pital beds changed significantly in 2007 and 2011. The aim of our study is to assess the effect of the long-term care system in Hungary, to examine the effect of these regulations. METHODS: We used input-oriented Data Envelopment Analysis to calculate technical- and scale efficiency. We chose five variables: number of beds, average length of stay (inputs), number of discharged patients, amount of fee paid by insurers, and total number of drug development (outputs). Data were collected from databases of the Hungarian National Health Insurance Fund. For our calculations we used the DEA 2.1. RESULTS: In these years all of the selected variables were increasing, except the average length of stay. Technical efficiency was 94.2% in 2006, 88.6% in 2010 and 95.1% in 2013. Scale efficiency was 91.4% in 2006, 90.9% in 2010, 92.7% in 2013. Ratio of technically efficient units has relatively high values in all years. Efficiency scores decreased because the units have larger size (more beds). CONCLUSIONS: Based on the results we can say that the units have relatively high values in all years. Efficiency scores decreased slightly in 2006-2010, but showed improvement in the next three years. We can conclude that the long-term care system needs to reduce the number of units, but needs to improve the size of them.

PHP79 THE COMPETITION BETWEEN DRUGSTORE AND PRIMARY CARE AND TREATMENT CHOICE OF PATIENTS IN THE CONTEXT OF ESSENTIAL MEDICINE POLICY IN RURAL CHINA
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OBJECTIVES: Since 2009, Chinese government has constructed essential medicines policy of centralized purchasing, uniform distribution, compulsory use of essential medicines and “zero-profit” mark-up” (i.e. non-profit) sale for essential medicines in primary care, but the policy does not regulate the drugstore. As a result, competition relationship between drugstore and primary care has changed in rural China. This study aims to investigate the competition relationship between drugstore and primary care in rural China. METHODS: We collect information of treatment procedure of 1015 patients from18 villages at three counties of Shandong Province in China with different economic development level. The interviews were done from November 2011 to May 2013 by the household investigation, supported by National Natural Science Foundation of China [Grant Number 71203124]. Competition relationship between drugstore and primary care is measured as growth rate of the number of drugstore and primary care. The indica- tor of patients’ treatment choice is proportion of purchasing pharmaceuticals channel. The relationship between competition relationship and patients’ choice is identified by interviews with stakeholders such as the leader of County Health Bureau, an academician and a patient. RESULTS: From 2010 to 2014, the number of drugstore in poorest and richest County has increased respectively 2.43 times and 0.18 times. However, the number of primary care keeps unchanged. At the same time, the treatment choice of patients including village clinic (46.31%), drugstore (22.17%), county hospitals (7.49%), township hospitals (6.60%) and other hospitals (17.44%). Drugstore has become the second biggest pharmaceuticals sale channel in rural China. The reason for this is the limited cost of using essential medicines by non-profit sale for primary care but not for drugstore. The government’s essential medicine policy has changed the competition relationship of pharmaceutical market in rural China, which affects treatment choice of patients. The treatment choice of patients is threatening the development of essential medicine in rural China. Keywords: essential medicine, competition, drugstore, primary care

HEALTH CARE USE & POLICY STUDIES – Formulary Development

PHP80 THE UNITED STATES SPECIALTY PHARMACY PAYOR LANDSCAPE
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OBJECTIVES: Determine how medical and pharmacy directors (MDs-PhDs) of US health plans, insurers, and PBMs manage specialty pharmaceuticals (SPs). In 2014 SPs accounted for one-third of spending, up from 23% in 2009. METHODS: Managed care (MC) MDs-PhDs from public and private plans covering multiple types of members completed an online interactive survey of: advisor-plan information; use of specialty-pharmacies, and current/future coverage of SPs. RESULTS: Fifty-four percent of respondents were MDs, the remainder mostly PBMs. Most worked for a health plan (83.6%) and the plans were: 39.6% PD drug coverage (PDs), 48.6% managed care (MCs), 36% traditional Medicare (TMs), 18.5% managed fee-for-service (MFFSs) and 9% regional. Essential medicine policy has changed the competition relationship of pharmaceutical market in rural China, which affects treatment choice of patients. The treatment choice of patients is threatening the development of essential medicine in rural China. Keywords: essential medicine, competition, drugstore, primary care

PHP81 DRUGS-ON-CHIP: EXPLORING THE UTILIZATION OF BIOSYNTHESISED ORGAN TISSUE TO IMPROVE EFFICIENCY OF THE DRUG DEVELOPMENT PROCESS
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OBJECTIVE: To examine an innovative and expensive process, partly because of the required testing for human toxicity and efficacy of drugs. Organ-on-a-chip is a multidimensional 3D microfluidic cell culture chip that simulates the activities and mechanisms of different organs and organ systems. Organ-on-chip is expected to reduce the amount of animal testing, and may increase efficiency of drug development. For instance, when organ-on-a-chip is used to replace or add to in vivo testing experiments, 7.5-10% of drug development costs may be saved. This study explored the use of SP products available through microfluidic systems in the early stage of organ-on-chip technology. METHODS: Stakeholders (n=50) in this research were employees of pharmaceutical companies (n=18, 36%), developers of microfluidic systems (n=14, 28%), and researchers capable of integration of organ-on-chip systems development and/or drug development (n=22, 44%). Stakeholders were asked their expert opinions about the potential benefits of organ-on-chip using a survey (LimeSurvey), which was based on information previously acquired from expert interviews. RESULTS: According to stakeholders, organ-on-a-chip may be most promising in basic research stage (90%) or the preclinical stage (88%) of drug development. Simple models can be used for target identification (70%) while complex models could lead to replacement of animals (78%). However, head-to-head studies are needed to change regulations, leaving organ-on-a-chip as an add-on in drug development for now. There are significant differences between stakeholders opinions about advantages. Most promising organ-on-chip development should target new (16%) and kidney (12%) diseases. CONCLUSIONS: Organ-on-a-chip can be a valuable add-on in the drug development process, in particular in basic research or preclinical stage of the drug development process. Given the early stage of organ-on-chip technologies, it is hard to predict return on investment.

PHP82 THE CURRENT LANDSCAPE AND EXPECTED CHANGES IN FORMULARY MANAGEMENT
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OBJECTIVES: To assess how the managed care (MC) market is changing currently and future. METHODS: Online interactive survey of 36 US MC and PBMs. RESULTS: Fifty-four percent of respondents were MDs, the remainder mostly PBMs. Most worked for a health plan (83.6%) and the plans were local, 35.4%; national, 25.0%; and regional and 86% were included in formulary development. 92.5% were MDs and 97.5% used SPs. Targets for the coming years placed SP products at the top causes for concern currently, and concerns for today and in the future can help guide product development. Of 30 hospital pharmacies, 23 (76.6%) pharmacy managers responded, only 21(70%) hospital pharmacies met the inclusion criteria, 15 (71.4%) are governmental and 6.8% are private hospitals; 4.0% are in hospitals by the US Air Force, 15% are in hospitals by the Department of Veterans Affairs (VA) and 3.8% are in hospitals with 146.67% hospitals with CPOE, only 9 (64.2%) have CPOE that are integrated with inpatient and outpatient PIS. For the PIS capabilities, 81% of the 21 hospitals had integration with EMR systems, 94.2% were able to detect incorrect dose and duration, 7 (33.3%) for drug-drug interaction, 7 (28.6%) for drug-disease interaction, 6 (28.6%) for contraindication, 5 (23.8%) for drug-drug interaction.

PHP83 PHARMACY INFORMATION SYSTEM IN SAUDI HOSPITALS- HOW FAR IS IT TO MEET THE PHARMACY BENEFIT MANAGEMENT PROGRAM REQUIREMENTS?
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OBJECTIVES: A cross-sectional survey targeted pharmacy and therapeutics (P&T) committees from public and private health systems and university employees affiliated with organ-on-a-chip/ microfluidic systems and university employees. The primary aim of this study is to explore and investigate the PIS capabilities in tertiary and secondary hospitals in Riyadh city, Saudi Arabia. METHODS: A cross-sectional survey targeted pharmacy and therapeutics (P&T) committees from public and private health systems in Riyadh City in 2014. The survey gathered information about PIS characteristics and concerns for today and in the future can help guide product development.