domestic one, which also denoted COBAS test to be a less costly and more effective / dominant measure. In addition, sensitivity analysis showed the result was not sensitive to main indicators, including test price, week-4 and week-12 treatment response rate, week-4 and week-12 false negative rate of domestic test, SVR rate of 24-week treatment for cEVR, and proportion of non-EVR in RNA positive in 12th week. **CONCLUSIONS:** Compared with domestic HCV RNA test, for the short term treatment course, COBAS test can identify RVR & EVR more accurately, make more appropriate decisions of course period and have more patients achieve SVR. And in long term perspective, COBAS test plus appropriate course of treatment can prolong patient's life year, improve patient's life quality as well as decrease total medical expense due to less disease progress.

## GASTROINTESTINAL DISORDERS – Health Care Use & Policy Studies

### PGI6
### DRUG UTILIZATION REVIEW OF ACID SUPPRESSANTS (DURABLE) – AN AUDIT TO ASSESS THE UTILIZATION OF PROTON PUMP INHIBITORS AND HISTAMINE H2-RECEPTOR ANTAGONISTS IN CANADIAN HOSPITALS

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**OBJECTIVES:** Inappropriate utilization of proton pump inhibitors (PPI) and $H_2$-receptor antagonists ($H_2$RA) in inpatients is prevalent, but poorly defined. We undertook a rigorous national audit to allow the standardization of grading system for appropriate use. **METHODS:** Medical and demographic data were collected for all in-patients receiving a PPI or H2RA.Regimens reviewed included intravenous bolus PPI or H2RA (IVb), intravenous high dose continuous infusion PPI or H2RA (IVci = bolus followed by ci), and oral PPI or H2RA (PO); and were categorized as Endorsed or Not Endorsed [N-E]. Multivariate modeling was performed to assess predictors of E and N-E use. **RESULTS:** Over 6 months, 1720 patients (age: 64.0±16.7 y, 43% women) receiving 2890 drug regimens were included from 21 Canadian institutions. 28% were taking a PPI and 7% an H2RA before admission. 95% of in-hospital drug regimens used a PPI and only 5% a H2RA. 32% of drug regimens were endorsed. Proportions for E and N-E uses were 28.0 [25.5,30.7] and 72.0 [69.3-74.5], 18.2 [15.1-21.7] and 81.8 [78.3-84.9], and 42.9 [40.0, 45.8] and 57.1 [52.2, 60.0] for IVb, IVci, and PO respectively. The most common indication was upper GI bleeding (70% of IVci, 79% N-E; 18% of IVb, 69% N-E; 25% of PO regimens, 77% N-E). Stress ulcer prophylaxis was the prescribing indication in 8% of IVb (94% N-E), and 6% of oral (88% N-E). Independent predictors of E were suspicion of UGIB (for IVci and PO regimens), time of drug administration (for IVci and IVb), and sex (for IVci). **CONCLUSIONS:** Existing consensus recommendations provided no guidance as to appropriateness of use in up to 40% of regimens. Endorsed use was noted in only 28% of IVb, 18% of IVci, and 43% of PO regimens. These data will help guide future guideline recommendations to optimize in-hospital prescribing of acid suppressants.

## INDIVIDUAL'S HEALTH – Clinical Outcomes Studies

### PIH1
### ADVERSE DRUG EVENTS: HOW INFORMATION TECHNOLOGY WILL MEET THE CHALLENGES OF PHARMACOVIGILANCE

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**OBJECTIVES:** Polypharmacy has been associated with functional decline and adverse outcomes in vulnerable population and with an increased risk of Adverse Drug Events (ADE), particularly in fragile patients such as the elderly with complex medical conditions.Aim of this observational study was to describe and evaluate ADE in patients with polypharmacy by a digital health service that prevents Drug-Drug Interactions (DDI) using the social security number (SSN). **METHODS:** A cohort of 369 patients was identified through a closed loop, fully automated system that records and updates all the drugs taken during therapy cycle/s by specifically designed software interfaces loaded on Information and Communication Technology programs of the network.The tool was designed to support General Physicians in clinical decisions, providing them information about prescribed drugs/over the counter (OTC)/herbs, detailing dosage, comorbidity, number of packages and pills per package, prescription/purchase date. **RESULTS:** About 30% of patients shown 1 comorbidity and 11.8% 2 or more. Cardiovascular diseases (22.7%) represented the most frequent comorbidity, followed by musculoskeletal pathology (13.6%), diabetes (8.6%), cancer (5.1%), and depression (4.8%).The Charlson Comorbidity Index was 0 in 65.2%, 1 in 25.7%, 2 in 7.0% and 3 to 4 in 2.1%. A total of 67 patients (mean age 72 years; 52.2% women) had at least 1 DDI. About 50% (N = 33) had up to 2 DDIs, 25% from 3 to 7 DDIs and 25% ≥8 (from 9–74 DDIs per person). A total of 501 DDIs were identified: the severity was low in 35.5%, moderate in 59.7% and high in 4.8%. The top 10 drugs involved in DDI were: acetylsalicylic acid (ASA), hydrochlorothiazide, ibuprofen, diclofenac, digoxin, nebivolol, pantoprazole, ramipril, furosemide and nimesulide. **CONCLUSIONS:** ICT technologies are useful to timely identify DDIs of clinical relevance and the drugs most frequently involved.

### PIH2
### MODELING TO PREDICT SEVERE MATERNAL MORBIDITY BASED ON 33993 DELIVERIES OF REGISTERED STUDY IN CHINA

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**OBJECTIVES:** To set a model to predict the Severe Maternal Morbidity (SMM) and specify the risk factors based on a registered study in Sichuan province, China. **METHODS:** Overall 33993 deliveries of 8 hospitals in Sichuan province of China were consecutively collected between January 1, 2009, and December 31, 2010 in our database. The forward and backward stepwise regression methods were adapted respectively to screen independent risk factors of SMM, and a logistic model was set to predict the SMM by STATA 12.0. The areas under receiver operator characteristic (ROC) curve and agreement rate were used to evaluate the prediction model. **RESULTS:** Three kinds of unexpected surgeries, transfusion, hysterectomy, ICU care, Multiple Organ Dysfunction Syndrome (MODS) were chosen as the outcomes of SMM by literature review and expert consensus. The rate of SMM was 2.30% in 33993 deliveries. All specified and substantially significant risk factors were divided in four aspects. Social characteristics included the hometown location of pregnant women. Pre-delivery characteristics were gestational weeks, multiparity, abnormal pregnancy history, PPH history and smoking. The coexisted diseases and complications of pregnancy were gestational hypertension, preeclampsia and eclampsia, other gestational hypertension diseases, placenta previa, placenta increta, hematological disease, cardiac disease and gynecological diseases. The delivery characteristics contained styles of onset labor, midwifery, episiotomy, macrosomia, fetal death, premature rupture of membrane, uterotonic treatment. The areas under ROC curve and agreement rate were 0.87 and 98.05% respectively. **CONCLUSIONS:** SMM can reflect the severe degree of maternal outcomes indirectly, but also illustrate potential maternal health in a country or area by providing information to influence the delivery of health services and health policy. Our model specified dozens of risk factors and had considerably higher value of ROC area and agreement rate. We will perform the prospective research to predict and prevent the SMM in future.

### PIH3
### THE EFFICACY OF OXIMES IN ACUTE ORGANOPHOSPHORUS POISONING; AN UPDATED SYSTEMATIC REVIEW AND META-ANALYSIS

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**ABSTRACT OBJECTIVES:** The present study is a meta-analysis of clinical studies conducted to evaluate the efficacy of oximes in the treatment of organophosphorus (OP) intoxicated patients. **METHODS:** PubMed, Scopus, Google Scholar, and clinicaltials.gov were searched for studies investigated the effects of oximes in the treatment of OP poisoning. Mortality, intermediate syndrome, intensive care unit (ICU) admission rate, and intubation rate were the key outcomes of interest. Data were searched in the time period of 1966 through December 2013. **RESULTS:** Ten studies (nine clinical trials and one historical cohort) that met our criteria were included in the analysis. Pooling of data showed that relative risk (RR) of need for intubation in OP poisoning for eight included trials comparing oximes to placebo was 1.27 with 95% CI= 0.73 to 2.23 (P= 0.4). RR of only one observational study was 1.57 (95% CI= 0.79 to 3.2, P>0.05). The summary of RR for mortality rate in 9 studies was 0.38 (95% CI= 0.65 to 2.97, P= 0.41) and for one observational study was 1.33 (95% CI= 0.54 to 3.29, P>0.05). The RR for ICU admission rate in OP poisoning for three trials comparing oximes to placebo was2.12 with 95% CI= 0.89 to 5.03 (P= 0.09). For only one observational study, RR was 0.81 (95% CI= 0.49 to 1.25, P>0.05). For intermediate syndrome, while the RR of only trial comparing oximes with placebo was 1.89 (95% CI= 1.27 to 2.91, P<0.05) while for only one observational study, it was 1.43 (95% CI= 0.7 to 2.96, P>0.05). **CONCLUSIONS:** According to these data, oximes beneficence in OP poisoning is unclear and if administered, great caution must be exercised because of increase in ICU admission rate and incidence of intermediate syndrome. **KEYWORDS:** Organophosphorus, oxime, poisoning, meta-analysis.

### PIH4
### EFFECT OF VITAMIN E ON THE VAGINAL ATROPHY OF POSTMENOPAUSAL WOMEN

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**OBJECTIVES:** Vaginal atrophy is a silent epidemic that affects up to 50%-60% of postmenopausal women. Local,low-dose estrogen preparations are considered first-line pharmacologic treatment. For women concerned about hormone use a number of over-the-counter (OTC) vaginal moisturizer and lubricant products are considered first-line nonhormonal treatments. It has been reported that vitamin E vaginal gel improved the symptoms of volvovaginal atrophy However, oral vitamin E has never been well tested in a randomized clinical trial for efficacy against vaginal atrophy. Therefore the objective of this study is to assess the effect of vitamin E on the vaginal maturation index (VMI) of post menopausal women. **METHODS:** Participants in this placebo-controlled randomized cross over trial were 60 menopausal women who 4-12 months passed from their menopause. After randomization the women were given medication blister pack cards that contained an 8-week supply of study medication (400IU of vitamin E or placebo daily). Following 1-week no treatment , baseline period, the first group received one vitamin E soft gel daily (400IU dl-Alpha-tocopheryl acetate) while the second group received placebo for four weeks. In order to eliminate the carry over effect of cross over trial, one week washout was considered. Then the medication was reversed for each group and the study was continuing for another four weeks. Vaginal maturation index of the women before any intervention and after the first and second stage of treatment was evaluated. **RESULTS:** The study groups were homogeneous regarding age, BMI, time since menopause, educational and job status. No statistically significant differences were observed in the percentage of superficial, intermediate and parabasal cells within the groups at baseline and after the first and second stage of treatment. **CONCLUSIONS:** Based on our trial treatment with vitamin E for 4 weeks has no effect on the maturation of the vaginal epithelium in postmenopausal women.

### PIH5
### EFFICACY OF ATROPINE ALONE AND WITH GLYCOPYRROLATE COMBINATION IN ORGANOPHOSPHATE POISONING

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**OBJECTIVES:** To assess and compare the efficacy of atropine and atropine with glycopyrrolate combination in organophosphate poisoning. **METHODS:** A retrospective study was conducted in a tertiary care teaching hospital of South India. Data was collected retrospectively from medical record section from 2012 to 2013 in a suitable designed case record form. Data was analysed by using SPSS 20.0 with chi-square and one way anova. **RESULTS:** Total of 199 cases of organophosphate poisoning was documented out of which 135(67.8%) were males and 64(32.2%) were females. The average age in this group of patients was found to be 34.22 + 14.26. The average pre-hospitalization period was 1.58 + 2.07 days. Among them majority of the cases were suicidal (94.5%). A total of 159 patients received only atropine as treatment with an average hospital stay of 12.66 (SD= 11.88) days and a mean of 8.71(SD= 10.03) days duration in ICU. Whereas the other 40 patients received both atropine and glycopyrrolate as treatment with an average stay of 15.68 (SD=12.76) days and a mean of 12.12 (SD=10.40) days duration in ICU. Amongst the 159 patients who received only atropine 40.9% received ventilation and for the other 40 who received atropine and gylcopyrrolate only 60% received ventilation. Out of the 159 patients who received only atropine 7.6% underwent tracheostomy and 25.8% were found to have intermediate syndrome, whereas for patients who received both atropine and glycopyrrolate 15.4% underwent tracheostomy and 35% were found to have intermediate syndrome. **CONCLUSIONS:** Efficacy of two regimens reveals that atropine was found to be more effective when given alone when compared with atropine and glycopyrrolate combination in OP poisoning.

**PIH7**

**THE EFFECTIVENESS OF FIRST TRIMESTER COMBINED SCREENING ON REDUCING THE RATE OF INVASIVE GENETIC PROCEDURES IN A CITY BASED POPULATION OF HUNGARY 2010-2013**

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**OBJECTIVES:** To assess the effectiveness of combined biochemical and ultrasound screening for chromosomal abnormalities in the first trimester of pregnancy on reducing the rate of invasive genetic procedures in a city based population on Hungary. **METHODS:** Previously women aged 35 years or more had access to chorionic villus sampling (CVS) or amniocentesis (AC). A private prenatal diagnostic center offered a population based screening protocol irrespective of maternal age. Invasive testing was performed for women having a combined risk for fetal aneuploidy> 1:250. Total number of 4611 singleton and twin pregnancies in the gestational age of 11+0 and 13+6 weeks were enrolled between November 2010 and August 2013. Maternal serum level of pregnancy associated protein-A (PAPP-A) and free-beta human chorionic gonadotropin (free β-hCG) were determined by KRYPTOR (Brahms-Thermofisher Gmbh, Germany). **RESULTS:** The screening rate in this city based population was 60%. 277 (6,3%) women had a positive first trimester screening result. There were 16 fetuses with Down's syndrome and 14 fetuses with other chormosomal abnormalities diagnosed. The sensitivity and specificity were 100% and 95%, the false positive rate was 4,5% and the false negative rate was 0%. The positive predictive value of the test was 11%, the negative predictive value was 100%. The number of pregnancies in which an invasive test was performed decreased from 518 in 2005 to 295 in 2013, or by 44%. The proportion of women aged less than 35 years increased, while the rate of women over 35 decreased in this invasive group. **CONCLUSIONS:** It is possible to change the pattern of invasive prenatal procedures and reduce the proportion of women having CVS or amnio. Efficient information is needed to increase the screening rate, especially in a self-financed system, where the public health insurance does not cover this type of nationwide screening.

**PIH8**

**BURDEN OF DISEASE IN ASIAN COUNTRIES AND THE USE OF DISABILITY-ADJUSTED LIFE-YEARS AND QUALITY-ADJUSTED LIFE-YEARS**

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**OBJECTIVES:** Disability-adjusted Life-years (DALYs) and Quality-adjusted Life-years (QALYs) are two measurements commonly used in health care evaluations; however the specific disease areas where they are most applicable are not fully defined. The objective of this study was to review the use of DALYs and QALYs in trials taking place in China and Thailand and review the relationship with disease burden. **METHODS:** PubMed was searched for studies published after 01/01/2004 reporting DALYs and QALYs for communicable and non-communicable diseases in China and Thailand. Data on disease burden were obtained from the World Health Organisation's (WHO) 'Mortality and Burden of Disease Estimates for WHO Member States in 2004' database. **RESULTS:** 117 studies were included for China; 79 reported QALYs and 38 reported DALYs. 34 studies were included for Thailand (QALYs: 28; DALYs: 6). Of trials reporting QALYs, 74.7% of Chinese and 78.6% of Thai trials focussed on non-communicable disease; the most commonly investigated disease was cancer. Of trials reporting DALYs, 44.7% of Chinese and 16.7% of Thai trials focussed on non-communicable diseases. In terms of the disease burden, communicable/non-communicable diseases account for 24.6%/75.4% and 33.7%/66.3% of the burden in China and Thailand respectively. Leading causes of disease burden were cerebrovascular disease (7.7%) and HIV (12.0%) in China and Thailand respectively. **CONCLUSIONS:** A dual burden of disease was observed in Asian countries in terms of non-communicable/communicable diseases. The QALY was the preferred measure for non-communicable diseases in China and Thailand. While the DALY is used equally in communicable and non-communicable diseases in China, it is used predominantly for non-communicable diseases in Thailand. This presents a challenge to health care managers; while it is clear that QALY is used mostly for non-communicable diseases, the most appropriate use of the DALY is unclear. Further research into the characteristics of diseases within these categories is required.

## INDIVIDUAL'S HEALTH – Cost Studies

**PIH10**

**USING HORMONAL CONTRACEPTION REDUCE UNINTENDED PREGNANCY IN CHINA**

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**OBJECTIVES:** The potential high-unintended pregnancy rates have resulted in great productivity loss in China. Several contraceptive methods have been introduced by both the providers and the woman themselves to reduce the unintended pregnancy rates.A cost-benefit analysis on various hormonal contraceptive methods was performed in order to provide references for contraception selection in China. **METHODS:** A decision-tree model was used to compare contraception costs and effects among different contraceptive methods. All women were classified into three contraception profiles (continuation, discontinuation and switch, discontinuation and drop-out).Outcomes included no pregnancy, pregnancy with no birth and birth. All the probabilities, medical and medication data in this model were derived from the literature and interviews. **RESULTS:** A comparison of total estimated yearly and cumulative costs indicated that contraceptive implants, transdermal contraceptive, extended-cycle OC, vaginal ring, and IUD were less costly, less than $281733.7 in a three-year study period. While transdermal contraceptive, extended-cycle OC and vaginal ring were not available in the Chinese market, contraceptive implants and IUD were the only two choices in China with lowest cumulative costs. The further cost-benefit analysis also demonstrated contraceptive implants as good value for money. Using contraceptive implants were proved to have the lowest cost of pregnancy from failure of $839.9, with a total cost of $26814.9, and a benefit-cost ratio of 2.2, far over 1.0. Sensitivity analysis by tornado diagrams showed that cost of pregnancies, age and proportion of discontinuation and switch might have the greatest impact on the costs and failure risks of contraceptive implants. **CONCLUSIONS:** In order to reduce the unintended pregnancy rates, the implementation of hormonal contraception may lead to a benefit in terms of both costs and effects. And among all the hormonal contraception in the Chinese market, contraceptive implants tend to generate greater economic benefits. Note:1US dollar=6.46 Chinese yuan.

**PIH11**

**DISEASE BURDEN OF UNINTENDED PREGNANCY IN CHINA**

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**OBJECTIVES:** China is a big country with a large population. Reproductive health education is not sufficient for women of childbearing age, which leads to high unintended pregnancy (UP) rate.These represent a significant cost to the health care system. This study analyzes the epidemiology and productivity loss of unintended pregnancy in China. **METHODS:** The study reviewed published scientific articles and policy documents related to unintended pregnancy in China. We retrieved literature from Wanfang and PubMed databases, and searched policy documents in websites of National Bureau of Statistics and National Center for Women and Children's health, China CDC. **RESULTS:** Almost 10% of fertile women have UP in China each year. There are four different results of UP, including miscarriage, elective abortion, ectopic pregnancy and delivery. There are two methods of elective abortion, including operation abortion and drug abortion. The costs of operation and drug abortion are about US $131.58 and $100.62 in early pregnancy respectively, and $154.80 and $464.40 in the second trimester respectively. Drug abortion costs are much more in the second trimester because of complications. The incidence of ectopic pregnancy is about 4.4%, and there are three therapeutic methods. The costs of laparoscopic operation and open abdominal surgery are more than drug conservative treatment. The costs are between $309.60 and $1393.19. Delivery has three possibilities. Vaginal delivery accounted for 52.6%, and cesarean section accounted for 46.2%. The incidence of premature birth is about 6.36%. Vaginal delivery and cesarean section will cost about $387.00 and $619.20 respectively. The costs of premature birth range from $928.80 to $1547.99, and the costs will be increased with high likelihood of neonatal weight. **CONCLUSIONS:** UP poses a heavy economic burden in China, but the economic burden could be reduced if fertile women receive more reproductive health education, get appropriate treatment and have periodical prenatal examination.

**PIH12**

**AN UPDATE OF COST-EFFECTIVENESS OF ROTAVIRUS VACCINATION IN INDONESIA: TAKING A BIRTH-DOSE VACCINATION STRATEGY INTO ACCOUNT**

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**OBJECTIVES:** Rotavirus infection was reported as the major cause of severe diarrhea in children under 5-years-old in Indonesia. A low cost rotavirus vaccine to protect infants from birth has been developed for developing countries, such as Indonesia. This study aims to update our initial analysis on the cost-effectiveness of rotavirus vaccination in Indonesia, taking a birth-dose vaccination strategy explicitly into account. **METHODS:** An age-structured cohort model was developed for the 2013 Indonesia birth cohort. Applying different rotavirus vaccine efficacies for formula-fed and breastfed infants, we compared two vaccination strategies: (i) three-dose schedule at 2, 3 and 4 months of age, and (ii) three-dose schedule at 0, 1, and 2 months of age. We applied a 5-year-time-horizon with 1 monthly analytical cycles for children less than 1 year of age and annually thereafter. Also, we used Monte Carlo simulations to examine the economic acceptability and affordability of the rotavirus vaccination. **RESULTS:** Rotavirus vaccination would reduce rotavirus-diarrhea cases in children under 5-years-old by 475,806 and 489,259 cases for the first and second strategies, respectively. Considering amarket price of US$ 5 per dose, the Indonesian government would require budgets of US$ 65.0 million and US$ 65.3 million for the first and second strategies, respectively.The incremental cost-effectiveness ratios wereUS$ 150 and US$ 146for