the second group in public sector was cephalosporins (4%) and in private sector were penicillins (3%). In private sector pediatricians prescribed antibiotics to 52% (17/33) of children with diarrhea and fluoroquinolone group was prescribed to all. At public facilities, main members from fluoroquinolones were norfloxacin, followed by ofloxacin and ciprofloxacin. At private clinics, it was ofloxacin followed by ciprofloxacin. Pediatricians mainly prescribed ofloxacin, followed by norfloxacin. **CONCLUSIONS:** This study clearly shows over-prescription and irrational use of antibiotics for treatment of diarrhea that warrants interventional strategies.

HEALTH CARE USE & POLICY STUDIES – Consumer Role in Health Care

PHP1

A STUDY EVALUATING PATTERN OF NON-PRESCRIPTION PURCHASE BY CONSUMERS FROM COMMUNITY PHARMACIES IN MALAYSIA

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OBJECTIVES: To analyze the pattern of non-prescription medicine purchase by consumer from community pharmacies in Malaysia. **METHODS:** A cross-sectional survey comprised a sample of 1799 community pharmacy consumers was conducted nationwide. A pharmacy "exit survey" was developed and administered to pharmacy consumers of randomly selected community pharmacies in order to collect information on the purchased nonprescription medicine(s) including its costs. In this study, the nonprescription medicine definition was adopted from the Malaysian Poison Act 1952. Data were analyzed using Kruskal–Wallis, Mann–Whitney, chi-square and Spearman correlation test in SPSS v15. **RESULTS:** A total of 2175 nonprescription medicines were purchased by consumers interviewed in 2 weeks study period. The total cost estimated for all item purchased was RM41,000 (USD13,000). About 39.6% of the purchased items are listed under scheduled poison, 45.5% were unscheduled poison and 12.5% are those listed as traditional and complementary medicine. Medicine for alimentary tract and metabolism, musculo-skeletal system and respiratory system as categorized by Anatomical Therapeutic Coding were among the highest purchased medicine. Factors such as gender especially females, area of origin especially those from urban area, ethnicity especially chinese consumers and those earning high income level shows to have a significant influence in the spending for non-prescription medicine purchasing. This study also showed purchasing for non-prescription medicine significantly increased as aging. Consumers spent significantly more on non-controlled medicine such as vitamins and herbal preparations compared to other categories of medicines ($\chi^2 = 185.07$, $P < 0.001$). **CONCLUSIONS:** The evaluation on pattern of nonprescription medicine purchasing in Malaysia reveals that consumers in Malaysia are able to spend money for buying medicines to treat minor ailments and practice of self-medication. The socio-demographic factors that associated with non-prescription medicine purchase will serve as useful information for policymakers and also the pharmaceutical industry for future development in rational medicine use education among consumers in the country.

HEALTH CARE USE & POLICY STUDIES – Disease Management

PHP3

RARE DISEASES, ORPHAN DRUGS, AND THE LEGISLATION IN CHINA

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OBJECTIVES: Public awareness of rare diseases and access to orphan drugs is increasing in China. The purpose of this study was to review the epidemics of rare diseases, the access to orphan drug treatments, and its related legislation in China. **METHODS:** A systematic literature review was performed based on published articles, government Websites, and some Internet search engines. The rare diseases, available orphan drug treatments, and related legislations in China were reviewed. Some comparisons related to these topics were discussed between China and developed countries like the United States. **RESULTS:** With conservative estimation, there are at least 10 million Chinese people living with rare diseases. The frequently mentioned rare diseases in China include osteogenesis imperfecta, neuromuscular diseases, Fabry disease, Gaucher disease, phenylketonurias, hemophilia A and B, lymphangioleiomyomatosis, albinism, and acromegaly. Patients with rare diseases in China generally lack the access to appropriate health care especially the orphan drug therapies. While we observed the significant impact of Orphan Drug Act on new drug developments and rare disease treatments in developed countries, there is little new orphan drug designated or developed in China. There are very few imported orphan drugs in the Chinese market. A grouping number of Chinese rare-disease organizations such as the China Albinism Association and the China-Dolls Care and Support Association are working with government on a new legislation about health care assesses and insurance policy for rare diseases. **CONCLUSIONS:** Public and governmental concerns about rare diseases have been boosted in China. Their available treatments and legislation in China are lagging far behind the United States, the European Union, Australia, Singapore, Japan, and South Korea. An effective public health insurance and public policy are needed for rare disease treatments and orphan drug developments.

HEALTH CARE USE & POLICY STUDIES – Drug/Device/Diagnostic Use & Policy

PHP4

EFFECTIVENESS OF TWO POLICIES TO REDUCE DIPHENOXYLATE CONSUMPTION IN IRAN

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OBJECTIVES: Iran had one of the highest uses of Diphenoxylate in the world in 2008. About 1 billion tablets of Diphenoxylate 2.5 mg have been consumed during that year. In the last months of 2008 the ministry of health tried some policies to reduce the consumption. One was rationing in production the other was doubling the price of 10 medicines which likely were abused including Diphenoxylate. This study tries to show the effectiveness of these two interventions by evaluating monthly consumption of Diphenoxylate during recent 5 years ended to March 2010. **METHODS:** Data were gathered from the distributors and wholesalers of this medicine from whole the country. These data were crosschecked with importation data in the ministry of health. We did a time trend analysis on tabulated data. **RESULTS:** There are some variations in monthly use of Diphenoxylate but the trend shows a significant decrease after the rationing in production. In 2009 the average consumption has reached to less than 650 millions of tablet, four Defined Daily Dose per 1000 Inhabitants per day which shows 36% decrease in comparison with the previous year. In second half of 2009 and first 2 months of 2010 after the second intervention, there is no significant change in the trend. **CONCLUSIONS:** Although the high consumption of opiates in Iran is a multi factorial phenomena but this study shows; the first intervention has been able to control the abuse of Diphenoxylate due to the reduction of market supply and decrease in Diphenoxylate's unofficial promotion. Considerable result wasn't seen in the second approach. The user price of Diphenoxylate tablet in Iran is too cheap and doubling the price doesn't work at all. A significant tax mark-up and increasing the price based on label use may affect on affordability of Diphenoxylate's abuse.

PHP5

THE ESSENTIAL MEDICINE SYSTEM IN CHINA: STRATEGIES AND CHALLENGES

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OBJECTIVES: In the 1980s, China launched market-oriented reforms. Public hospitals were encouraged to make their own incomes with the aim of mobilizing medical workers and improving hospital efficiency. Less government funding resulted in deficits for public health institutions, which forced hospitals to generate their own revenue by aggressively selling drugs, especially expensive drugs. There are challenges in poor drug access, drug procurement, rising drug costs and financial risk. In March 2009, China finally unveiled its health care reform plan. The Chinese government announced it will institute an essential medicine system within 3 years to drive down prescription costs and quell public complaints of limited accessibility of medicines. This study is to describe the strategies to build the essential medicine system at the provincial level in China and challenges associated with promoting it. **METHODS:** Key actors, their power, views and interactions will be assessed using appropriate qualitative methods as these are best suited to understanding complexity, richness of material and motivations of actors, and using a policy analysis to know the key governance issues and underlying relationships affecting its success or failure. **RESULTS:** The system includes a list of essential medicines that would be produced and distributed under government control and supervision, and it should be used at all public health facilities at grassroots levels from 2009. The central government will set reference prices, based on which, provincial governments set the purchase prices of the drugs in their jurisdiction. Public medical and health facilities at the grassroots levels should sell the drugs at the purchase prices. These generally involve the transfer for a fixed fee from the local MOH to the health service center/post in exchange for the removal of retail mark up, which couldn't offset the profit of selling drugs. **CONCLUSIONS:** The provider incentive is very crucial for building an essential medicine system, which is dependent upon the reimbursement system.

PHP6

RECOMMENDATIONS FOR A BIOLOGICS-SPECIFIC PRICING SYSTEM IN CHINA

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OBJECTIVES: The pricing system for chemical drugs is currently applied to biologics in China as no specific pricing system for biologics exists yet in China. This practice does not fully reflect the characteristics of biologics and may potentially prevent the launch of biologics in China and discourage the development of biologics. The objective of this study is to explore adequate pricing mechanisms for biologics. **METHODS:** Both primary research (field research, expert interviews, surveys) and secondary research were conducted to determine the key determinants of the price of biologics and understand the complexity of R&D, manufacturing and distribution required for biologics. Statistical analyses were performed to assess the relationship of key determinants and the price. Government and manufacturer behavior were modeled using game theory to demonstrate prerequisites of implementing 'differential pricing'. **RESULTS:** A different pricing system is required for biologics given its unique characteristics. Certain characteristics (including special clinical value, target-specific R&D