

the first and second strategies, respectively, which were much lower than the 2013 Indonesian Gross Domestic Product (GDP) per capita of US\$ 4,790. **CONCLUSIONS:** The implementation of a birth-dose rotavirus vaccination strategy in Indonesia would be more cost-effective than a later vaccination schedule. The mortality rate and vaccine price were the most influential parameters impacting the cost-effectiveness results.

PIH13

THE PHARMACOECONOMICS REVIEW OF 7-VALENT PNEUMOCOCCAL CONJUGATE VACCINATION IN ASIAN-PACIFIC REGION

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OBJECTIVES: Since 2000, when the PCV7 (7-valent Pneumococcal Conjugate Vaccine) gradually went public, lots of cost-effectiveness evaluations on it have been done in Euro-American countries. In contrast, there is little economic review on PCV7 in Asian-Pacific region. This review comprehensively evaluated the cost and benefit of introducing PCV7 into the national immunization plan (evaluation include with and without the herd effect) of the Asia-Pacific region, to serve as a policy reference for the Asian-Pacific regions in their immunization plans. **METHODS:** All articles were identified from PubMed and Embase database between January 1st, 2002 and June 30th, 2013 in Korea, Hong Kong, Malaysia, Singapore, Australia and Japan. The following keywords were used: cost, cost-effectiveness, pneumococcal diseases and pneumococcal conjugate vaccine. Results were collected in terms of different assumptions, such as incidence ratios, vaccine uptake rate, and duration of protection and so on. Costs included both direct and indirect cost. **RESULTS:** The clinical benefits and cost effective results varied from country to country. For illnesses avoided, the results varied between 4,030 and 30,040 per year. In terms of deaths avoided, the number of events varied between 14.2 and 643 per year. Studies that considered herd effects reported much more favorable cost-effectiveness than those that did not, with the ICERs US\$5,929/LYG in Hong Kong, US\$10,261/LYG in Malaysia, US\$43,275/QALY in Singapore from social perspective. **CONCLUSIONS:** With respect to the WHO's classification that an intervention is cost-effective if ICER is between 1 And 3 times of GDP, universal PCV7 vaccination would be considered cost-effective in Hong Kong, Malaysia and Singapore.

INDIVIDUAL'S HEALTH – Patient-Reported Outcomes & Patient Preference Studies

PIH15

PARTIAL REIMBURSEMENT OF ANTIVIRAL AGENTS FOR HBV: IMPACT ON ANTIVIRAL UTILIZATION AND COMPLIANCE

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OBJECTIVES: To determine the impact of partial reimbursement on antivirals which was first implemented in July 1, 2011 on antiviral utilization and compliance for CHB patients in Beijing. **METHODS:** Two separate cohorts were enrolled. These consisted 14,163 CHB outpatients who were referred to Beijing You'an Hospital during Jan 1, 2010 to Dec 30, 2010 and 16,228 between Jul 1, 2011 and Jun 30, 2012. Follow-up ended on Jun 30, 2011 and Dec 31, 2012, respectively. Demographic characteristics, routine biochemical and virological detection results, and antiviral prescription information were collected from electronic database. Antiviral utilization, medication possession ratio (MPR) and persistence rate were compared between patients with medical insurance (PMI) and paid out-of-pocket (PPO). Questionnaire survey was given to randomly sample 307 outpatients to confirm the validity of the electronic database. **RESULTS:** A total of 13,364 outpatients from each cohort were enrolled after propensity score matching. The antiviral utilization rate for PMI increased from 57.4 to 75.9% ($P < 0.001$) after the reimbursement policy and the rate among PPO increased from 54.9 to 56.7% ($P = 0.028$). A 5% increase ($83.4\% \pm 24.3$ vs. $88.7\% \pm 19.4\%$, $P < 0.0001$) in MPR was observed among PMI after reimbursement and an increase of under 2% was observed among PPO ($83.7\% \pm 24.2$ vs. $85.2\% \pm 23.1\%$, $P = 0.0055$). About 71% of the patients had more than 80% MPR in each cohort before reimbursement. This increased to 79.3% ($P < 0.0001$) and 73.0% ($P = 0.0228$) for PMI and PPO, respectively. PMI had a higher 6-, 12-, 15-month persistence rate than PPO, especially for outpatients receiving ETV and ADV. The questionnaire with 100% respond rate showed that more than 90% outpatients only took antiviral medicine at You'an Hospital, suggesting the validity of the electronic database. **CONCLUSIONS:** The new reimbursement policy showed a positive impact on antivirals utilization as well as compliance for insured CHB patients, especially for patients receiving ETV and ADV.

PIH16

JOINT MODELING OF PRIMARY AND SECONDARY NON-ADHERENCE OUTCOMES

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OBJECTIVES: Medication non-adherence to chronic therapies may severely impact effectiveness of treatment. Non-adherence may occur at different stages in a patient's treatment journey. It may occur at the very beginning of therapy if a patient receives the initial prescription but does not redeem it at a pharmacy (primary non-adherence), or it may happen after the patient fills a prescription at a pharmacy but fails to follow the instructions or fails to refill the prescription (secondary non-adherence). **METHODS:** The purpose of this study is to demonstrate that both primary and secondary non-adherences can be jointly described by a hurdle model, which has the interpretation as a two-part model. The first part is a binary outcome model, and the second part is a truncated count model (Poisson or negative binomial). The hurdle model is an example of the finite mixture models which can be fitted by SAS's new procedure PROC FMM. **RESULTS:** Data in this retrospective cohort study of medication non-adherence was obtained from blind computerized pharmacy records of a national retail pharmacy chain.

Primary non-adherence was defined as a binary outcome representing failure to fill a new prescription within 30 days after the medication was prescribed to the patient and secondary non-adherence was defined as a number of refills obtained by a patient within a 12 month follow up period. Various measured patient, prescription, and prescribing physician characteristics were included in the model. Hurdle model results indicate that important predictors are missing from the single-component models, but exist in the joint model of primary and secondary non-adherence. **CONCLUSIONS:** The authors conclude that a hurdle modeling approach enables the taking of simple, well-understood models primary (logistic regression) and secondary non-adherence (count regression) and combine them in a way that provides a better description of the data than a single-component models provide separately.

PIH17

A QUALITATIVE ASSESSMENT OF DOCTORS PERCEPTION TOWARDS THE QUALITY OF PHARMACEUTICAL CARE SERVICES IN KHYBER PAKHTUNKHWA, PAKISTAN

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OBJECTIVES: The main objective of this study is to explore the perception of doctors regarding quality of pharmaceutical care services in Khyber Pakhtunkhwa, Pakistan. **METHODS:** A qualitative study design was adopted. A semi-structured interview guide was developed, through snowball sampling technique face to face interviews were conducted until saturation point has reached till 15th doctors. Doctors from public and private hospitals in Khyber Pakhtunkhwa, Pakistan who were interviewed from December to February 2014. The interviews were conducted at the doctor's work-place. Written consent was obtained from the participants prior to the interview. **RESULTS:** Among the respondents interviewed, nine were male and six female doctors. Thematic content analysis yielded 4 major themes: (a) Collaboration of doctors and pharmacists, (b) Lack of provision of patient counseling, (c) Separation of prescribing & counseling services, (d) Patient compliance through pharmaceutical care. **CONCLUSIONS:** The findings demonstrated that implementation of pharmaceutical care provision would benefit the doctors and patient. Doctors were willing to collaborate with pharmacist because it will facilitate the doctors as due to time limit they are unable to do proper patient counseling. They have also showed positive response towards implementation of pharmacy practice which would definitely improve the patient compliance.

PIH18

REFERENCE VALUE OF BLOOD SERUM ALKALINE PHOSPHATASE IN MONGOLIAN ADULT

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OBJECTIVES: To determine the reference value of blood serum alkaline phosphatase of adult according to related age, sex, season and region. **METHODS:** In the research, totally 3742 people were conducted. The research was implemented and supported by central laboratory of Biomedical school, HSUM, "Mobio" laboratory of Korea and "Mega" laboratory. The research of serum alkaline phosphatase was made by the kinetic method which is confirmed by IFCC and used the liquid reagent of Roche Hospitex diagnostics and Human firm. The research result was statistically analyzed with standard programming the SPSS statistic. **RESULTS:** The mean value of blood serum alkaline phosphatase activity of adult with confidence interval $P = 0.95$, the mean value was for the male 81.78 ± 0.48 , ($n = 1597$) U/L and for female 76.99 ± 0.41 ($n = 2145$) U/L. While determining the Interval for reference value of blood serum alkaline phosphatase, interval was for male $51.08 - 112.47$ U/L8 U/L and for female $39.77 - 114.21$ U/L. Blood serum alkaline phosphatase activity of adult Mongolian have dependence of sex ($p < 0.0001$) and it was high for male. Also, serum alkaline phosphatase activity is varying ($p < 0.0001$, $r = 0.102$) depending on age. There is no dependence of activity of serum ($p = 0.43$) appeared by region. **CONCLUSIONS:** Mean value of serum alkaline phosphatase activity is for people 70.50 ± 0.63 U/L and minimum limit of reference value is $40.09 - 116.72$ U/L. The activity of serum alkaline phosphatase has deference from age and sex with confidence interval ($p = 0.0001$). For male high, for female low, weak direct dependence from age ($r = 0.102$) and strong direct dependence from sex were discovered.

PIH19

ASSESSMENT OF UTILITIES IN JAPAN: DATA AVAILABILITY AND METHODOLOGY

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OBJECTIVES: Utility data are essential for cost-effectiveness analyses, especially with the introduction of HTA in Japan in 2016. Given a paucity of information regarding the availability of data and related research methodologies used in Japan, this study aims to present a comprehensive literature review regarding utility assessment in Japan. **METHODS:** Medline (English) and Ichushi (Japanese) were searched to understand where the utilities were derived. Search terms included Utility OR health state preference OR 効用値 OR QALY OR 質調整生存年 [Title/Abstract] and all articles published before November 30, 2013 were reviewed. Articles were required to detail the methods for utility development or selection, and needed to be based in Japan. They were also required to focus on the assessment of utilities or be part of a cost-effectiveness analysis. **RESULTS:** A total of 246 manuscripts were found after removing duplicates. From these, 137 were included in the full text review and 99 were selected for analysis. The number of studies increased from 1 manuscript in 2000 to a total of 16 in 2012 and 6 in 2013. 70 articles were cost-effectiveness analysis. 50 articles cited utility values from previous or overseas studies. Among original utility measurement studies EQ-5D and TTO were the most frequently used methods.