journals and articles as very useful source of information and 35.92% doctors mentioned as useful source of information. Only 4.85% doctors believe this is less useful source of drug information. 49.51% of doctors believe as very useful source of information and 45.63% as useful. Only 4.85% doctors mentioned that as less useful source. Subscription based source showed that 41.74% doctors mentioned that as very useful source and 49.51% mentioned that as useful source. A total of 8.73% doctors mentioned that as less useful source. Informal discussions with other doctors as drug information source is very useful for 47.57% doctors and useful for 46.60% while only 5.82% doctors mentioned that as less useful source of information. **CONCLUSIONS:** Medical representative is not the option for successful promotion, companies should also focus on other sources ex. medical journals, internet sources which are highly appreciated among health care practitioners.

PHP54

CHEMICAL DRUG PRICE INDEX STUDY

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OBJECTIVES: To accurately reflect actual price level of chemical drugs and changes, this study deeply explored influencing factors of chemical drug price, constructed chemical drug price index system and meanwhile sought methods to establish price index of a specific type of chemical drugs. **METHODS:** Combination of qualitative and quantitative methods was used to explore establishment of chemical drug price index. Expert evaluation and field survey were used to determine classification of chemical drugs, representatives and representatives' weights. Questionnaire was used to determine key data in selection of chemical drug representatives. Field survey was used for data collection. **RESULTS:** On the basis of chemical drug classification, representatives were determined step by step. By collecting chemical drug price data in representative regions and manufacturers, quantitative calculation of weight was performed. Selection route of quality adjustment method and key quality collection method when representative changed in price index were investigated. Data collection protocol required to establish chemical drug price index was proposed. Feasibility to establish chemical drug price index system was explored and several main price indexes were proposed. **CONCLUSIONS:** First, this study proposed specific methods to establish chemical drug prices and solved the problem of selecting representative from various chemical drugs. Second, quality adjustment decision process was proposed and key quality adjustment methods were explored. Finally, as it is difficult for a single overall chemical drug price index to completely reflect the general view of chemical drug price level and changes in our country, this study proposed an index system including overall index, essential drug index and antibiotic index based on the need of reality.

PHP55

PERCEPTION TOWARDS HEALTH PROMOTION ACTIVITIES: FINDINGS FROM A CROSS SECTIONAL SURVEY AMONG URBAN POOR POPULATION IN THE STATE OF PENANG, MALAYSIA

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OBJECTIVES: To provide information on the perceptions towards health promotion activities among an urban poor population of Malaysia. **METHODS:** The study was designed as a questionnaire based cross-sectional analysis. General public from the district of Jelutong which is located in the state of Penang, Malaysia was conveniently approached for the study. The questionnaire asks about perceptions and awareness towards health promotion activities. Descriptive statistics were used to ascertain demographic characteristics of the study participants. Inferential statistics were employed to measure the extent of association among study variables. All analysis was performed by SPSS v.16.0. **RESULTS:** Out of 480 respondents, a response rate of 82.7% was achieved as 397 responded to the survey. The study cohort was dominated by females (63.0%). Majority of the participants belonged to Malay ethnicity (88.1%). One hundred and seventy two (43.3%) never attended a health promotional campaign and mentioned lack of time and transport as potential barriers. Among those who attended such activities, one third was satisfied with the benefits of health campaigns and indicated an improvement in their quality of life. Approximately 90% of the participants demanded accessible locations, common language as mode of communication and complete medical checkup with professional advice at health promotional campaigns. **CONCLUSIONS:** Almost half of the study population never attended a health promotional campaign. General public should be educated and encouraged to participate in the health promotion activities. In addition, potential barrieers like lack of time and transport should be avoided by organizing such events with the reach of the community members.

PHP56

THE ROLE OF ANTINEOPLASTIC AND IMMUNOMODULATING AGENTS IN WORKS AND RECOMMENDATIONS OF AGENCY FOR HEALTH TECHNOLOGY ASSESSMENT IN POLAND (AOTM) IN YEARS 2005-2011

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OBJECTIVES: To assess the influence and role of antineoplastic and immunomodulating agents in works and recommendations of AOTM. The main role of AOTM, established in 2005, is to assess, appraise and prepare recommendations on financing all medical technologies and services claiming public money founding. Full pharmacoeconomic evaluations of new therapies are required for all reimbursement decisions. Manufacturers of antineoplastic and immunomodulating drugs

are obligated to provide HTA reports in order to have their drug reimbursed. Recommendations issued by AOTM have been based on Manufacturer's submission, additional published data, experts and Polish public payer opinions. **METHODS:** All recommendations issued by the AOTM until the end of 2011 were reviewed and analyzed from the official website of AOTM. The recommendations related to antineoplastic and immunomodulating drugs were distinguished. **RESULTS:** Among 400 AOTM recommendations analyzed, the largest number, 142 of 400 (36%) was connected with antineoplastic and immunomodulating agents. 105 (74%) of them regarding oncology treatment. Recommendation for non–drug technologies were issued to 47 (12%) of 400 technologies. 58 (15%) applied to drugs used in the treatment of nervous disorders, 34 (9%) metabolic disorders, 31 (8%) were related to cardiovascular drugs, 21 (5%) genito-urinary system. 15% of verified documentations applied to other, single indications. **CONCLUSIONS:** The number of recommendations issued for antineoplastic and immunomodulating drugs in comparison to other medicines reflects the importance and significance of this area of medicine. Documents prepared by AOTM related to antineoplastic (cancer chemotherapy) treatment represent standards and trends in contemporary medicine.

PHP57

CLINICAL EFFECTS OF PHARMACIST INTERVENTIONS FOR POLYPHARMACY IN A GERIATRIC CLINIC IN TAIWAN

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OBJECTIVES: To evaluate clinical pharmacist interventions in geriatric outpatients in terms of reduce the potentially deleterious consequences of polypharmacy. **METHODS:** This intervention study was conducted by geriatric team from March 2011 until Aug 2011 in a medical center in Taiwan. Medication assessment was undertaken in elderly outpatients aged 65 years or older who prescribed five or more drugs concomitantly on the date of inclusion. We provided Comprehensive Geriatric Assessment (CGA) to the patients. This process involves a comprehensive medication history interview by pharmacist, structured therapy assessment, and open communication between members of the medical team. **RESULTS:** A total of 51 patients were included during the period. The mean age was 79.4 (± 13.4) years; 53% were women. The patients took an average of 11 different long term medications. Medication reduction during 3 consequence pharmacist consulting in clinic visit were 37.7%, 38.8%, 44.2% respectively. Finally, the mean number of medications prescribed per patient was 7.8. **CONCLUSIONS:** Pharmacists involved in CGA has proved effective in reducing the number of prescriptions and daily drug doses for patients by facilitating discontinuation of unnecessary or inappropriate medications.

PHP58

DIRECT COST OF ADVERSE DRUG REACTION TREATMENT IN HOSPITALIZED PATIENTS IN NAKHON PATHOM HOSPITAL, THAILAND

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OBJECTIVES: To determine the direct medical cost of treatment in hospitalized patients with adverse drug reactions (ADRs) in regional hospital in the provider's perspective. **METHODS:** The direct medical cost were collected from historical profile of the inpatients who were identified using a list of ICD-10 and admitted in special ward 4/2 in the fiscal year 2009 (From 11/7/2008 - 9/30/2009) in Nakhon Prathom Hospital. They were divided into 2 groups 1) the patients admitted with ADRs, and 2) the patients who admitted and developed ADRs after admission so that extended hospitalization. The direct medical cost including cost of medical care, cost of hospitalization and cost of laboratory. **RESULTS:** During study period 34(19.32%) cases of hospitalization patients admitted because of ADRs and 142(80.68%) cases were verified to have ADRs after admission and 137(77.84%) cases were excluded because they developed ADRs but not extended their hospitalization. More than 35% of the patients age between 30 -44 years old in both groups. The 22(56.41%) patients in group 1 did not previously have ADR. Using Naranjo's Algorithm found that more than 60% of the patients were categorized in probable class. ADR occurred in both groups more than 40% cause by antibiotics. Most frequent ADR were maculopapular(30.77%) and urticaria(15.38%) as well as occurring more than 1 symptoms(15.38%). Total direct medical cost in fiscal year 2010 from patients in both groups was estimated at 185,935.75 Thai Baht, average direct medical cost 4,767.58 Thai Baht per patient. The average direct medical cost in group 1 and group 2 was 5,074.94 Thai Baht and 2,677.55 Thai Baht per person respectively. **CONCLUSIONS:** This study emphasized medical and economic impact of the ADRs treatments. ADR surveillance and pharmaceutical care activities would be compared the cost and benefit.

PHP60

IRANIAN PHARMACISTS' JOB SATISFACTION: ANALYSIS THROUGH VARIOUS JOB CHARACTERISTICS

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OBJECTIVES: Concerning insufficient collected data about pharmacists' job satisfaction in the Middle East and also in Iran, this countrywide study was conducted to determine Iranian pharmacists' job satisfaction in some job characteristics; additionally, some causes of dissatisfaction among pharmacists have been diagnosed. **METHODS:** A job satisfaction questionnaire was developed and reliability tests were done by some experts in field of pharmacy practice. Then a sample

population of 30 pharmacists filled the questionnaires and validity test was done. A sample of 700 pharmacists was selected among ten leading provinces of the country and questionnaires were distributed at the continuing pharmacy education conferences at which pharmacists all over the country have to participate. **RESULTS:** Three essential factors named "Endogenous Satisfaction", "Exogenous Satisfaction" and "Current Sense of Being Pharmacists" were considered as the main job satisfaction factors and a mean score of >3 –based on a 5-point Likert scale- was considered as high job satisfaction. Generally low scores of exogenous and endogenous job satisfaction were concluded among pharmacists while most of them were highly satisfied with being pharmacist. Male pharmacists were more satisfied than their female colleagues and a positive relationship between age and work experience with exogenous job satisfaction was found. **CONCLUSIONS:** Low levels of job satisfaction which were found among Iranian pharmacists could be considered as a deficiency of health system in Iran. Fortunately, inherent interest in the pharmacy profession found among Iranian pharmacists is an optimistic point at which policy makers could develop their modifying policies. Health policy makers must endeavor to take other steps to issue solutions for this current problem.

PHP61
TO EVALUATE THE EFFECTIVENESS AND COST OF PHARMACEUTICAL CARE VOLUNTEER SET UP BY TAINAN CITY GOVERNMENT INVOLVED IN THE HOSPITAL ATTACHED HOME CARE PATIENTS

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OBJECTIVES: To evaluate the effectiveness and cost of pharmaceutical care volunteer team set up by Tainan City Government involved in the hospital attached home care patients. **METHODS:** Tainan City Government set up a pharmaceutical care volunteer team. Members include six hospitals and fourteen pharmacists. Pharmacists visited their home once a month to give them education on drug administration, drug interaction, duplicated drug use, adverse drug reaction etc. Pharmacists were created drug profile for each patient and recorded the items of education and discussed with their visiting physicians about their drug regimen in case there were inappropriated drug usage. The outcome measures included the decrease of items and quantities of drugs prescribed in one prescription, patients' knowledge of drug safety, and the decrease of drug cost and the estimated cost of preventing potential adverse drug effect or drug interactions. **RESULTS:** Total 583 patients include in this study, the average number of drugs prescribed to one patient was 5.93. There were 50.48% (209/414) and 24.88% (103/414) of patients treated with poly-pharmacy and used drugs inappropriately, respectively. The most common medication-related problems were the use of medication without proper indication 12.56% (52/414), repeat medication 2.90% (12/414), inappropriate administrate route 8.21% (34/414), poor compliance 47.83% (198/414), the potential adverse drug reactions and drug interactions appeared in 6 patients (1.45%) and 26 patients (6.28%), respectively. The effectiveness of pharmaceutical care volunteer team intervation included the physicians presciding medications appropriately and reduced the items of average 5.46 medications($p<0.05$). Pharmacist intervention reduced average drug cost about NT 2,245,300 per year($p<0.05$). **CONCLUSIONS:** Through pharmaceutical care volunteer team interventions in hospital attached home care patients system may provide appropriate pharmaceutical service, reconciling medications, and patient discharge counseling and follow-up, which are resulting in improved patients outcome and quality of life.

PHP62
MODIFY CHANGE ORDER SYSTEM TO REDUCE DRUG RETURN RATE IN INPATIENT PHARMACY

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OBJECTIVES: Unit-dose drug distribution system allows to provide patient individually packaged medications in our inpatient setting. When the doctor solely changed order of dosage, however, the system indicated the pharmacy to provide an identical package of medication with only different amounts, which produced unused drugs being stocked on wards that require to return. The difficulty of managing drug return is labor-consuming and not cost-effective. The objective of this study is to modify change order system to minimize drug return rate, and to evaluate the financial impact of this approaches. **METHODS:** During January through August 2011, among 270,000 dispensed prescription per month, twenty percent (approximately 50,000 medications) were returned. Therefore, in September 2011, We add a calculation function to the system that allows to identify how many needed drugs pharmacy should dispensed when dosage change by minusing the amount of drugs left on wards. **RESULTS:** The intervention suggests approximately 60 % reduction in drug return rate was noted through the modified system. Via the modified system, the numbers of daily drug return were dramatically dropped form 2176 previously to 1143 in October 2011, and gradually reduced to 887 in November. Moreover, the estimated cost avoidance will reach NT 1,110 million per day based on the average cost of NT 861.16 per medication. **CONCLUSIONS:** This study demonstrated that modifying change order system were able to prevent drugs being stocked on wards, reduce drug return rate and drug wasting as well.

PHP63
INTEGRATED MEDICATION RECONCILIATION MODEL IN COMPUTERIZED PHYSICIAN ORDER ENTRY (CPOE) SYSTEM

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OBJECTIVES: To assess the effects of medication reconciliation model in computerized physician order entry (CPOE) system for integrated patients. **METHODS:** Build a medication reconciliation model in computerized physician order entry (CPOE) system Pharmacist search integrated patients return information from system, and evaluate patient's drugs and laboratory data before patient return to visit the doctor. Medication suggestion was showed in CPOE immediately, include adjust dosage, discontinue and change drug. The system according physicians choose assist prescribing. Pharmacists provided patient's education. on drug administration, drug interaction, duplicated drug use, adverse drug reaction etc. The outcome measures included the decrease of items and quantities of drug prescribed in one prescription, patients' knowledge of drug safety, and the decrease of drug cost. **RESULTS:** Total number of 1415 integrated patients include in this study. There were 378 drugs related recommendation through medication reconciliation model showed in CPOE, 81.5% (308/378) medication reconciliation were accepted by the physicians. The average number of drugs prescribed to one patient was from 5.29 reduced to 4.5(14.85%), each month emerge department visit reduced 21.7% (0.079 vs 0.063). Medication reconciliation model in CPOE system intervention reduced average drug cost about NT 107,430 per month. **CONCLUSIONS:** By medication reconciliation model in computerized physician order entry (CPOE) system, physicians can receive the medical suggestion from pharmacists immediately, and correct prescription rapid and easy. At the same time this system can improve patient outcome and live quality.

PHP64
ANALYZING THE ANNUAL ADVERSE DRUG REACTIONS AT A REGIONAL TEACHING HOSPITAL OF SOUTHERN TAIWAN

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OBJECTIVES: The safety issue is an important part of medicines using besides efficacy. Once patients suffered from adverse drug reactions (ADRs), they may need for intensive care and increase the financial burden. Construction of Reporting System of Adverse Drug Reaction that let all medical care givers could report drug related adverse events, can collect the regional information and declare the analyzed ADRs to health care related professionals to prevent the unwanted events and protect patients from harms. **METHODS:** The data was claimed form Reporting System of Adverse Drug Reaction of a regional teaching hospital from January 2011 to December 2011. **RESULTS:** A total of 293 ADRs had been reported; 36.5% were female and the others were male. Analyzing by the age level, this was stratified by every 10 years, the top three were 70~79 (22.9%), 50~59 (20.1%), 60~69 (18.8%). Antimicrobial agents (28.6%) were mainly reported pharmacological catalog of suspected medicines, the second was urinary tract and sexual hormone related agents (13.0%) and the third was neurologic related agents (10.5%). Dermalogical related symptoms (29.3%) were major part of the adverse reactions and followed by nervous system related symptoms (11%) and liver related symptoms (10.4%). 55.3% are classified to type A reaction and others are type B. The causal relationships of definite, probable, possible and doubtful, sorted by Naranjo score, were 1.7%,56.9%,40.6%, and 1.7% separately. Assaying severity of ADRs, mild was 47.1%, moderate was 52.9%. Stopping the offending medicine was the most strategies to management the ADRs, followed by "stopping and giving the relief medicine" and shifting to others. **CONCLUSIONS:** The most offending medicines were antimicrobials agents, but health-care related professionals should observe patients' conditions closely after taking any medicines. Building up the monitoring system is worthy to provide safety information to professionals and have the positive impact on patients. We should keep monitor that.

PHP65
PERCEPTIONS AMONG GENERAL MEDICAL PRACTITIONERS TOWARDS IMPLEMENTATION OF MEDICATION RECONCILIATION PROGRAM FOR PATIENTS DISCHARGED FROM HOSPITALS IN PENANG, MALAYSIA

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OBJECTIVES: To explore the perceptions of general practitioners (GPs) from the state of Penang towards the feasibility of implementing the Medication Reconciliation program in Malaysia. **METHODS:** A cross-sectional descriptive study using a validated, self-completed anonymous 18-itemed questionnaire was undertaken over a period of 2 months in 2010. The study was conducted in the state of Penang, Malaysia. A letter consisting of survey questionnaires and prepaid return envelope were mailed to 429 GPs identified from the Private Medical Practice Control Department Registry. **RESULTS:** A total of 86 responses were received with response rate of 20.1%. Majority (90.1%) of the respondents agreed that medication reconciliation can be a feasible strategy to improve medication safety and 97.7% confirmed that having an accurate upto-date list of the patient's previous medication will be useful in the rational prescribing process. However, about half (56.9%) of them felt that standardization of the medication reconciliation process in all clinics will be difficult to achieve. Three quarters (73.2%) of the respondents believed that the involvement of GPs alone is insufficient and 74.5% agreed that this programme should be expanded to community pharmacy setting. Over 90% of the respondents agreed upon the medication reconciliation card proposed by the researchers. **CONCLUSIONS:** GPs in Penang are generally in favour of the implementation of medication reconciliation programme in their practice. Since medication reconciliation has been shown to reduce many medicines related problems, it is thus worth considering the feasibility of nationwide implementation of such programme.