packets). The most widely kept medicines are medicines for the central nervous system (21%), the disorders in the digestive system and metabolism (16.7%) and medicines for the diseases of the respiratory system (14.5%). Nearly three-fourths of opened packets were not entirely consumed, a large number of medicines in home pharmacies (79%) was obtained self initiated and many of them were beyond their expiry date (9.5%), a total of 25% of the financial means for those medicines was provided from health insurance funds. The total cost of medicines in home pharmacies per a family in Serbia was €25,13. A total of 72% of that amount was paid by the patients themselves. Pharmacoeconomic indicators in certain groups of medicines show that the largest percentage of the financial means for home pharmacies in Serbia is spent on the medicines for gastrointestinal problems and metabolism disorders (17%).

CONCLUSIONS: Based on the analyzed data, self-medication, that is, unreasonable use of medicines, is a big problem in Serbia. The use of these medicines involves the risk of inadequate treatment of the illness, frequent occurrence of side-effects which sometimes requires additional treatment, which only increases the expenses for both the patients and health funds. Therefore, it is necessary to closely monitor the issuing of prescriptions as well as educate the population.

**PHP74**

**PRIMARY HEALTH CARE AND POTENTIALLY AVOIDABLE ADMISSIONS: A 10-YEAR ASSESSMENT FROM THE PERSPECTIVE OF A HEALTH CARE PLAN**

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OBJECTIVE: To evaluate the evolution of the rate of admissions for ambulatory care sensitive conditions in beneficiaries of a health care plan, monitoring of access to the health system and its performance and identifying strategies that will enable the improvement of the health situation of the population and the appropriate allocation of resources.

METHODS: Retrospective analysis of 212,360 hospital admissions occurring between 1999 and 2008, among beneficiaries of a health care plan, resident in Brazil. The outcome of the study was the proportion of admissions for primary care sensitive conditions, identified by ICD-10. The proportion of these admissions in relation to the total hospital admissions was established, as well as the quotient for the number of hospital admissions and the population, either total or by age group and specific causes, besides hospital direct costs. The significance was tested and estimates of the rates were defined based on their 95% confidence intervals. RESULTS: Admissions for primary care sensitive conditions accounted for 55,307 of 212,360 admissions reimbursed by the health plan (26.0%). The rate of admission for primary care sensitive conditions fell by 28.0% during the period (from 347.6 to 250.3 per 10 thousand). The most frequent cause was gastroenteritis (30.9%), followed by arterial hypertension (13.6%), cerebrovascular diseases (9.6%), heart failure (8.1%), kidney and urinary tract infections (6.8%), diabetes mellitus (5.8%) and angina pectoris (5.5%). The mean annual expenditure on admissions was R$15,232,494 against R$51,440,680 for other conditions (22.8%). CONCLUSIONS: The reduction observed in the rate of admissions for primary care sensitive conditions suggests possible improvements in primary health care. Further actions and strategies could reduce the number of avoidable admissions and contribute to the financial balance of the health care plan.

**PHP75**

**EVALUATION OF THE IMPACT OF INPATIENT CLINICAL PHARMACY SERVICES ON THE QUALITY AND COST OF PHARMACOTHERAPY IN INTERNAL MEDICINE WARDS**

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OBJECTIVES: The purpose of this longitudinal descriptive study was to evaluate the influence of interventions by clinical pharmacists on processes, outcomes of care and economical outcomes. METHODS: The patients who were hospitalized at internal medicine wards, Songkla hospital during October 1, 2008-September 30, 2009 were recruited to this study. The core set of clinical pharmacy services were admission drug histories, drug protocol management, adverse drug reaction management, drug information, medical rounds and patient discharge counseling. The clinical pharmacists collected patients’ data, pharmacists’ interventions, direct drug cost-saving and activities on a specific designated form. The data was processed on a computerized database. Clinical pharmacist interventions were counted and classified and analyzed to determine the influence on the quality and cost of pharmacotherapy. Descriptive statistics were used in data analysis. RESULTS: At the end of the study period the following were found: a total of 3796 patients were recruited. Clinical pharmacy services on internal medicine wards contribute to maximizing the pharmacotherapeutic effect and rationalization of drug therapy in 609 patients (16.0%), increase medication safety in 338 patients (8.9%) and reducing drug expenditures in 575 patients (15.1%). Cost-saving from reconciling process was US$12,682 and cost-saving from pharmacists’ interventions were US$8,298. The frequent type of interventions was maximizing the pharmacotherapeutic effect (40.8%), rationalization of drug therapy (30.3%) and minimizing the risk for developing adverse drug effects (28.9%), respectively. The top two of drug related problems found in cardiovascular drugs (30.5%) and antibiotic drugs (24.8%), respectively. CONCLUSIONS: The results of this study indicate that importance of clinical pharmacy services on internal medicine wards contribute to rationalization of drug therapy, increase medication safety and reduced the direct expenditures on medications. Therefore, future studies should include multiple sites such as in a general surgical department and clinical pharmacy services should be continued.

**PHP76**

**ALLOCATION OF A SINGLE BUDGET FOR HEALTH CARE, PROFESSIONAL EDUCATION, AND RESEARCH**

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OBJECTIVES: Funding for health care programs competes with funding for professional education (ie, implementation of health care programs) and funding for research to reduce uncertainty around program cost-effectiveness. No study has yet shown how to allocate care, professional education and research. Previous work did not consider the fundamental idea that interventions with an acceptable incremental cost-effectiveness ratio (ICER) for an adoption decision may not be acceptable. This study compared the total combined budget for health care, professional education and research. RESULTS: As a first step, a league table approach determines which programs would be funded if the combined budget were spent just on adoption. The second step analytically determines a new (lower) threshold ICER which maximizes health by discontinuing programs above the new threshold and investing in implementing programs below the threshold. The third step considers cost-effectiveness of research relative to combined program cost-effectiveness. In order to fund this research, the threshold ICER for adoption plus implementation has to be reduced. In order to maximize health, ICERS of research studies need to equal the newly defined threshold ICER for adoption plus implementation. CONCLUSIONS: A 3-step allocation process is able to maximize health based on a single budget for health care, professional education, and research. Compared to a programmed approach the proposed approach yields a closed-form analytical solution and is able to consider that research decisions are conditional upon adoption and implementation choices.

**PHP77**

**DIRECT CONTRACTS ON PATENT-PROTECTED PHARMACEUTICALS IN GERMANY: MOTIVES OF SICK FUNDS AND PHARMACEUTICAL COMPANIES**

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OBJECTIVES: To investigate the motives of both contracting parties, sick funds and pharmaceutical companies, to enter into direct contracts on patent-protected pharmaceuticals in the outpatient sector in Germany. METHODS: A systematic literature review was performed in March 2010 to identify contracts on patent-protected pharmaceuticals in Germany, Standard literature databases such as PubMed and EMBASE, different market research databases and the ‘Lauer-Taxe’, the official German price registry for pharmaceuticals were utilised. We included only officially reported contracts. A detailed market analysis was conducted to identify the motives of the identified contracts. RESULTS: The number of direct contracts has been recently increasing, a total of 115 contracts were found. Formally, they are all rebate contracts, due to German law. However, they include risk-sharing (n = 6), cost-sharing (2), added value (5) and simple rebate contracts (103). For sick funds, major motives were cost cutting, positioning within the market, attracting the “right” members, improving the medical treatment and right coding. Pharmaceutical companies show several motives that can be clustered into proactive and reactive motives: Proactive motives were: gaining access to reimbursement beyond standard coverage, funding of managed care concepts, bridging a time gap until market entry of a successor, maintaining the attractiveness after patent expiration and shaping the market access environment. Reactive motives were: rebate contracts of competitors, limitations and exclusions from reimbursement by the federal joint committee as well as reacting to attempts by sick funds and Associations of Statutory Health Insurance Physicians to control drug expenditures. CONCLUSIONS: Direct contracting on patent-protected pharmaceuticals seems to play a increasing role in the strategic considerations of pharmaceutical companies and sick funds.

**PHP78**

**A TALE OF FOUR COUNTRIES: COMPARING REIMBURSEMENT SUBMISSION REQUIREMENTS IN IRELAND, ENGLAND, WALES AND SCOTLAND**

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OBJECTIVES: Requirements for a Health Technology Assessment (HTA) submission vary within the UK (England and Wales [National Institute for Health and Clinical Excellence (NICE)], Scotland [Scotch Medicines Consortium (SMC)], and Wales [All Wales Medicines Strategy Group (AWMSG)]) and the Republic of Ireland (National Centre for Pharmacoeconomics [NCPE]). This study is to determine the likelihood of reimbursement in these markets is linked to HTA submission requirements. METHODS: Dossier requirements issued by NCPE, NICE, SMC and AWMSG were compared, and a checklist of requirements compiled. We investigated 20 interventions most recently reviewed by the NCPE, and recorded the recommendations for these compared to those issued by NICE, SMC and AWMSG. RESULTS: Economic analysis is key for an NCPE submission, although there are no specific requirements or template for the clinical data. Requirements for NICE are the most stringent; SMC and AWMSG have similar requirements. Of 20 interventions reviewed by NCPE, 11 (55%) were reimbursed.
under the Community Drugs Scheme. Of these, 2 treatments were reimbursed after a price reduction, 2 were borderline, and 1 treatment was cost-effective under the General Medical Services scheme but not the Drugs Payment Scheme. Of the 11 products reimbursed by NICE, 3 were recommended by NICE (45%), by SMC (35%) and by JBSW (9%). None of the 11 treatments were reviewed by NICE, SMC and/or AWMSG. Furthermore, 2 of the 11 treatments have been withdrawn in Scotland, England and Wales. Limited clinical/economic data was the reason for the one non-recommendation by the SMC. A more detailed analysis will be presented. CONCLUSIONS: Although requirements for HTA submission differ between countries, demonstrating cost-effectiveness is a key factor for reimbursement in all markets investigated.

**PHP79**

REFINING INPATIENT PSYCHIATRIC FACILITY REIMBURSEMENT: LESSONS FROM OTHER MEDICARE PROSPECTIVE PAYMENT SYSTEMS

**OBJECTIVES:** The Inpatient Psychiatric Facility Prospective Payment System (IPF PPS) is the youngest of the Medicare PPSs. Inpatient Psychiatric Facilities (IPFs) were excluded from the acute care inpatient diagnosis-related groups (DRG) system as it was thought to be a poor predictor of resource use for psychiatric patients. Although the IPF PPS was to include a patient classification system to reflect the differences in resource use and costs among IPFs, it was implemented without an associated assessment tool. This project reviews Medicare IPFs in which diagnosis is not an adequate predictor of resource use; compares data collected via the related assessment instruments, and discusses applicability to the IPF PPS. METHODS: The Medicare prospective payment systems were evaluated and the relevant systems isolated. The systems defined criteria were defined and the related assessment instruments explored for identifying measures. RESULTS: Under the current IPF PPS, Medicare pays for the per diem costs associated with furnishing covered inpatient psychiatric services via a nationally established base rate adjusted by geographic, facility and patient factors. Payer characteristics are limited to seventeen Medicare severity-diagnosis related groups (MS-DRGs), age, length of stay and certain co-morbidities but, unlike home health, skilled nursing and rehabilitation facility systems, do not account for functional status or other contributors to resource consumption. CONCLUSIONS: Patients in IPFs may vary in care needs despite common MS-DRG classification, thus requiring different resources. With limited ability to adjust beyond primary diagnosis, the current IPF PPS may misalign facility payment and expenses, ultimately impacting access to care. By analyzing other Medicare IPF PPS policy makers may positively contribute to the refinement of this newest system.

**PHP80**

EFFECTS OF REFERENCE PRICING AND TENDER CONTRACTS IN GERMANY

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**OBJECTIVES:** The therapeutic reference price (RP) system in Germany is regarded as a successful mechanism to reduce pharmaceutical spending. However, later introduced price directed measures such as the so-called payer contracts (pharmaceutical tender contracts (TC) interact with the reference price mechanism. The aim of this paper is to compare and analyze the effects of both instruments on pharmaceutical price, volume and expenditure for substances at the period around loss of exclusivity. METHODS: A group of frequently prescribed drugs with patent expiry between the years of 2001 and 2008 are investigated and the sales and unit data in the statutory health insurance system of Germany are analyzed. The data is exported for one year before and two years post patent expiry. RESULTS: The data show for the group with reference price and no tender contract (RP+/TC-) and with no reference price but tender contracts (RP-/TC+) similar level for the sales but significantly higher volume data for the first group. In the first year post patent expiry there seems to be a significant drop of sales and volume 9–12 month post patent expiry—a period, when usually the reference price is set. The figures for the groups with tender contracts (TC+) show a more steadily decline post patent expiry. The group RP-/TC+ is in terms of cost containment (sales decline) the most prominent one. If no regulation takes place, sales and volume increases even post patent expiry. CONCLUSIONS: Reference pricing and tender contracts are two cost containment measures, which are equally effective if applied alone, and which have additional impact, when applied together.

**PHP81**

EFFECTS OF THE POTENTIAL GENERIC SUBSTITUTION IN PORTUGAL: DOES REGULATION MATTER?

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**OBJECTIVES:** Considering the pharmaceutical expenditure trend and the current economic and social context in Portugal, this study aims to 1) analyze the national and international policy environments in Europe and US, concerning INN prescription and generic substitution, and 2) calculate the effect of generic substitution in Portugal, in terms of savings for the NHS and patients. METHODS: We conducted an international policy review and research of generics market data. We estimated annual savings under the assumption of gradual increase in generics market share, and considering the difference between branded and generic medicines prices for each group of the Reference Price System (RPS). The database includes sales from Portuguese community pharmacies. RESULTS: The INN prescription is allowed in 20 countries of all 27 European countries and in all 50 US states. The generic substitution by pharmacists is allowed in 21 European countries (mandatory in 8) and in all US states (mandatory in 14). Despite the high increase from 2002, generics market share in Portugal is still below the European average, furthermore with a slowdown in its growth reviewed since 2005. The doctors prescribed 39.1% of drugs by brand name with no permission for substitution in 2009. The simulations generated savings of €120.4 million (50.8% for the NHS and €69.6 million for patients), less 11.1% of the medicines expenditure covered by the RPS. CONCLUSIONS: The market shares observed seem to reflect the different legislative frameworks. In Portugal, despite the growing share of generics, there is still a large potential market with significant opportunities of additional savings for the health system and patients, and may contribute to a higher pharmaceuticals accessibility as well to maximize therapeutic adherence.

**PHP82**

ASSESSMENT OF PHARMACEUTICAL EXPENDITURE TRENDS IN PORTUGAL—PRICING AND REIMBURSEMENT POLICY

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**OBJECTIVES:** The Stability and Growth Pact approved by the Portuguese Government in 2010 limits the annual growth of public expenditure in 1% for drugs reimbursed in outpatient sector. Considering the 10.4% increase in pharmaceutical expenditure from the National Health Service (NHS) in the first 4 months of 2010, this study aims to identify the main factors of expenditure growth and implications of legislative modifications in Portugal. METHODS: We have considered the policy changes concerning pricing and reimbursement and analyzed the database that includes sales from Portuguese community pharmacies and drugs prescription data. The statistical analysis of monthly data by product was performed with Statistical Analysis System (SAS), version 8.2. RESULTS: The new legislation approved in June 2009, that establishes the generics reimbursement at 100% for pensioners whose income is below the national minimum wage was responsible for more €20.4 million of NCP spending in 2010. The total reimbursement rate increased positively for this trend; for example, the reimbursement rate for some anti-asthmatics (from 37% to 69%) was responsible for €1.1 million (10.3%) of NHS expenditure increase. Nevertheless €10.7 million (21.5% of NHS expenditure growth) are explained by the top 10 branded drugs recently reimbursed (5 oral antidiabetics and 1 insulin). The reform in reimbursement system approved for July 2010 also predicts major changes in the expenditures trends. CONCLUSIONS: The legal framework has a high impact in pharmaceuticals expenditures trends, and consequently in public financial burden and patient co-payments. The different policy measures adopted should be assessed on a periodic basis in order to monitor the market dynamics and to identify the strategies that support the sustainable expenditure growth.