government funded social security system. Depending on that, Turkey is one of leading country to access innovative medicines with the individual patient evaluation and import process of un-licensed medicines as named patient sales. However, total cost to government for reimbursed medicines reached 1.8 billion TL which is 8.2% of total pharmaceutical budget of SGK. It is needed to take into account these results by authorities for building a sustainable healthcare system in Turkey. New implementation like importing medicines directly by SGK is needed to be evaluated with further studies.

PHP97

BUDGET IMPACT OF NEWLY APPROVED DRUGS BY THE SICILIAN DRUG FORMULARY COMMITTEE: AN INTRODUCTIVE ANALYSIS

Aiello A[1], D'Ausilio A[1], Pizzimenti V[2], Formica D[2], Sultana J[2], Lucchesi S[3], Ientile V[2], Toumi M[4], Trifirò G[3]

[1]*Creativ Ceutical, Milan, Italy,* [2]*A.O.U. Policlinico "G. Martino", Messina, Italy,* [3]*University of Messina, Messina, Italy,* [4]*Aix-Marseille University, Marseille, France*

OBJECTIVES: The Italian National Health Service (INHS) is highly decentralized and Regions are responsible for planning healthcare services and allocating financial resources. Local autonomy implies stronger financial accountability leading to different economic strategies across regions. The Sicilian Drug Formulary Committee (SDFC) must approve drugs before hospital use at regional level and drug companies must present a specific dossier for the approval. Budget impact is a critical information for decision makers, therefore the aim of this study is to perform a pharmaceutical budget impact analysis (BIA) of drugs dispensed by the Sicilian Healthcare System (SHS) after one year from their approval. **METHODS:** From 1st January 2013 to 1st April 2016, all approved 117-drugs, for which dossiers were presented to SDFC, were identified and stratified according to the Anatomical Therapeutic Chemical (ATC) classification. To perform the BIA, the following data were considered: the main indication of use for an average adult patient (i.e. average body weight of 70kg or body surface of 1.8m2), treatment duration of 12 months, the highest drugs' strength, ex-factory prices. The average annual cost per patient was then multiplied for the eligible cohort as estimated in the drug dossier presented by the manufacturers. **RESULTS:** The BIA showed that in the first year from approval, drugs were associated with a total estimated annual pharmaceutical cost of € 500.9 million in charge of the SHS. The highest total expenditures were observed in three drug classes: respiratory system (ATC R) = €215,021,396 (494,782 patients), antineoplastic and immunomodulating agents (ATC L) = €177,185,744 (7,028 patients) and alimentary tract and metabolism (ATC A) = €47,335,649 (68,360 patients). **CONCLUSIONS:** In the past three years, the SDFC approved drugs accounted for €500 million for one year treatment at steady state. Further analyses and monitoring are needed to validate the estimation.

PHP98

BIOSIMILARS AND REFERENCE BIOTECHNOLOGIC DRUGS: COMPARISON OF THE BIOSIMILARS' EFFECT ON REFERENCE DRUG'S PRICE FOR EU, USA AND TURKEY

Tuna E, Caliskan Z

Hacettepe University, Ankara, Turkey

OBJECTIVES: The use of biotechnology-derived products has increased over the last years. In this regard, biosimilars are considered as an alternative to decrease the total biologic drugs cost for countries. To investigate biosimilars cost saving effect on pharmaceutical budget, our research question was based on whether there are considerable price differences between between biosimilar and reference biotechnological product. Considering the probable price differences between biosimilar and reference drug, substitution of biosimilars with reference drugs are expected to result in relatively lower price differences compared to price differences between generic and original conventional drugs. In this regard, in this study, it was aimed to analyze the price differences between biosimilar and reference biotechnology drugs in Europe, USA and Turkey. **METHODS:** A systematic literature review was performed by using keywords of ¨Biosimilars Pricing Europe¨, ¨Biosimilars Pricing USA¨ and ¨Biosimilars Pricing Turkey¨ in Pubmed. For Turkey, there was lack of literature with these keywords. Therefore an analysis was made using the local prices of biosimilar drugs whose reference products are also being reimbursed in Turkey. **RESULTS:** In light of the systematic literature review, the price differences between biosimilar and reference drugs were changed between 0.51% and -38% in Europe. Price differences were found to be between +0.53% and -39.60% in Turkey. As the first biosimilar drug in USA was registered in April 2015, there was lack of literature based on real data with the keywords used in this study. But the price differences assumptions for USA were close to the numbers observed in studies based on EU markets. **CONCLUSIONS:** Although the price difference between biosimilar and reference biotechnological product is relatively lower compared to the conventional drugs, which can be up to 80%, price differences in EU countries, with only by the competition of biosimilar and biotechnology drugs, cost savings could be more than 10 billion $.

PHP99

IMPACT OF HEALTH POLICIES ON CATASTROPHIC HEALTH EXPENDITURES IN TURKEY

Kockaya G[1], Tuncay B[2], Aygun A[3], Yildirim J[4]

[1]*Beykent University, Istanbul, Turkey,* [2]*Koc University, Istanbul, Turkey,* [3]*29 Mayıs University, Istanbul, Turkey,* [4]*TED University, Ankara, Turkey*

OBJECTIVES: Turkish Health Transformation Program has been launched in 2003, to improve the availability, quality, and the use of primary health care services. The program aimed to rebuild Turkish health system and establish a national based health insurance coverage. According to TURKSTAT figures, the proportion of households with catastrophic health expenditure decreased from 0.81 in 2002 to 0.14 in 2012. However, the ratio increased to 0.31 in 2014. The aim of the study is to investigate the determinants of catastrophic health expenditure and investigate the impact of health policies and factors on catastrophic health expenditure in Turkey. **METHODS:** Catastrophic health expenditure is calculated from a national representative data derived from TURKSTAT, Household Budget Survey, belonging to the time period 2010 - 2015. Proportion of households facing catastrophic health expenditure are calculated by using the methodology proposed by Ke Xu (Xu 2005). **RESULTS:** The average spending values of household with positive health expenditure have been decreased on pharmacy-related products(-36%), medical services (doctors) (-71%), hospital services(-84%), dentistry, and laboratory services. However, there was an increase in the average spending value on other medical products(+76%), medical aids(+79%) and other services. The average spending values of household with catastrophic health expenditure have been decreased on pharmacy-related products(-64%), medical services (doctors)(-57%), dentistry, and laboratory services. However, there was an increase in the average spending value on other medical products(+79%), medical aids(+193%) and hospital services(+93%). **CONCLUSIONS:** As a result, the increase in the number of households with catastrophic health expenditure could be the result of changes in health policy may impact on medical products, tools and equipment for treatment, other medicinal products, medical aids, other services and hospital services. Further studies should be done to investigate this effect.

PHP100

COST ANALYSIS OF DELIVERY NEONATAL DRUG THERAPY SERVICES AT MINISTRY OF HEALTH IN SAUDI ARABIA

Alomi YA[1], Alhadab M[2]

[1]*Ministry of Health, RIYADH, Saudi Arabia,* [2]*Alyamama Hospital, RIYADH, Saudi Arabia*

OBJECTIVES: To explore the estimation of cost calculations for delivery drug therapy distribution (unit dose, floor stock, and discharge) for neonates by using American Model with local cost. **METHODS:** It is a 6-months cross-sectional analysis of drug distribution services for neonates in 2016. It was at 300-Bed Maternity and Pediatrics Hospital in Riyadh, Saudi Arabia. The cost calculated pediatrics drug therapy management services delivered to 82 beds. The physician prescribed the medications. The pharmacist reviews and prepared drugs and distributed through unit dose system, floor stock distribution, and discharge medications services. The medications prepared through ASHP standards and facilities. The nurse administers drugs and follows up by doctors. The fast moving oral and topical medications included in the study. The cost Model calculated based on variable expenses including personal cost, material, and supply cost. Fixed cost was including direct cost, non-salary cost, and overhead cost. All cost used of US dollar currency and local prices **RESULTS:** The estimated cost of delivery of drug therapy services for all total number adults beds per day was (1,253.9 USD). It contained three types; the unit dose system (792.43 USD), drug floor stock distribution system (368.98 USD), and discharge medication order (92.48 USD). The cost of delivery of medicines to single bed per day was (32.66 USD) with the highest estimated cost of delivery discharge medication (18.5 USD), followed by unit dose services (9.66 USD) and floor stock therapy (4.5 USD). The majority of cost came from overhead cost, and material and supply in floor stock services and discharge medication delivery; while the personal cost in unit dose services delivery. The total estimated annual expenditures of Drug distribution services were (457,673.01 USD). **CONCLUSIONS:** The estimation cost of delivery neonatal medication therapy is a part of pharmacoeconomic program at pharmacy services and future vision 2030 in Saudi Arabia.

PHP101

COST ANALYSIS OF DRUG-RELATED PROBELMS IN SAUDI ARABIA, PATIENT AND HEALTH CARE PROFESSIONAL'S PERSPECTIVE

Alomi YA, Al-Shaibani AS, Alfaisal G, Alasmi NM

Ministry of Health, RIYADH, Saudi Arabia

OBJECTIVES: To explore the cost analysis of drug-related problems in Saudi Arabia from patient and healthcare provider's perceptive **METHODS:** It is a 4-months cross-sectional survey of cost analysis drug-related problem in Saudi Arabia from patient and health care provider's perceptive. The study consisted of two-part a demographic data. The second part contained the questions about the occurrence of drug-related problems with the patient, the economic burden of cost of drug-related problems. American Society of Health-System Pharmacist (ASHP) definitions of drug-related problem used. The survey distributed through social media. The questionnaire made of an electronic format, and it analyzed through survey monkey system. **RESULTS:** The total responders were two hundred and one; the Saudi nationality was 188 (93.5%), and non-Saudi was 13 (6.5%) patient. The gender distribution was female 180 (89.6%), and male was 21 (10.4%). The majority of them in age (18-44) 88% and located in Riyadh region 84 (41.8%) and Asir region 59 (29.4%). Of those 44 (22.1 %) were health care providers. The responders showed a high percentage of drug related problem occurrences for public and health care providers was drug non-compliance (70.45%, 70.9%), and indication without medication (52.27%,49.35%). The health care providers spent (63,728.53 USD) annually as average cost of drug-related problems, while the public spent (888,433.24 USD) annually. The highest cost of drug-related problem was medication adverse reaction (1733.33 USD) and medication errors (762.67 USD) per each event. The total estimated cost of drug-related problems was (60,996,726,906.27 USD) annually in Saudi Arabia. **CONCLUSIONS:** The drug-related problems are very high-cost burden on health care system in Saudi Arabia. Targeting to improve role of pharmacist and prevent drug-related misadventures is highly recommended through Saudi Heath Care Vision 2030.

PHP102

FLUOROQUINOLONE-RELATED ADVERSE EVENTS RESULTING IN HEALTH CARE USE AND COSTS: A SYSTEMATIC REVIEW

Saarukka LS[1], Viljemaa KM[1], Backman JT[2], Blom M[1]

[1]*University of Helsinki, Faculty of Pharmacy, Helsinki, Finland,* [2]*University of Helsinki, Faculty of Medicine, Helsinki, Finland*

OBJECTIVES: The aim of this systematic review was to identify health care use and subsequent costs associated with fluoroquinolone-related adverse events (AEs). **METHODS:** A literature search covering Medline, SCOPUS, Cinahl, Web of