modifier, mast cell stabilizer, xanthine derivative, or a long acting beta agonist); or one prescription for an asthma controller and one or more prescriptions for a short acting beta-agonist. Patients also had to be full year members of the MCO. Patients with a diagnosis of chronic obstructive lung disease were excluded. **RESULTS:** A total of 351,140 persons were continuously enrolled in the MCO during 1999. A total of 8,051 persons were identified as having asthma (2.3% of the MCO enrollees), with 43% being male. Persons under 18 years of age comprised 28.8% of persons with asthma. Median pharmacy costs were $472, median medical costs were $483, and median total health care costs were $1199 for this population. **CONCLUSIONS:** Asthma appears to affect a significant number of enrollees within this MCO, with persons less than 18 years of age representing almost 29% of the treated patients. Health care costs in persons with asthma appears to be substantial.

PAR17

PATIENT SATISFACTION WITH NON-SEDATING ANTIHISTAMINES

Sahu S, Millard R
Harris Interactive, Rochester, NY, USA

OBJECTIVES: The objective of this study is to determine the factors that influence satisfaction with non-sedating antihistamines (NSA) among people who suffer from allergies/hay fever. **METHODS:** An online survey was conducted in September, 2000 on respondents who had been told by a health care professional that they suffer from allergies/hay fever and were recently (within 12 months) prescribed one of three NSAs to relieve their symptoms. The sample was weighted to ensure the generalizability of the results. Satisfaction was measured according to the medication's ability to relieve side effects and control symptoms from allergies/hay fever. A total of 4,081 respondents were included in the analysis. **RESULTS:** (1) The mean satisfaction score for the first time users (defined as never having taken any medication for allergies/hay fever) was higher than those who had used some medication in the past ($p < .01$) (2) Of the respondents who had a specific choice of medication in mind, those who received their first choice medication had a higher satisfaction score than those who did not ($p < .01$). (3) The respondents who discussed their medication jointly with their physician had a higher satisfaction score than those whose doctor chose their medication for them ($p < .01$). (4) Respondents who were not taking any over-the-counter (OTC) medications reported higher satisfaction scores than those who supplemented their NSA with over-the-counter medications ($p < .01$). (5) Finally, respondents who had never requested a prescription after seeing an advertisement for any medication had a higher satisfaction score than those who did. ($p < .01$) **CONCLUSIONS:** The data provides evidence to suggest that past knowledge or experience with NSAs, patient preference, and patient involvement in the treatment decision-making process all play a role in determining satisfaction with NSAs. Furthermore, both over-the-counter medication usage and direct-to-consumer advertising are likely to influence how satisfied people are with their NSA.

PAR18

COSTS OF TREATING COPD IN ITALY: A BURDEN OF ILLNESS STUDY

Bonzanini A, Avossa R, Scipioni E, Gianfrate F
GlaxoSmithKline, Verona, Italy

INTRODUCTION: Despite the high prevalence, morbidity and mortality of COPD, remarkably little is known about its impact on health care costs and utilization of services. Information about health care utilization and costs among patients with Chronic Obstructive Pulmonary Disease (COPD) is needed to improve care and for appropriate allocation of resources. **OBJECTIVE:** The purpose of this study was to quantify the burden of illness in Italy, in terms of both medical consumption and lost productivity associated with COPD. **METHODS:** *Design*: In 1998 an epidemiological study was conducted in Italy. Retrospectively, from a community perspective, we quantified COPD's costs related both with health care consumption and lost of productivity and/or school days. *Main Outcomes Measures*: The main goal of the present study was to evaluate economic outcomes in a cohort of 355,000 patients with current diagnosis of COPD. **RESULTS:** As reported in previous studies, prevalence rate for COPD in Italy is about 4,6% (2,637,000 subjects). Among all COPD patients, 42,5% suffers from mild disease while 56,7% is affected by moderate-severe COPD, on the basis of Flow Expiratory Value (FEV1) % of predicted criteria. The total cost of COPD we have quoted is the sum of direct and indirect costs: it is worth US$18 billion, equal to US$6,843 average/patient/year. We have not included intangible costs because they cannot be quantified correctly as yet. **CONCLUSIONS:** COPD is associated with significant both direct and indirect costs. Previous studies reported that prevalence figures for COPD based on recorded diagnoses are underestimated. Notwithstanding, data from our study suggest that when patients seek medical advice they were correctly diagnosed and treated. Education of patients will allow them to take control of their disease and of costs related to COPD.

PAR19

IMPACT OF THE ADDITION OF SALMETEROL TO THE TREATMENT OF ASTHMA PATIENTS IN A MEDICAID FEE-FOR-SERVICE POPULATION

Klaurens LM, Dodd MA, Gupchup GV, Kelly HW, Hollarbush J
The University of New Mexico, Albuquerque, NM, USA

OBJECTIVE: Salmeterol, a long acting beta-2 agonist, improves lung function and symptom control with twice daily dosing in moderate-to-severe asthmatics. This in-

vestigation was performed to determine whether the introduction of salmeterol to moderate-to-severe asthmatics in a Medicaid fee-for-service population reduces the overall asthma related health care expenditures. **METHODS:** The New Mexico Medicaid fee-for-service claims database was searched between 1/1/94 and 12/31/98 to identify both a salmeterol and control group. The inclusion criteria for the salmeterol group were: patients receiving salmeterol, who were 66% compliant with salmeterol therapy, had a diagnosis of asthma (ICD-9: 493.0, 493.1, 493.9), were 13 years of age or older, did not have a diagnosis of COPD (ICD-9: 496.x) and must have been Medicaid eligible for 2 consecutive years. In addition to the above criteria for the salmeterol group, to be included in the control group, patients must not have received salmeterol between 4/12/95 and 4/12/97 (around the median start date of salmeterol, 4/12/96), and in order to match for severity must have received other asthma maintenance medications. Patients meeting these criteria for the salmeterol and control groups were 57 and 58, respectively. ANCOVA were performed to compare costs between the two groups controlling for baseline costs. Average per patient benefit-cost ratios were calculated by dividing total cost savings by increase in medication costs for both groups. **RESULTS:** No significant difference existed among average per patient total health care expenditures between the salmeterol and control groups ($2266 and $1955, respectively). Interestingly, in the salmeterol group, total medication costs increased significantly ($t = -7.895$, $p = 0.000$) while total health care costs decreased, although not significantly. The average per patient benefit-cost ratio for the salmeterol group was 0.061 ($41/$668). **CONCLUSION:** Introduction of salmeterol in the New Mexico Medicaid fee-for-service population did not significantly reduce total asthma related health care costs.

PAR20

EFFECTIVENESS OF COMPLIANCE ON HEALTH CARE RESOURCE USE IN ASTHMA PATIENTS TREATED WITH MONTELUKAST VS. INHALED CORTICOSTEROIDS

Kutikova L[1], Bowman L[2], Morris L[3]
[1]University of Tennessee Health Science Center, Memphis, TN, USA; [2]Eli Lilly and Company, Indianapolis, IN, USA; [3]IMS Health, Plymouth Meeting, PA, USA

OBJECTIVES: To compare effectiveness of compliance on health care utilization between montelukast and standard therapy (inhaled corticosteroid—ICS) patients. Indicators for health care resource use include drug use, ER visits, and total charges. **METHODS:** Retrospective cohort analysis using LifeLink employer claims database of 1.6 million Americans. ANOVA models examined health care resource use of montelukast and ICS patients in six months prior (pre-period) and six month following (post-period) new treatment of interest adjusting for age, gender, region, plan type, and prescriber specialty. **RESULTS:** The study cohort consisted of 3,775 montelukast patients and 7,331 ICS patients. Average compliance, defined as medication possession ratio, of montelukast patients (63%) was significantly greater ($p = 0.001$) than that of ICS patients (31%). Montelukast patients were more likely to receive short-acting beta-agonist therapy in pre-period than ICS patients ($p = 0.001$), which suggests more severe patients in montelukast group, but there was no significant difference between two groups in post-period ($p = 0.854$). Among patients with concomitant methylxanthine therapy, montelukast patients had more days of methylxanthine therapy than ICS in pre-period ($p < 0.001$), but there was no significant difference in post-period ($p = 0.130$). For patients with at least one asthma-related ER visit, montelukast patients had more ER visits per patient than ICS patients in pre-period ($p = 0.010$), but no significant difference was noted in post-period ($p = 0.325$). Average total charges for montelukast were higher than for ICS patients in both pre-period ($p < 0.001$) and post-period ($p < 0.001$). **CONCLUSIONS:** Compliance with montelukast treatment was markedly better than with ICS therapy. Initially, montelukast patients were higher resource users than ICS patients. During six months treatment with montelukast, some health care resources used decreased to the level of ICS patients. Results suggest that markedly improved compliance of montelukast decreased asthma-related health care utilization, however total charges for montelukast patients remained higher than for ICS patients.

PAR21

LEVALBUTEROL USE IS ASSOCIATED WITH DECREASED HEALTH CARE COSTS IN PATIENTS WITH MORE SEVERE ASTHMA

Huse D[1], McLoney A[2], Yeager B[3], Cerasoli F[3]
[1]PharMetrics, Inc, Watertown, MA, USA; [2]NDC Health Information Services, Phoenix, AZ, USA; [3]Sepracor, Inc, Marlborough, MA, USA

Preliminary pharmacoeconomic analyses suggest that levalbuterol (LEV) therapy is associated with decreased outpatient asthma health care costs. **OBJECTIVE:** Examine treatment costs in asthma patients stratified by the number of prescribed controller medications (CM), an index of asthma severity. **METHODS:** Claims data on patients prescribed LEV and RAC were obtained from the PharMetrics Integrated Outcomes Database. Age- and sex-matched samples of patients initiating therapy with LEV or RAC (no prescriptions for either agent in prior 6 months) were selected and their asthma-related charges were assessed over 6 months following the initial prescription. **RESULTS:** 544 LEV-treated patients were identified and matched to 544 RAC-treated patients. 62% of RAC patients previously received no CM, 20% had 1 CM, and 18% had >1 CM. Following RAC treatment 30% had 1 CM and 29% had >1 CM. Use of leukotriene modifiers increased from 8% to 14% and corticosteroid use increased from 33% to 46%. Although