

son cohorts. After applying a 1:1 matching, a total of 123,356 patients were matched from each cohort, with well-balanced baseline characteristics. COPD patients had higher health care utilization, including Medicare carrier (98.1% vs. 70.1%), Durable Medical Equipment (DME, 37.4% vs. 15.8%) and Home Health Agency (HHA, 17.2% vs. 4.6%) claims, outpatient visits (73.9% vs. 41.7%) and inpatient (32.5% vs. 6.8%), skilled nursing facility (SNF, 10.0% vs. 2.2%) and hospice admissions (1.2% vs. 0.6%) and prescription drug claims (53.4% vs. 49.8%), resulting in higher health care costs for Medicare carrier (\$3,391 vs. \$1,313), DME (\$413 vs. \$97), HHA (\$923 vs. \$228), outpatient (\$10,110 vs. \$3,514), inpatient (\$5,983 vs. 1,045), SNF (\$1,982 vs. \$368), hospice (\$304 vs. \$143), pharmacy (\$1,180 vs. \$692) and total costs (\$24,288 vs. \$7,399) ( $p < 0.0001$ ). **CONCLUSIONS:** COPD patients are associated with high economic burden and health care utilization.

#### PRS28

##### ESTIMATION OF THE COST OF CHILDHOOD ASTHMA IN TURKEY

Sekerel B<sup>1</sup>, Malhan S<sup>2</sup>

<sup>1</sup>Hacettepe University, Ankara, Turkey, <sup>2</sup>Baskent University, Ankara, Turkey

**OBJECTIVES:** Asthma is the most common chronic disease in childhood, reduces the quality of life of children and their families, and produces high social and health care costs. The aim of this study was to estimate the direct cost of pediatric asthma in Turkey and to examine its variability depending on asthma control level. **METHODS:** The clinical pathway for childhood asthma was designed by and based on the data from the available Turkish literature. Unavailable data was collected by the expert's clinical view. To calculate direct costs, the medical management of childhood asthma estimated using 'cost-of-illness' methodology for one year per child. All costs were calculated from the health care payer perspective. The costs were covered hospitalizations, physician visits, diagnostic tests, medications and co morbid diseases. **RESULTS:** According to the recent studies, the controlled patient was 60%, partial controlled patient was 25%, and uncontrolled patient was 15% in Turkey. The cost of asthma calculation was based on weight of control. The mean annual cost per patient with controlled asthma is 542.97€, partial controlled asthma 714.52€ and uncontrolled asthma 1047.86€. Hospitalizations, physician visits, diagnostic tests, co morbid diseases costs and medication costs estimated 4%, 21%, 7%, 27%, 40% of total costs for controlled patient, 27%, 16%, 5%, 21%, 31% of total costs for partial controlled patient and 50%, 11%, 4%, 14%, 21% for uncontrolled patient respectively. **CONCLUSIONS:** The direct cost of pediatric asthma in Turkey increases depending on disease control level along with different spectrum of item distributions. To increase the utility and effectiveness of health care system, the findings of this evaluation may guide to construct future policies.

#### PRS29

##### COST OF A PULMONARY ARTERIAL HYPERTENSION-RELATED HOSPITALIZATION IN BELGIUM

Chevalier P<sup>1</sup>, De Beule J<sup>2</sup>, Lamotte M<sup>1</sup>, Hunsche E<sup>3</sup>, Régulier E<sup>3</sup>

<sup>1</sup>IMS Health HEOR, Vilvoorde, Belgium, <sup>2</sup>Actelion Pharmaceuticals Belgium NV, Mechelen, Belgium, <sup>3</sup>Actelion Pharmaceuticals Ltd., Allschwil, Switzerland

**OBJECTIVES:** Pulmonary arterial hypertension (PAH) is a rare disease, for which only scarce health care cost data is available in Europe. The progressive nature of the disease often requires hospitalization, the costs of which are currently unknown in Belgium, mainly due to the low number of patients affected. The objective of this research was to assess the cost and length of stay (LOS) of a PAH-related hospitalization likely related to disease worsening in Belgium. **METHODS:** A retrospective database analysis was performed using the IMS hospital disease database from 2009 to 2011, covering 20% (2010/2011) to 34% (2009) of the hospital beds in Belgium. Data on adult patients, who were either hospitalized with a primary diagnosis of primary pulmonary hypertension (PH) (ICD-9-CM code 416.0) OR were receiving  $\geq 1$  medication indicated for PAH, was extracted. To ensure hospitalizations were likely related to disease worsening and not to planned procedures or routine visits, only unscheduled hospitalizations of at least 2 days were included in the analysis. Hospitalizations were excluded if primary co-diagnoses were suggestive of a non-PAH-related reason for the admission. Total hospitalization costs, including hotel, drugs, procedure costs (extrapolated to 2013), and length of stay (LOS) were analyzed with descriptive statistics. **RESULTS:** 35 hospitalizations were included into the study. Patients experiencing these admissions were mainly female (71.4%), which is in line with the known female-male ratio (2-1) for this rare disease. Mean (SD) hospitalization cost was €20,229 (9,399), including €4,396 (9,502) drug, €8,499 (8,999) hotel, and €7,334 (12,386) procedure costs. Average LOS was 17.7 $\pm$ 16.8 days. **CONCLUSIONS:** Long durations and high incurred costs for PAH-related hospitalizations reveal the severe morbidity, health care, and patient burden of PAH in Belgium.

#### PRS30

##### THE COST BURDEN OF COMMUNITY-ACQUIRED PNEUMONIA IN RUSSIA IN ADULTS OF 50 AND OLDER: A REGIONAL STUDY AND NATIONAL ESTIMATES

Samyshkin Y<sup>1</sup>, Roberts CS<sup>2</sup>, Koroleva N<sup>3</sup>, Rodionov A<sup>4</sup>

<sup>1</sup>IMS Health, London, UK, <sup>2</sup>Pfizer Inc., New York, NY, USA, <sup>3</sup>Sechenov Moscow Medical University, Moscow, Russia, <sup>4</sup>Tver State Medical Academy, Tver, Russia

**OBJECTIVES:** Community-acquired pneumonia (CAP) represents a considerable burden in Russia. We assessed cost of CAP in Russia to characterize disease burden in Russian adults of age 50 and older. **METHODS:** We conducted a retrospective chart review in a central Russian region of Tver for samples of 900 patients treated in inpatient and outpatient settings, and extrapolated data nationally. All patients were 50 years of age and represented new cases of CAP. Data were collected on demographics, comorbidities, and employment. The cost was estimated from the public payer perspective, with a productivity loss in patients below retirement age. **RESULTS:** Cost of treatment was similar across age-and-risk groups in hospital and in outpatient settings. The cost of an outpatient episode was estimated far all risk groups at RR2176 (\$69), ranging from RR1,939 (\$61) to RR2537 (-\$80) for age groups 50-64 and 75-84 respectively; the cost of episode for low-risk patients was RR1737 (\$55), and

for moderate-risk RR2378 (\$75) for all ages. Average reimbursement rate was RR2,000 (\$63) per outpatient episode. The average cost of hospitalization was RR20,870 (\$655/n=500), RR20,925 (\$657/n=125) for low-risk, RR20,947 (\$657/n=364) for moderate-risk, and RR17,684 (\$554/n=11) for high-risk patients; with 60%-80% of patients with CAP hospitalized and the estimated number of CAP patients of age 50 and older in Tver 3,249, the annual cost of CAP to payer is RR53,448,423 (-\$1.7million); the national estimates of cost of CAP in senior adults was \$124million. Employed patients comprise 12.8% and 18.3% among the inpatient and outpatient cases, respectively, and days lost from work per employed patient was 8.0 (inpatient) and 7.0 (outpatient). **CONCLUSIONS:** CAP in adults is a significant cause of resource use and health care cost in Russia, inpatient care constitutes the majority of cost. Cost of treatment was similar across all age and risk groups.

#### PRS31

##### THE MEDICAL COSTS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN SOUTH KOREA

Yang DW<sup>1</sup>, Kim Y<sup>1</sup>, Jang S<sup>1</sup>, Hong JM<sup>1</sup>, Yi J<sup>1</sup>, Kim IS<sup>1</sup>, Yang BM<sup>1</sup>, Lee SW<sup>2</sup>, Kim C<sup>3</sup>, Rhee CK<sup>4</sup>

<sup>1</sup>Seoul National University, Seoul, South Korea, <sup>2</sup>Asan Medical Center, University of Ulsan, Seoul, South Korea, <sup>3</sup>National Health Insurance System Ilsan Hospital, Goyang, South Korea, <sup>4</sup>Seoul St. Mary's Hospital, The Catholic University of Korea, Seoul, South Korea

**OBJECTIVES:** The aim of this study is to investigate the medical costs of COPD patients in South Korea. **METHODS:** We enrolled 300 COPD patients who had been treated and followed up for more than one year in the three hospitals from 2012 to 2013. The hospital electronic database was used to obtain medical costs and the medical records were reviewed by physicians (respiratory specialists) to assess clinical characteristics. We calculated annual maintenance costs per-patient according to disease severity, except the costs which were related to COPD exacerbation. The costs of COPD exacerbation per-case was calculated and divided into severe-exacerbation (hospitalization and emergency visit) costs and non-severe-exacerbation (outpatient visit) costs. **RESULTS:** The annual maintenance costs per-patient was KRW 351,599, KRW 401,068, KRW 573,010 and KRW 999,506 for mild, moderate, severe and very-severe according to GOLD criterion, respectively. In case of the COPD exacerbation, the costs per-case for each non-severe exacerbation and severe-exacerbation was KRW 163,495 and KRW 2,765,086. **CONCLUSIONS:** The severity of disease and exacerbation of COPD have a substantial impact on the medical costs of COPD patients. Improvement of lung function and reduction of occurrence of COPD exacerbation will be beneficial for the reduction of the health care expenditures.

#### PRS32

##### THE DIRECT COST OF ASTHMA IN TURKEY

Turktas H<sup>1</sup>, Bavbek S<sup>2</sup>, Malhan S<sup>3</sup>

<sup>1</sup>Gazi University, Ankara, Turkey, <sup>2</sup>Ankara University, Ankara, Turkey, <sup>3</sup>Baskent University, Ankara, Turkey

**OBJECTIVES:** Asthma is one of the mostly seen chronic illnesses in Turkey, yet there are limited studies on cost of asthma in our country. In addition they were based on a central database and weight of disease. The aim of this study was estimating the nationwide cost of managing asthma and examining its variability depending on asthma control level. **METHODS:** The clinical pathway for asthma was determined from the literature. Part of the data was collected from the expert's clinical view. To calculate the direct costs, the medical management of adult asthma was estimated using 'cost-of-illness' methodology for one year per patient. All costs were calculated according to payer perspective. The costs covered were physician visits, hospitalizations, diagnostic tests, medicine and comorbid disease. **RESULTS:** According to recent studies, the percentage of controlled, partially controlled and uncontrolled patients were 22%, 50%, and %28 respectively in Turkey. The cost of asthma calculation was based on weighted percentage of control. The mean annual cost per patient with controlled asthma was € 558,41, partially controlled asthma was € 594,86 and uncontrolled asthma was € 1040,63. Hospitalizations, physician visits, diagnostic tests, comorbidity and medication costs were estimated to be 4%, 11%, 11%, 28%, 46% for controlled patient, 10%, 11%, 10%, 43%, 26% for partially controlled patient and 48%, 6%, 6%, 25%, 15% for uncontrolled patient respectively. **CONCLUSIONS:** The cost of adult asthma in Turkey is very high and it significantly depends on disease control level. As expected, uncontrolled patient's cost is higher than that of controlled patient. Nationwide health policies such as education of patients and physicians, selecting the right treatment and smoking cessation strategies that target the effective control of asthma will play an important role in the reduction of the economic burden of disease.

#### PRS33

##### ECONOMIC BURDEN IN DIRECT COSTS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN RUSSIA

Krysanova V<sup>1</sup>, Krysanov I<sup>2</sup>

<sup>1</sup>I.M. Sechenov First Moscow State Medical University, Moscow, Russia, <sup>2</sup>Postgraduate Medical

Institute, Moscow National University of Food Production, Moscow, Russia

**OBJECTIVES:** COPD is one of the leading causes of morbidity and mortality worldwide and has a major burden on Russian's health care system. It's lead to frequent use of health care resources. The main aim of this study was to describe the direct costs for management of COPD patients with differing degrees of disease severity. **METHODS:** The methodology for cost of illness analysis was based on a previous Russian study (Avksenteva M. V. et al., 2010). One-year costs were identified by applying cost data to medical information obtained by medical statistical records from 2007. In this study were performed 2 variants of COPD costs. In 1<sup>st</sup> variant were used epidemiological data from 2007 and medical resources costs from 2014. In 2<sup>nd</sup> variant were used extrapolated epidemiological data and medical resources costs from 2014. Due to lack of actual data in this study was modeled situation - from 2007 to 2012 the overall incidence of adult increased by 12.5%. Medical resources included hospital stays, outpatient visits and ambulance service. **RESULTS:** The mean annual overall direct health care cost for 1<sup>st</sup> variant was estimated to be 54.6 billion rubles (\$1.6 billion), for 2<sup>nd</sup> variant was estimated to be 61.6 billion rubles (\$1.8 billion). The