

Women, native-born and established immigrants, people living in central urban areas or close to central urban areas, people with chronic conditions, and those who perceived their health status as not very good, were more likely to seek second opinions than others. **CONCLUSIONS:** A considerable amount of people sought a second opinion. Certain patient profiles tended to seek second opinions more than others. Such utilization patterns are important to devise policy regarding second opinions, due to their implications on expenditure, policy, clinical outcomes, and patient satisfaction.

#### PHS125

##### THE IMPACT OF THE ECONOMIC CRISIS ON THE INCIDENCE AND INTENSITY OF CATASTROPHIC HEALTH PAYMENTS IN GREECE

Yfantopoulos I<sup>1</sup>, Chantzars A<sup>1</sup>, Ollandezos M<sup>2</sup>

<sup>1</sup>University of Athens, Athens, Greece, <sup>2</sup>Panhellenic Union of Pharmaceutical Industry, Athens, Greece

**OBJECTIVES:** The economic crisis and the relevant reforms have imposed a significant pressure on citizens' socioeconomic situation of as well as the quality and range of services provided by the national healthcare system in Greece. The aim of this study is to investigate the change in the incidence and intensity of catastrophic health payments and their distribution among economic strata in Greece. **METHODS:** Data were derived from the Household Budget Surveys of 2008 and 2013. Catastrophic health expenditure (CHE) was defined as a health payment that exceeded a given percentage (5%, 10%, 15%, 20%, 25%, 30% and 40%) of the household capacity to pay. The distribution of the incidence (proportion of households) and intensity (average excess of health payment budget share) of CHE in relation to total consumption was measured by concentration indices (Cis). **RESULTS:** The share of health payments to total consumption increased from 8.5% to 9.1% between 2008-2013. The proportion of households with CHE increased for thresholds at 5% (49.9%-56.3%), 10% (26.9%-32.1%), 15% (15.1%-19.6%), 20% (9.4%-12.0%), but decreased for 25% (6.1% -6.6%), 30% (4.1%-3.9%) and 40% (1.7%-1.0%), while the intensity of CHE among those households decreased for all thresholds, i.e. at 5% (9.6%-9.3%), 10% (11.1%-9.6%), 15% (12.9%-9.3%), 20% (14.5%-8.7%), 25% (16.2%-9.0%), 30% (18.0%-8.4%) and 40% (27.1%-8.4%) between 2008-2013. CIs revealed a greater tendency for poorer households to exceed payment thresholds and to have larger excess payments, which was significantly intensified with higher thresholds. Inequities were reduced for both incidence and intensity for all thresholds in 2013 (e.g. -0.105 and -0.377 at 5% and 40%) compared with 2008 (e.g. -0.118 and -0.430 at 5% and 40%). **CONCLUSIONS:** Health system's reliance on out-of-pocket payments increased during the economic crisis, though the change in its distribution was pro-poor, indicating the existence of policies providing financial risk protection mechanisms for poorer households.

#### PHS126

##### COST-EFFECTIVENESS ANALYSIS OF AN AUTOMATED MEDICATION SYSTEM IMPLEMENTED IN A DANISH HOSPITAL SETTING

Risør BW<sup>1</sup>, Lisby M<sup>2</sup>, Sørensen J<sup>1</sup>

<sup>1</sup>University of Southern Denmark, Odense, Denmark, <sup>2</sup>Aarhus University Hospital, Aarhus, Denmark

**OBJECTIVES:** The objective of this study was to evaluate the cost effectiveness of an automated medication system (AMS) integrating electronic medication administration record (eMAR), automated drug dispensing and barcode assisted. **METHODS:** The economic evaluation was performed alongside a controlled before-and-after effectiveness study. The primary outcome measure was number of errors in the medication administration process observed prospectively during a 3-week period. To determine the difference in error rate after implementation of AMS, logistic regression was applied with the presence of error(s) as the dependent variable and time, group and interaction between time and group as the independent variables. The cost analysis used the hospital perspective and employed a short-term incremental costing approach. The total 6-month costs with and without the AMS were calculated as well the incremental costs. The number of avoided administration errors was related to the incremental costs to obtain the cost effectiveness ratio expressed as the cost per avoided administration error. **RESULTS:** The AMS resulted in an overall reduced risk of errors of 81% in the intervention compared to the control ward (OR 0.19 [0.10-0.34]). The procedural error rate was reduced from 0.20 to 0.002 (OR 0.18 [0.09-0.35]) and the clinical error rate was reduced from 0.03 to 0.01 in the intervention ward (OR 0.24 [0.07-0.83]). The cost analysis showed that the AMS increased the cost with 16,843 €. The cost-effectiveness ratio was estimated at 2.60 € per avoided administration error, 2.91 € per avoided procedural error and 19.38 € per avoided clinical error. **CONCLUSIONS:** The automated medication system was effective in reducing the error rate in the medication administration process at a higher cost. The cost-effectiveness analysis showed that the automated medication system was associated with affordable cost-effectiveness rates.

#### PHS127

##### ECONOMIC BURDEN OF VARICELLA IN CHILDREN IN POLAND, 2011-2015

Wysocki J<sup>1</sup>, Malecka I<sup>1</sup>, Stryczynska-Kazubska J<sup>1</sup>, Rampakakis E<sup>2</sup>, Yang K<sup>3</sup>, Kuter B J<sup>3</sup>, Wolfson LJ<sup>3</sup>

<sup>1</sup>Poznan University of Medical Sciences, Poznan, Poland, <sup>2</sup>JSS Medical Research, Saint-Laurent, QC, Canada, <sup>3</sup>Merck & Co., Inc., Kenilworth, NJ, USA

**OBJECTIVES:** Despite the availability of safe and effective vaccines to prevent varicella, and the documented effectiveness of universal varicella vaccination (UVV) programmes, Poland's Immunization Programme does not recommend the routine use of varicella vaccines, except in certain high-risk individuals. As in other countries, one reason for the absence of UVV may be a lack of understanding of the clinical and economic burden of disease; the objective of this study was to evaluate that burden. **METHODS:** This was a multicenter retrospective

chart review study of patients aged 1-12 years with a primary varicella diagnosis between 2011 and 2015. Healthcare resource utilization (HCRU) associated with varicella, unit costs, and work loss were used to estimate direct and indirect costs. All costs are presented in 2015 Polish Zloty (PLN) / Euros (€). **RESULTS:** 150 children with varicella were included (75 outpatients, 75 inpatients), with a mean age of 3.9 (SD: 2.6) and 4.2 (SD: 2.3) years, respectively. One or more complications were experienced by 14.7% of outpatients and 82.7% of inpatients, the most common being skin and soft tissue infections, dehydration, pneumonia, and cerebellitis. HCRU estimates included use of over-the-counter (OTC) medications (80.0% outpatients, 81.3% inpatients), prescription medications (80.0% outpatients, 93.3% inpatients), tests/procedures (0.0% outpatients, 69.3% inpatients), and consultation with allied health professionals (0.0% outpatients, 24.0% inpatients). The average duration of hospital stay was 4.7 (95% CI: 4.1, 5.3) days for inpatients. The total combined direct and indirect cost per varicella case was 5013.3 PLN / € 1,198.1, for inpatients and 1027.2 PLN/ € 245.5, for outpatients. The overall annual cost of varicella in Poland for children aged 1-15 years in 2015 was estimated at 177,655,759.6 PLN/€ 42,458,716.0. **CONCLUSIONS:** Varicella is associated with substantial clinical burden in Poland, resulting in the utilization of a significant amount of healthcare resources.

#### PHS128

##### BUDGET IMPACT ANALYSIS OF INTRODUCING PHARMACIST-MANAGED WARFARIN SERVICE IN THE REPUBLIC OF SERBIA

Stojkovic T, Bogavac-Stanojevic N, Marinkovic V, Lalic D

University of Belgrade-Faculty of Pharmacy, Belgrade, Serbia

**OBJECTIVES:** A Pharmacist-Managed Warfarin Service (PMWS) is perceived as an efficient method for improving anticoagulation control and decreasing the rate of bleeding, thus reducing overall healthcare costs. What this study aims to assess is a five-year budget impact of providing PMWS instead of Usual Medical Care (UMC) to patients on warfarin at the secondary/tertiary level of healthcare facilities in Serbia. **METHODS:** A budget impact analysis was performed from the payer's perspective (National Health Insurance Fund-NHIF), over a five-year time horizon. A reference scenario (UMC) and a new one (PMWS) were defined for a cohort of 18,067 insured patients taking warfarin, with the pre-assumed annual population growth rate of 20%, according to NHIF database. Direct medical costs included the acquisition costs of warfarin, blood products and drugs for anticoagulation reversal, as well as hospitalization and monitoring. The expected values of annual therapy were based on the probabilities of patient being well-controlled or hypercoagulated, without any symptoms or with minor/major bleeding (pre-assumed incidence of the adverse events was once in a year, during 10 days). **RESULTS:** The projected net cost savings have amounted to € 55,317, € 66,379, € 79,655, € 95,589 and € 114,704 for 2016, 2017, 2018, 2019 and 2020, respectively. Consequently, the total saving of € 411,644 could be achieved if PMWS was implemented, over a five-year period (2016-2020), with a total budget reduction of 4.15%. The major economic benefits were attributed to the decrease of hospitalization expenditures in case of PMWS, related to the reduction of bleeding rates. **CONCLUSIONS:** Provision of PMWS instead of UMC to patients on warfarin could result in substantial net budget savings, due to improved both clinical and economic outcomes. Accordingly, this pharmaceutical service has much to recommend it for the implementation in the healthcare system of Serbia in the future.

#### PHS129

##### EVALUATION OF THE ECONOMIC IMPACT OF FERRIC CARBOXYMALTOSE USE FOR THE FRENCH NATIONAL HEALTH INSURANCE AND THE FRENCH HOSPITALS ORGANIZATION

Champs F<sup>1</sup>, Augry R<sup>1</sup>, Bourguignon S<sup>1</sup>, Degraat-Théas A<sup>2</sup>, Paubel P<sup>3</sup>

<sup>1</sup>STRATEGIQUE SANTE, Evry, France, <sup>2</sup>Law and health economics department, Faculty of Pharmacy, Paris, France, <sup>3</sup>General Agency of Equipment and Health Products (AGEPS), Assistance Publique-Hôpitaux de Paris (AP-HP), Paris, France

**OBJECTIVES:** Iron deficiency is the main cause of anemia. When the iron oral preparations are not effective or cannot be used, iron deficiency can be treated with iron sucrose or ferric carboxymaltose. The objective of this study is to investigate the economic impact of ferric carboxymaltose compared to iron sucrose from the French health insurance perspective. This study will provide some elements of answers to improve the management of iron deficiency. The hospital perspective will be studied in order to study the ferric carboxymaltose's organizational impact in a second step. **METHODS:** A budget impact model in a national insurance perspective was performed, comparing the costs of the care of patients under ferric carboxymaltose, with the costs of the reference strategies (iron sucrose). Direct medical costs are considered including hospital costs and transportation cost. These costs are taken from hospital activity database (PMSI 2015) and hospital cost (ENC 2013) database. **RESULTS:** The annual cost per patient with ferric carboxymaltose for insurance is about 2.5 times lower than the other iron sucrose products. The average cost per patient for administration of the iron dose (1424 mg) is 517.34 € for ferric carboxymaltose and 1293.35 € for iron sucrose products. This result is due to the decrease of hospitalization stay with the ferric carboxymaltose (two hospitalizations for ferric carboxymaltose and five for iron sucrose). The recommended dosage is the main driver of economic impact. Determinist sensitivity analyses are performed to explain cost drivers. **CONCLUSIONS:** Ferric carboxymaltose generates a significant cost decrease for the health insurance. A hospital perspective will be also performed to take into account organizational impact.

#### PHS130

##### SEVERE SEPSIS IN ADULTS: IMPACT OF DIAGNOSTIC CODING ON HOSPITAL RESOURCE UTILIZATION

Bouza C, Lopez-Cuadrado T, Amate-Blanco JM

Instituto de Salud Carlos III, Madrid, Spain