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COST AND RESOURCE UTILIZATION OF RESPIRATORY SYNCYTIAL VIRUS (RSV) OR WINTER UNSPECIFIED BRONCHIOLITIS OR PNEUMONIA (UBP) HOSPITALIZATIONS DURING THE FIRST YEAR OF LIFE AMONG LATE PRETERM AND FULL-TERM INFANTSForbes ML¹, Hall CB², Jackson A³, Masaquel A⁴, Mahadevia PJ⁴¹Akron Children's Hospital, Akron, OH, USA, ²University of Rochester Medical School, Rochester, NY, USA, ³Milliman, Inc, Indianapolis, IN, USA, ⁴MedImmune, Inc., Gaithersburg, MD, USA

OBJECTIVES: To estimate the total costs and resource utilization of RSV or UBP hospitalizations among late preterm vs. full-term infants during their first year. **METHODS:** This retrospective cohort study examined the MarketScan® Commercial Claims and Encounters database from January 2003 to June 2007. First hospital admission with ICD-9 CM diagnosis codes for RSV (466.11, 480.1, 079.6) or UBP (466.19, 485, 486) during November-March were identified among infants <1 year old. Cohorts included 1) early preterm infants <33 weeks gestational age (wGA); and infants with chronic lung disease; 2) late preterm infants 33–36 wGA, and 3) full-term infants ≥37 wGA. The average costs of RSV and UBP hospitalizations, use of health care resources, and patient demographics were examined. Descriptive analyses included a Wilcoxon test for continuous variables and a two-sided test t-test for categorical variables (alpha = 0.05). **RESULTS:** Early, late, and full-term infants had 46, 149 and 1983 RSV hospitalizations, respectively. Across cohorts, infants were an average of 3–4 months of age and mostly males. RSV hospitalization costs were significantly higher among early preterm (\$13,876, SD = \$14,453) (p < 0.01) and late preterm infants (\$18,403, SD = \$31,792) (p < 0.001) compared to full-term infants (\$9,014, SD = \$26,769). Late preterm infants had a significantly higher mean length of hospital stay (4.9 vs. 3.2 days), intensive care unit admission (22% vs. 9.6%), and comorbid conditions (10% vs. 1.3%) compared to full-term infants (each p < 0.001). Early and late preterm compared to full-term infants also had higher UBP hospitalization costs and resource use. **CONCLUSIONS:** Since about three-fourths of all prematurely born infants are late preterm infants, the significantly higher RSV-associated costs of late preterm infants compared to full-term infants impose a major health care burden. Analysis of health care costs at birth and through the first year of life may help evaluate strategies to prevent RSV among late preterm infants.

PRS24

INCREMENTAL ASTHMA-RELATED EXPENDITURES ASSOCIATED WITH HIGH UTILIZATION OF SHORT ACTING β-AGONISTS AMONG A COMMERCIALY INSURED ASTHMATIC POPULATION IN THE U.S.Kamble S¹, Blanchette CM², Silver H², Petersen H², Meddis D³, Gutierrez B³¹University of North Carolina at Charlotte, Charlotte, NC, USA, ²Lovelace Respiratory Research Institute, Albuquerque, NM, USA, ³AstraZeneca, Wilmington, DE, USA

OBJECTIVES: To determine the incremental direct asthma-related expenditures associated with six or more SABA canisters per year in a commercially insured asthmatic population in the US. **METHODS:** A retrospective cohort study was conducted for asthmatic patients (aged 6–56 years; n = 93,604) with two-year continuous enrollment in the PHARMetrics database between July 2003-June 2007, >1 hospitalization/emergency department (ED) or 2 outpatient claims with an International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) code 493.XX and >1 asthma medication claim in each of the two years of observation. Patients with COPD and diseases associated with chronic oral steroid use were excluded. SABA utilization was converted to canister-count/year and categorized into 0–5 and >6. Generalized linear model (GLM) with log-link and a gamma variance function was used to estimate the incremental total expenditures, medical and pharmaceutical expenditures associated with use of >6 canisters per year. Covariates included age, sex, region, post-index asthma controller use, several first-year severity measures and comorbidities. Age stratified analysis (adults: age 18–56 yrs; pediatrics: age 6–17 yrs) using the GLM technique was also conducted to estimate the incremental expenditures. **RESULTS:** 80,353 patients (85.7%) used 0–5 canisters per year whereas 13,251 patients (14.1%) used >6 canisters per year. Patients with asthma who used >6 SABA canisters per year had 41.2% higher total asthma-related expenditures (95% CI: 1.39 to 1.43), 33.1% higher asthma-related medical expenditures (95% CI: 1.29 to 1.37), and 39.1% higher asthma-related pharmaceutical expenditures (95% CI: 1.37 to 1.41) than those who used 0–5 SABA canisters per year after controlling for covariates. Results were similar for both adult and pediatric asthma populations. **CONCLUSIONS:** The use of six or more SABA canisters per year is associated with increased asthma related expenditures, suggesting a need for re-examining asthma management in such high-risk patients with asthma.

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THE FINANCIAL IMPACT OF COMPUTER SYSTEMS-BASED APPROACHES TO REDUCING REPEAT DRUG EXPOSURE IN PATIENTS WITH KNOWN DRUG ALLERGIESHuang YF¹, Lin YM², Liu HP², Chien HY²¹Taipei Medical University – Shuang Ho Hospital, Jhonghe, Taiwan, ²Taipei Medical University – Shuang Ho Hospital, Taipei, Taiwan

OBJECTIVES: There is increasing cognition internationally on reducing the high disease burden resulting from errors in medication use. Repeat exposure to drugs to which patients have a known allergy has been classified as a repeatedly identified error. These repeat reactions should therefore be preventable. The objective of this study was to implement computer systems to reducing the risk of reexposure and to evaluate the financial impact of these approaches in Taipei Medical University-Shuang

Ho Hospital. **METHODS:** We use computerized physician order entry systems incorporating hazard messages that alert or block health care professionals to patients' allergies. The computer systems can store patient allergy information centrally and ensure it is up-to-date and readily available in different settings. Besides the computer systems can automatically transfer every suspected drug into the Anatomical Therapeutic Chemical codes that will be recognized by the system more effectively. This in turn leads to completely block repeat drug exposure in patients with known drug allergies. The determination of financial impact was expressed by cost avoidance per year in Taiwan. **RESULTS:** The data from our studies suggest that about 10% of medication errors are due to patients receiving a medication to which they were already known to be allergic. This can translate into between 6,900 and 13,800 episodes per year in Taiwan. The estimated cost avoidance will be as high as NT 34.5 million to 69 million per year (based on the assumption that cost of allergy treatment is about NT 5,000) through this CPOE in combination with allergy warning and blocking system. **CONCLUSIONS:** There is an increasing body of epidemiologic work indicating that adverse drug reactions caused by known drug allergies are relatively common and potentially preventable. The implementation of computer systems-based approaches has the potential to improve medication safety and reduce the expenditure of medical expenses.

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AN ECONOMIC EVALUATION OF GRAZAX FOR THE TREATMENT OF GRASS POLLEN INDUCED RHINOCONJUNCTIVITIS IN CHILDRENWhitehead S¹, Taylor MJ¹, Christensen J²¹University of York, York, UK, ²ALK-Abelló, Hørsholm, Denmark

OBJECTIVES: To determine the cost-effectiveness of the grass allergen immunotherapy tablet (AIT), Grazax (ALK-Abelló A/S) for the treatment of grass pollen induced rhinoconjunctivitis in children either with or without co-existing asthma. The analysis compares treatment using Grazax in combination with symptomatic medications, to using symptomatic medications alone in terms of costs and health outcomes. **METHODS:** The model uses a decision tree structure to evaluate two grass pollen induced rhinoconjunctivitis treatments for a cohort of 1000 hypothetical children. The analysis is performed from the perspective of the payer, including only direct costs in the base case. Treatment is modelled in terms of the management of symptoms, reduction in resource use and averting the development of allergic asthma. The evaluation is UK-based and models both short- and long-term effects. Several data inputs, such as resource use and probabilities, are drawn from the paediatric GT-12 clinical trial and the Preventive Allergy Treatment (PAT) study. Cost data are sourced from established published sources and utility values are derived using GT-12 trial data and a published study. **RESULTS:** Treatment with Grazax in combination with symptomatic medications compared to treatment with symptomatic medications alone generates a (discounted) incremental cost per QALY gained of 10,007GBP (\$14,578, €11,034), for the base case time horizon of nine years. The QALY gains are a result of increased quality of life related to effective symptom management. The sensitivity analysis carried out around key parameters (e.g. unit costs, medication costs, probabilities, utilities) shows that the results estimated by the model remain robust. **CONCLUSIONS:** Grazax has been shown to improve patient outcomes, at an increased cost. The resulting incremental cost per QALY falls below commonly accepted willingness to pay thresholds. Therefore, Grazax is a cost-effective option for the treatment of grass pollen induced rhinoconjunctivitis in the UK paediatric population.

PRS27

ASTHMA-RELATED PRODUCTIVITY LOSSES IN ALBERTA, CANADAThanh NX¹, Ohinmaa A², Yan C¹¹Institute of Health Economics, Edmonton, AB, Canada, ²University of Alberta, Edmonton, AB, Canada

OBJECTIVES: To estimate the number and cost of asthma-related productivity loss days due to absenteeism and presenteeism in Alberta in 2005. **METHODS:** Using data from the 2005 Canadian Community Health Survey, this study focused on people of working age (18–64 years). Total asthma-related disability days, including in-bed days and activity-restricted days, were estimated by multiplying the difference in the means of total disability days between asthmatics and non-asthmatics adjusted for socio-demographic characteristics and other health conditions by a multivariate linear regression, with the number of asthmatics in the population. Number of productivity loss days was a sum between the number of in-bed days (absenteeism) and the number of activity-restricted days multiplied by a reduction in functional level (presenteeism), adjusted for 5 working days per week. Other data from Alberta or Canadian published literature, such as a reduction in functional level of 20%–30%, a labour participation rate of 73%, and an average wage of \$158 per day in 2005, were also used for analyses. **RESULTS:** The prevalence of asthma was estimated at 8.5% among approximately 2.1 million people of working age in Alberta in 2005. The difference in the means of total disability days between asthmatics and non-asthmatics was 0.487 (95%CI: 0.286–0.666) in a period of two weeks or 12.7 (7.5–17.9) in one year. With the reduction in functional level of 20%–30%, the number of asthma-related productivity loss days was estimated from 442 (259–624) to 533 (313–753) thousand, respectively. The corresponding cost was from \$70 (\$41–\$99) to \$84 (\$49–\$119) million. Of these, the presenteeism accounted for 42% to 52%. **CONCLUSIONS:** An improvement in controlling asthma could have a significant economic impact in Alberta. Presenteeism plays an important role in asthma-related productivity losses and therefore employers should not only pay attention to absenteeism, but also to presenteeism, to minimize productivity loss.