the Pharmaceutical Care Network Europe (PCNE) system. (Latest revision, January 2010)

**Results** Average age of patients: 63 years.

Number of prescriptions looked through: 167 (Corresponding to 103 patients)

DRPs identified: 77 DRPs (68 in hospital pharmacotherapy and 9 in home medicines): 42 –Related to Treatment effectiveness (P1), 13-Related to Adverse reactions (P2), 19 Related to treatment costs (P3), and 3 in the group of other problems (P4).

Abstract OHP-029 Table 1 Causes of the DRPs identified

Causes	Number of Interventions*	Outcome of intervention
C1-Drug selection	27 (7-Inappropriate drug, 11-No indication for drug, 2-Indication not noticed, 7-Preventive drug not given) No clinically significant drug interactions were found.	Problem totally solved (PTS)
C2-Drug form	10 (Inappropriate drug form used)	PTS
C3-Dose selection	12 (5-Drug dose too low, 7-Drug dose too high)	PTS
C4-Treatment duration	10 (4-Too short, 6-Too long)	PTS
C5-Drug use/ administration process	8 (5-Inappropriate timing of administration, 3- Drug under-administered)	PTS
C6-Logistics	7 (3-Prescribing errors, 4-Dispensing errors)	PTS
C7-Patient	3 (2-Patient forgot to use the drug, 1-Patient used an unnecessary drug)	PTS

\*64 interventions at prescriber level, 9 interventions at patient (or carer) level, 4 at drug level.

**Conclusions** The inclusion of a pharmacist in surgical units can lead to a more efficient and safe use of medicines. Moreover, suggestions were given due consideration by most of the doctors.

No conflict of interest.

### OHP-030 EFFICACY OF HEALTH LITERACY IN THE SELF-EDUCATION OF DIABETIC PATIENTS

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**Background** The increased prevalence of chronic diseases, including diabetes, requires a critical review of models of care and the introduction of new strategies of intervention. Health Literacy (HL) is a tool for educating patients in order to increase their understanding of medical information and thus educate them about their treatment. Diabetic patients are educated to manage the disease in accordance with the perceived needs for better compliance with drug treatment and its outcomes.

**Purpose** To adopt a diagnostic-therapeutic protocol shared between the diabetologist and the pharmacist, and to promote the active inclusion of people with diabetes in the course of their treatment. The secondary aim was to activate an information, monitoring and evaluation system through clinical indicators.

**Materials and Methods** Overall, 70 patients (32 women and 38 men) aged between 35 and 87 used the HL tool themselves and were monitored in this study. Ten patients were treated with insulin + oral hypoglycaemic agents (OHA), 53 with OHA alone and 7 with insulin alone. All patients received a sheet containing clear instructions for the proper management of the disease and treatment. The patient underwent monthly clinical monitoring, and were urged to adopt the right behaviours at home: frequent monitoring of blood glucose, a healthy and balanced diet, moderate activity and preventive screening for diabetes complications.

**Results** Values of blood glucose test, HbA1c, body weight and waist circumference were reduced by 42.2%, 15.2%, 6% and 3.3%, respectively. Compliance was improved in 30% of patients (screening tests carried out on time). Overall patient satisfaction was high.

**Conclusions** Our experience confirms that the multidisciplinary HL tool is useful for improving the communication between doctor/pharmacist and the patient. It is important to consider that the patient learning should focus on simple terms and on the knowledge of complications, in order to obtain good management of diabetes.

No conflict of interest.

### OHP-031 EFFICIENCY AND PROCESS QUALITY INDICATORS ON THE PREPARATION OF ANTIFUNGAL INTRAVENOUS MIXTURES IN A PHARMACY DEPARTMENT

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**Background** Our pharmacy department (PhDp) prepares IV mixtures (IVMs) centrally, for example antifungal drugs. 2 quality indicators (QIs) assess the prescription, distribution and administration process: %IVMs returned from clinical units (standard <20%) and %IVMs recycled (standard >80%), considering that all returned IVMs are validated by a pharmacist to ensure their validity in terms of stability and storage conditions. Also, 2 efficiency indicators assess cost savings: savings from centralised PhDp preparation compared with preparation in clinical units, and savings from recycling antifungal IVMs. Global median %IVM returned is 11%.