

PR517
COSTS TO TREAT COMMUNITY-ACQUIRED PNEUMONIA EPISODES IN US ADULTS AGED 50 YEARS AND OLDER BY AGE AND RISK

Sato R¹, Strutton D¹, Phillips B², Griffiths S²

¹Pfizer Inc., Collegeville, PA, USA, ²Ingenix Consulting, Eden Prairie, MN, USA

OBJECTIVES: This retrospective study assessed the costs to treat community-acquired pneumonia (CAP) episodes by risk, age, and hospitalization in US adults aged ≥ 50 . **METHODS:** A multi-payer administrative claims database containing over 2 million lives aged ≥ 50 (800,000+ for aged ≥ 65) was used to identify CAP episodes between July 2006 and June 2007. An episode of pneumonia was defined as the period between the first and last pneumonia ICD-9 code with a chest x-ray claim. Episodes were also required to have a pre-post episode period free of pneumonia claims of at least 90 days. Patients who were hospitalized or institutionalized in the 2 weeks prior to the start of the episode were excluded. Episode costs included all-cause medical and pharmacy costs. Results were stratified by age, risk (high: immunocompromised; moderate: immunocompetent with chronic medical condition; low: immunocompetent without chronic medical condition), and whether or not an episode included hospitalization. **RESULTS:** There were 21,086 CAP episodes among individuals aged ≥ 50 with 29% resulting in hospitalization. Among those who were hospitalized, 48%, 37%, and 15% were from the low, moderate, and high risk groups, respectively. The mean cost of a hospitalized CAP episode for the low, moderate, and high risk groups was \$14,233, \$19,470, and \$27,032, respectively. For ages 50–64 years old, the mean cost of a hospitalized episode was \$16,606 compared with \$18,493 for age ≥ 65 years old. Costs of outpatient CAP episodes were substantially lower with a mean of \$1047, \$1241, and \$2055 for low, moderate, and high risk groups, respectively. **CONCLUSIONS:** The cost to treat CAP which requires hospitalization is high regardless of risk category or age. Almost half of the hospitalized CAP patients do not appear to have traditional risk factors for pneumonia suggesting the need for better treatment and prevention strategies.

PR518
ASSESSMENT OF THE CLINICAL AND ECONOMIC IMPACT OF AIR LEAKS DURING POST-OPERATIVE PULMONARY SURGERY

Nagel MP¹, Gemmen E², Smith BP³, Doyle J⁴, Garvert W²

¹Neomend, Inc., Irvine, CA, USA, ²Quintiles, Falls Church, VA, USA, ³Quintiles Consulting, Hawthorne, NY, USA, ⁴Quintiles Global Consulting, Hawthorne, NY, USA

OBJECTIVES: Estimate the clinical and economic impact to U.S. hospitals of air leaks during post-operative pulmonary surgery. **METHODS:** Analysis of the 2006 Nationwide Inpatient Sample (NIS) hospital database. ICD-9 diagnosis and procedure codes were identified by expert medical opinion and a certified coder. For all stays with pulmonary surgery, length of stay (LOS), total charges, and in-hospital mortality rates were compared between those stays including an air leak vs. those stays without an air leak. Unadjusted results were calculated using descriptive statistics (mean, median, frequencies, etc.) Adjusted results were calculated using multivariate regression analysis while controlling for age and gender. **RESULTS:** There were a total of 77,117 hospital inpatient stays with pulmonary surgery in 2006, 11,774 (15.3%) of which included air leak and 65,342 (84.7%) of which did not. Patients with pulmonary surgery stays including air leak were older than those patients without air leak (mean age = 61.5 yrs vs. 60.2 yrs; $p = 0.0002$), had a longer LOS on average (10.9 days vs. 7.4 days; $p < 0.0001$), had more total charges (\$67,554 vs. \$52,550; $p < 0.0001$) and were more likely to die during their stay (2.87% vs. 2.25%; $p = 0.0578$). After adjusting for differences in age and gender between the two groups, the incremental LOS, total charges and absolute risk of in-hospital mortality due to the presence of air leak is 3.54 days, \$14,926 and +12.20%, respectively. The total nationwide additional economic impact of having an air leak after pulmonary surgery, estimated by applying patient level adjusted charges to the incidence of air leak, is \$175.7 million. **CONCLUSIONS:** The clinical and economic impact to U.S. hospitals of air leaks during or following major pulmonary surgery is significant. The reduction or elimination of these air leaks could save considerable hospital resources, payer dollars and patient lives.

PR520
THE ECONOMIC BURDEN OF CHRONIC DISEASES IN ADULT US WORKERS IN TERMS OF MEDICAL EXPENDITURE AND LOST PRODUCTIVITY COSTS

Kwon JW¹, Choi IS¹, Qureshi Z¹, Suh K², McGuire M¹, Kim CM³

¹Rutgers University School of Pharmacy, Piscataway, NJ, USA, ²Rutgers University, East Brunswick, NJ, USA, ³Catholic University School of Medicine, Seoul, South Korea

OBJECTIVES: To estimate annual medical expenditure (ME) and lost productivity cost (PC) attributable to chronic diseases in working U.S. adults. **METHODS:** A cross-sectional design, using the 2003–2006 Medical Expenditure Panel Survey data was employed. We identified working adults who were 18–64 years old and classified them as having chronic diseases (arthritis, asthma, hypertension, hypercholesterolemia, or diabetes) or not. We excluded patients with malignancy, kidney dialysis, immunodeficiency, pregnancy, or BMI < 18.5 . MEs were estimated using a generalized linear model with log link function and gamma distribution. PC was calculated based on missed working days due to illness and average hourly wage, using a two-part model. Costs attributable to chronic diseases were estimated by differences between actual and expected cost in patients with chronic diseases, using a distribution of covariates obtained from all patients. Treatment costs were converted to 2008 U.S. dollars using price indices. **RESULTS:** Among the identified 54,843 working adults, a third (34%) had at least one of five chronic diseases. Patients with two or ≥ 3 chronic diseases accounted for 8.5% and 3.7%, respectively. The average ME in patients with chronic

diseases was significantly higher than individuals without those diseases (\$2997; 95%CI = \$2865–\$3129 vs. \$1021; 95%CI = \$911–\$1130). The average PC in these patients showed a similar trend (\$481; 95%CI = \$455–\$507 vs. \$236; 95%CI = \$219–\$253). Excess ME attributable to chronic diseases were estimated at \$1605 (95%CI: \$1501–\$1710) and excess PC at \$173 (95%CI \$172–\$ 174). ME and PC increased with an increase in concurrent chronic diseases, respectively. Among the chronic diseases, arthritis and diabetes were the largest contributors to additional economic burden. **CONCLUSIONS:** The presence of chronic diseases in working patients resulted in significantly higher ME and PC. The results highlight the additional economic burden attributable to chronic diseases in the working population and the need to allocate resources toward better management strategies for these diseases.

PR521
ANALYSIS OF CLINICAL EFFICACY AND DIRECT COSTS OF THE SPECIFIC IMMUNOTHERAPY IN POLAND—A THREE-YEAR RETROSPECTIVE STUDY

Jahnz-Roozyk KM, Targowski T, Przekora P

Military Institute of the Health Service, Warsaw, Poland

OBJECTIVES: The aim of the study was 1) To evaluate the clinical efficacy of specific allergen immunotherapy (SIT), and 2) To assess which patients have most benefits from SIT. **METHODS:** The investigations were carried out on the group of 120 patients (37 children, and 83 adults). The effects of SIT (subcutaneous, perennial, Allergopharma, Germany) were evaluated through the means of the rate of reduction of allergic symptoms and utilization of anti-allergic symptomatic drugs. The cost of drugs was based on the catalogue price lists. Linear regression models have been used for assessment of relationship between reduction of intensity of allergic symptoms and savings on symptomatic drugs. **RESULTS:** After 3 years of the SIT mean percentage of reduction of allergic symptoms and utilization of symptomatic drugs was about 80%. Mean savings on symptomatic treatment (PLN/EUR) (1EUR = 4PLN in 2009) were 664.5/166.1 (95%CI: 517.4/129.4–811.7/202.9) from social perspective and 274.3/68.5 (95%CI: 227.4/56.8–321.2/80.3) from the patient's perspective. The largest clinical improvement of allergic symptoms was observed in patients with combination of seasonal allergy ($r = 0.25$; $p = 0.01$), allergic rhinitis ($r = 0.21$; $p = 0.02$) and bronchial asthma ($r = 0.34$; $p = 0.0002$). Presence of bronchial asthma was also significantly related to the volume of savings on anti-allergic symptomatic treatment from the social ($r = 0.37$, $p = 0.0002$) and patient's ($r = 0.31$; $p = 0.003$) perspectives. **CONCLUSIONS:** SIT significantly decreases symptoms and anti-allergic drug intake. From social and patient's perspective, SIT in patients with asthma essentially reduces costs of symptom-relieving drugs. It can be a premise to consider to increase a level of reimbursement of SIT in this group of patients in Poland.

PR522
COST-BENEFIT ANALYSIS OF VARENICLINE VS. EXISTING SMOKING CESSATION STRATEGIES IN PREGNANT WOMEN

Barnard M, Price J

The University of Mississippi, University, MS, USA

OBJECTIVES: Despite well documented harm to both the mother and the fetus, maternal smoking during pregnancy continues to hover above 15%. While pharmaceutical interventions have been shown to be cost-effective in the general population, current treatment options are poorly understood, insufficiently utilized and insufficiently effective in pregnant women. No data regarding safety or efficacy of varenicline has been reported for this population. To determine if clinical study of varenicline for pregnant smokers is warranted, a cost-benefit analysis of varenicline compared to existing treatment modalities will determine if there is likely any cost-benefit associated with varenicline use in this population. **METHODS:** A decision analysis model was developed to evaluate from the payer's perspective the optimal treatment from the standpoint of cost versus benefit of potential treatment with varenicline compared to other smoking cessation treatment options in pregnant smokers. Outcomes included smoking cessation rates, cost of maternal and infant outcomes associated with smoking, and treatment costs. A sensitivity analysis was performed to determine the effects of variations in the success of treatment with varenicline. **RESULTS:** The analysis showed that bupropion is more cost-beneficial than the other treatments, with a net benefit of \$1086 per pregnant smoker who attempts to quit, compared with \$316 for usual care, \$550 for motivational interviewing, \$830 for NRT, and \$938 for varenicline. Sensitivity analyses indicate that at a 25% cessation rate, varenicline becomes the most cost-beneficial treatment option. **CONCLUSIONS:** From a payer's perspective and current knowledge of cessation rates with pregnant smokers, bupropion is more cost-beneficial smoking cessation intervention in pregnant women than existing treatment options. If pregnant smokers are more successful than non-pregnant smokers at quitting on varenicline, as they are with the other cessation treatments, it is likely that varenicline is the most cost-beneficial treatment and may warrant additional study in this population.

PR523
THE POTENTIAL COST IMPACT OF USING A PEG HYDROGEL SEALANT TO PREVENT AIR LEAKS AFTER LUNG RESECTION SURGERY IN THE UNITED KINGDOM

Minshall ME¹, Larkin MJ², Ott M³

¹Covidien, North Haven, CT, USA, ²PRMA Consulting, Fleet, UK, ³Covidien, Zurich, Switzerland

OBJECTIVES: Persistent air leaks after lung resection surgery often lead to increased complications including longer length of hospital stay and subsequent treatment costs.