

14.50 and 69.07 ± 8.28 years, and average length of stay for 9.41 ± 4.45 and 9.17 ± 4.55 days, respectively. Most procedures were conducted at medical centers (45.52% and 37.57%). The most frequent diagnoses for THR are avascular necrosis (45.22%) and osteoarthritis (44.05%); while for TKR is osteoarthritis (96.42%). Only 40 THR (3.90%) and 160 TKR (6.66%) had ever been prescribed antithrombotic agents after surgeries, and mostly used aspirin alone (18 THR and 95 TKR). **CONCLUSIONS:** According to this nationwide individual patient dataset, antithrombotic agents are not commonly used after THR and TKR in Taiwan, but aspirin is the most frequently prescribed of all. These findings deviate from the recommendations of current international guidelines. To establish Taiwanese own guidance, it is necessary to further investigate the effectiveness and safety of prophylactic antithrombotic agents after THR and TKR, and explore the influences of reimbursement policy and genetic factors on these outcomes.

DU3

ASSESSMENT OF THE KNOWLEDGE AND PERCEPTIONS OF THE MALAYSIAN COMMUNITY PHARMACISTS REGARDING PHARMACOVIGILANCE: FINDINGS FROM AN INTERVENTIONAL STUDY
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OBJECTIVES: To assess the knowledge and perception of community pharmacists in Malaysia toward reporting of adverse drug reactions (ADRs). **METHODS:** A cross-sectional study employing pre and post intervention design was undertaken with a sample of 42 community pharmacists to explore their knowledge of and the perception toward the pharmacovigilance and ADRs reporting. Changes in scores before and after the completion training program in knowledge and perception were measured. Statistical analysis: The data were analyzed by using SPSS version 17.0 software package (SPSS Inc., Chicago, IL, USA). Both descriptive and inferential statistics were used when ever appropriate. Frequencies and percentages were used to describe the respondents' demographic information and professional characteristics. Wilcoxon Signed ranks test, Paired sample t test and The McNemar χ^2 test were applied to compare the differences in knowledge and perception before and after the educational program whenever appropriate. **RESULTS:** Forty-two community pharmacists (CPs) were enrolled in this study. A comparison of CPs knowledge before and immediately after implementation the education program showed significant differences, the participated community pharmacists' mean scores in knowledge of pharmacovigilance and adverse drug reactions reporting significantly increased compared to the baseline ($z = -5458$, $N = 42$ $P < 0.001$). Following the intervention, only few (3, 7.2%) respondents reported that they do not have any ideas on how to report ADR to the relevant authorities in Malaysia. Upon completion of the education program, a large proportion of the pharmacists (45%) believed that they were confident in their knowledge in detection and performing ADRs reporting ($z = -2.866$, $N = 42$, $P = 0.004$). **CONCLUSIONS:** The finding of the study indicates the need for designing educational programs for the community pharmacists, in order to improve the level of knowledge toward the pharmacovigilance and ADRs reporting process locally.

DU4

COST-EFFECTIVENESS ANALYSIS OF TRAVOPROST FOLLOWED BY FIXED COMBINATION TRAVOPROST/TIMOLOL TREATMENT SEQUENCE (T-TTFC) COMPARED TO LATANOPROST FOLLOWED BY LATANOPROST/TIMOLOL FIXED COMBINATION (L-LTFC) FOR PATIENTS WITH OPEN ANGLE GLAUCOMA OR OCULAR HYPERTENSION IN MALAYSIA AND INDIA

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OBJECTIVES: To assess the cost-effectiveness of T-TTFC compared with L-LTFC treatment sequences for patients with open angle glaucoma or ocular hypertension (OHT) using a payer perspective in Malaysia and India. **METHODS:** A Markov model simulated the disease progression of open angle glaucoma and ocular hypertension (OHT) patients in India and Malaysia. Transition probabilities were obtained from Denis (2008), and extrapolated from two phase III clinical trials (Topouzis, 2007; Netland; 2001). Probabilities to develop new visual field defect (VFD) was estimated from literature (Denis, 2004). Utilization patterns were derived from local hospitals and literature. Unit costs were obtained from list prices. The time horizon was 5 years and sensitivity analyses were performed on key parameters. **RESULTS:** At 5 years, fewer T-TTFC patients switched to third line treatment, and 65.5% of patients showed no disease progression (no new VFDs) compared to 61.4% for L-LTFC. Thus initiation of treatment in an OHT patient with T followed by TTFC if needed would avoid one incidence of VFD in every 24 incident cases (Number Needed to Treat—NNT). In Malaysia, T-TTFC results in a cost-savings of 1286 RM (US\$378) against L-LTFC. In India over a 5-year period, T-TTFC results in a cost savings of 11,184 INR (US\$243) against L-LTFC. Sensitivity analyses have demonstrated the robustness of these finding. **CONCLUSIONS:** From the payer perspective, T-TTFC yielded cost-savings and fewer treatment switches. Poor IOP control results in therapy changes and increases the probability of patients experiencing new VFDs (Denis 2004), which in turn adversely impacts patient quality of life. Our savings estimates are conservative because potential cost savings, as a consequence of fewer ophthalmologist visits, particularly for patients who use private healthcare facilities, have not been captured. With these findings policy-makers and clinicians should consider the use of T-TTFC for glaucoma patients as potential cost-saving medications.

PODIUM SESSION II: HEALTH EXPENDITURE STUDIES

HE1

A CROSS-COUNTRY COMPARISON OF HEALTH PERFORMANCE BETWEEN TAX-FUNDED AND SOCIAL HEALTH INSURANCE SYSTEM: THE CHANNEL VIA PREVENTIVE CARE

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OBJECTIVES: Tax-funded system and the social health insurance (SHI) system are two main choices for health-care system reform. This research investigates the differences of health outcome and health expenditure between these two systems. The channels of such differences are also valuable for policymaker. We further explore the channel via public health and preventive care investment that leads to these differences. We are also interested in the impact of fiscal and political decentralization on health systems. **METHODS:** We merge the data from a variety of sources including WHO, the World Bank, OECD together with database prepared by independent researchers like Polity IV and Government Performance Indicator. After controlling the variables indicating the social-economic situations, we implement the Pooled-OLS Method and Fix-Effect Method for panel data. Then check the model specification by testing the autocorrelation of the residuals. **RESULTS:** When the share of SHI in public health expenditure increases, the total health expenditure (THE) measured as its share in GDP increase dramatically. However, if there is local responsibility, this negative impact will be mitigated. What's more, the increase of SHI share also plays down the life expectancy, but with local responsibility the negative impact can get amended. It is worth the attention that the public health performance, measured by the share of expenditure in THE and a series of public health behaviors including the immunization rates and infectious disease incidences, presents a consistent pattern. That is, with the increase of the SHI share, the public health performance is weakened, but with local responsibility, the performance will be improved to some extent. **CONCLUSIONS:** Tax-funded system is more efficient in the sense of cost-benefit, and public health and preventive care investment are important channels of these different performances between the two types of health-care system.

HE2

NEW DRUGS AND THE GROWTH OF HEALTH EXPENDITURE: EVIDENCE FROM DIABETIC PATIENTS IN TAIWAN

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OBJECTIVES: The aim of this paper is to investigate whether the adoption of pharmaceutical innovation increases the overall expenditure on health care by focusing on diabetic patients. **METHODS:** By examining the National Health Insurance sampling longitudinal claims data between 2000 and 2004, we use a new class of drugs, namely, thiazolidinediones (TZD), as an example to investigate the effect on health expenditure of prescribing new drugs to patients by decomposing the impact into treatment substitution and treatment expansion effects. The difference-in-difference approach was used to estimate the effects of adopting new drugs by comparing the difference between the users of TZD drugs (the treatment group) and the nonusers of TZD drugs (the control group) as well as the difference between the pre and post periods. **RESULTS:** Our results indicate that the introduction of new drugs mainly impacts the outpatient drug expenditure and does not give rise to any offsetting effect on other outpatient and inpatient health expenditures. This suggests that the adoption of pharmaceutical innovation in treating diabetic patients is expenditure-increasing. In addition, we find evidence that the treatment substitution channel has a more significant impact on health expenditure than the treatment expansion channel. **CONCLUSIONS:** An important policy implication for our finding is that new prescription drugs do not pay for themselves, suggesting that the justification for increasing health expenditure on the treatment of diabetes is not conditional upon a lowering in the demand for other types of health-care services. By contrast, it is conditional upon the increased health benefits per se.

HE3

ANALYSIS OF AN AFFORDABLE PRICE FOR PERFORMANCE-BASED RISK SHARING SCHEME: OMALIZUMAB ADAPTATION IN KOREA

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OBJECTIVES: The innovative but expensive biologic agents are introduced in recent years, Korea government is meeting with difficulty in funding for these agents due to limited health-care budget. Pay for performance as risk sharing scheme has been adopted to overcome this situation in other countries. In this article we tried to find an affordable price based upon a budget neutral concept and adapted to risk sharing of Omalizumab. **METHODS:** Omalizumab, for treatment of moderate to severe allergic asthma, is only treated for responders at 16 weeks. We modeled the performance-based risk sharing along four assumptions: 1) no additional national health-care budget, budget of risk sharing ≤ budget of no risk sharing; 2) positive manufacturer's profit; 3) reimbursed only for responders at 16 weeks; and 4) manufacturer funding to responder in screening period. We also simulated the model by changing of input parameters. **RESULTS:** We defined and analyzed the function of risk sharing scheme based on national health-care budget and manufacturer's profit. Lower boundary of affordable price was derived from the minimum of acceptable predicted sales volume for manufacturer and upper was calculated by a point of budget neutral. Lower boundary was highly depends on unit selling price, production cost