

CONCLUSIONS: Cardiovascular diseases are still leading cause of death in BH, so we suggest deeper analysis of all guidelines, programs and interventions focused to decreasing CV mortality and making Government(s) expenditure in CV drugs more efficient.

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INTRODUCTION OF A PRESCRIPTION CHARGE ON THE COMMUNITY DRUG SCHEME IN IRELAND – WHAT IMPACT HAS IT HAD ON DRUG UTILISATION?

Usher C¹, Bennett K², Barry M¹

¹National Centre for Pharmacoeconomics, Dublin, Ireland, ²Trinity Centre for Health Sciences, Dublin, Ireland

OBJECTIVES: In October 2010, the Irish healthcare payer (i.e. the Health Service Executive, HSE) introduced a €0.50c charge on all prescription items dispensed under the General Medical Services (GMS) scheme, the largest of the community drug schemes in Ireland covering approximately 40% of the population. We investigated whether this charge was associated with changes in drug utilisation. **METHODS:** Monthly prescription dispensing was analysed from September 2009 to September 2010 (pre-intervention period) and then from November 2010 to March 2011 (post intervention period). In addition to utilization (prescription items) and cost information the database classifies drugs according to whether they are generic, off-patent or patent. The volume of drugs dispensed in each class was calculated and trends in utilisation and expenditure from the pre intervention period were compared with those in the post intervention period using segmented regression analysis. All analyses were performed using SAS (v9.1, SAS Institute Inc. Cary, US). Statistical significance at $p < 0.05$ is assumed throughout. **RESULTS:** No effect was noted following the introduction of the prescription charge on prescription items in the post intervention period. A decrease in ingredient cost was noted however, for generics in the month post the intervention ($p < 0.01$). A change in the overall trend for ingredient cost of off-patents was noted also in the post intervention period ($p < 0.05$). The intervention had no significant effect on utilization and expenditure of patented medicines. **CONCLUSIONS:** The study findings suggest that the recent introduction of a prescription charge has had no significant effect on utilization of prescription medicines, while decreased expenditures could be attributed to changes in the pricing mechanisms for generics and off-patents occurring around this time. Further analysis is warranted to determine if the effect on utilization is sustained over time.

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INAPPROPRIATE PRESCRIPTIONS BASED ON BEERS CRITERIA IN ELDERLY PATIENTS TREATED AT HOME

Imai H¹, Nakao H², Sata F²

¹National Institute of Public Health, Wako-shi, Saitama-ken, Japan, ²National Institute of Public Health, Wako-shi, Japan

OBJECTIVES: Various studies have been performed on potentially inappropriate medications (PIM) in the elderly. In developed countries, Beers criteria or Zhan criteria are widely utilized. We developed a Japanese version of Beers criteria and are using it in clinical practice. Almost no epidemiological surveys have been performed on PIM in Japan. However, it is clear that dangerous prescriptions including unnecessary and multidrug prescriptions are often written. The objective of this study is to clarify the prevalence of PIM in elderly people 65 or older treated at home. **METHODS:** The subjects were elderly people 65 or older under home care in the Tokyo area who were prescribed drugs in routine practice. The survey was conducted in 300 randomly sampled pharmacies. The survey forms were distributed to the pharmacists by mail. After the pharmacists entered the drug prescription information, they returned the forms by post. **RESULTS:** Replies were obtained from 130 pharmacies (recovery rate: 43.3%). The 84 patients included 30 men and 54 women with a mean age of 82. Medical conditions included hypertension (56%), cognitive impairment (21.4%), ischemic heart disease (16.7%) and diabetes (11.9%). Drugs prescribed based on the Japanese version of Beers criteria accounted for 52.4% and included famotidine (30%), digoxin (5%) and ticlopidine (3.3%). Drug types included peptic ulcer drugs (48.3%), vasodilators (8.3%) and anti-Parkinsonism agents (6.7%). **CONCLUSIONS:** In the first epidemiological survey on PIM in the elderly undergoing home care in Japan, PIM were evident in 52.4%, a high percentage compared data on PIM to date. Peptic ulcer drugs were the most common and prescriptions of ticlopidine were also high when compared with other countries. This survey had several limitations such as being limited to Tokyo and relatively few subjects. In the future, we hope to perform a survey with greater precision in more subjects in the future.

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PREDICTABILITY OF PHARMACEUTICAL SPENDING USING CLINICAL RISK GROUPS IN THE VALENCIAN COMMUNITY IN VALENCIA

Uso Talamantes R¹, Caballer Tarazona M¹, Buigues Pastor L¹, Trillo Mata JL¹, Guadalajara Olmeda N², Vivas Consuelo D²

¹Conselleria de Sanidad, Valencia, Spain, ²Universidad Politecnica de Valencia UPV, Valencia, Spain, Spain

BACKGROUND: The Valencian Community, with 5,000,000 inhabitants, is implementing a system of pharmaceutical management to reduce costs. This system is based on classifying patients in groups using the case mix system, Clinical Risk Groups. An electronic tool has been developed based on www to manage patients with chronic conditions and monitor pharmaceutical expenditure in primary health care. GPs receive a report on the real pharmaceutical cost that is being incurred and the optimum cost adjusted by CRG. **OBJECTIVES:** To evaluate the predictive ability of the Clinical Risk Group System in predicting pharmaceutical expenditure in the Valencian Community. **METHODS:** We ran a generalized linear

model to examine the predictive validity of the CRG system and report the correlation between the predicted and observed expenditures. We reported mean predictive ratios across medical condition and cost-defined groups. **RESULTS:** The CRG system predicted pharmaceutical expenditure with precision, excepting for groups 8 and 9 of ACRG3. A new weight adjusted model has been developed to better fit pharmaceutical expenditure in primary health care to the real situation in Valencia. **CONCLUSIONS:** In order to use the CRG system to estimate pharmaceutical expenditure in primary health care, the groups of greater clinical risk must be weight adjusted, as the pharmaceutical consumption of these groups is hospital-based.

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MARKET UPTAKE OF ORPHAN DRUGS – A EUROPEAN ANALYSIS

Picavet E¹, Cassiman D², Simoens S³

¹Katholieke Universiteit Leuven, Leuven, Vlaams-Brabant, Belgium, ²University Hospital Leuven, Leuven, Vlaams-Brabant, Belgium, ³K.U. Leuven, Leuven, Belgium

OBJECTIVES: The principle of equitable treatment establishes that everyone has the right of access to preventive health care and the right to benefit from medical treatment. Variations in market uptake of orphan drugs have important implications with respect to access to care and inequality of treatment. Therefore, the aim of this descriptive study is to examine the uptake of orphan drugs in Europe. **METHODS:** We analyzed both the sales and volume uptake from 17 orphan drugs in 24 European countries from 2001 until the beginning of 2010 using the IMS Health database. Countries were clustered based on differences in demographics, gross domestic product (GDP) and patent protection law. **RESULTS:** This study shows that there is a difference in the uptake of orphan drugs across European countries. Not only does the number of orphan drugs launched differ, the sales on orphan drugs and the share of orphan drugs sales on total market sales also vary strongly. Additionally, the volume uptake and the share spent on orphan drugs during the first year after the launch are highest in countries with high GDP and strong patent laws. **CONCLUSIONS:** The uptake of orphan drugs could be promoted through a variety of mechanisms such as the harmonization of European patent laws, the implementation of conditional reimbursement mechanisms, and the introduction of non-binding EU scientific assessment reports on the clinical added value of orphan drugs.

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EVALUATION OF GENERAL PUBLIC'S EXPENDITURE ON HEALTH PRODUCTS

Alhaddad MS¹, Hassali MA², Maghrabi I³

¹Taif University, Taif, Saudi Arabia, ²Universiti Sains Malaysia, Penang, Malaysia, ³Taif University, Taif, Saudi Arabia

OBJECTIVES: Most countries including Malaysia are facing escalating healthcare expenditures. The purpose of this study was to evaluate general public's expenditure on health products. **METHODS:** A cross-sectional study using convenience sampling technique was used in this study. 800 questionnaires were distributed to the general public in the state of Penang Malaysia. All data were analysed using descriptive and appropriate inferential statistics at alpha value of 0.05. **RESULTS:** A total of 56.73% of total 704 respondents felt that branded medicines were expensive or moderate, while 56.53% of them felt that the cost of generic medicines were moderate. In terms of private market, the costs of health products sold in community pharmacies were perceived to be cheaper as compared to private clinics and private hospitals. The mean of monthly expenditure per household on modern medicines, vitamins and non-herbal health supplements, and herbal products were RM 171.80, RM 125.41 and RM 61.03, respectively (1 USD = RM3.30). Respondents' age, gender, race and income were found significantly affecting on patients' responses. **CONCLUSIONS:** This study has highlighted the need to control the medicines prices in the private market especially in private clinics and private hospitals. There is a need to promote generic products and to educate patients about the evidence based medicine since a good proportion of their income is monthly spent on herbal products.

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CROATIAN PHARMACEUTICAL EXPENDITURE BEFORE AND AFTER HEALTHCARE REFORM – COMPARISON TO EU COUNTRIES

Pogorilic S, Vitezica P, Bolanca S

CARPC (Croatian Association of Research Based Pharmaceutical Companies), Zagreb, Croatia

OBJECTIVES: To assess the impact of pharmaceutical part of the health care reform in Croatia as compared with trends observed in EU countries. **METHODS:** Detailed historical pharmaceutical expenditure was analysed using MIDAS, an IMS Health proprietary database, as well as a variety of other published secondary data sources. Croatian trends have been compared with those of a number of benchmark countries, categorised either as Peer Countries (Slovakia, Czech, Hungary) and Aspirational Countries known to have systems that have been ensuring excellent health care outcomes (France, The Netherlands, Austria). **RESULTS:** Although total health expenditure in Croatia, as percentage of GDP is at EU level (7.8%), total pharmaceutical spend per capita is very low, 128€, with more than 80% coming from public funding. Pharmaceutical expenditure is not driving the overall health cost growth; in fact, pharmaceutical spend as a % of total health expenditure has been declining since 2003. The complex set of cost containment measures, including limitation of GP's prescriptions, imposed by Croatian Health Insurance Institute is the likely cause of this trend. The most relevant finding of this study is that Croatia has been historically very low in drug use in terms of 'volume per capita' compared to benchmark countries. In 2010 Croatian patients consumed approx. 20-25% less prescription medicines per capita than the average of peer and aspirational countries. **CONCLUSIONS:** If the observed trends are allowed to continue, it will be difficult for Croatia to keep pace with its peers in providing adequate phar-