service as the item being valued. We examined whether DC CV questions lead to hypothetical bias for this good, and we tested whether “definitely sure” hypothetical yes responses, as identified in a follow-up question, correspond to real yes responses. METHODS: 172 subjects with asthma were recruited from 10 Kentucky community pharmacies. Subjects received either a DC CV question or were given the opportunity to actually purchase the service. Three different prices were used: $15, $40, and $80. RESULTS: In the hypothetical group 38% of subjects stated they would purchase the good at the given price, but only 12% of subjects in the real group purchased the good ($p = 0.000). We cannot, however, reject the null hypothesis that “definitely sure” hypothetical yes responses correspond to real yes responses. CONCLUSIONS: The DC CV method overestimates WTP in the HCS, but it may be possible to correct for this by sorting out “definitely sure” yes responses.

ASSESSMENT OF THE RELATIONSHIP BETWEEN DISEASE SEVERITY, QUALITY OF LIFE AND WILLINGNESS TO PAY IN ASTHMA
Zillich A1, Blumenschein K1, Johannesson M2, Freeman P3
1University of Kentucky College of Pharmacy, Lexington, KY USA; 2Stockholm School of Economics, Stockholm, Sweden; 3American Pharmacy Services Corporation, Frankfort, KY, USA

OBJECTIVE: The primary objective was to evaluate the relationship between willingness to pay (WTP), quality of life (QOL), and disease severity measures in asthma patients. The hypothesis studied was that asthma patients with more severe disease, as measured objectively via forced expiratory volume percent predicted (FEV1%), are willing to pay more for a hypothetical cure from asthma than those with less severe disease. METHODS: One-hundred asthmatic patients were recruited from community pharmacies in Kentucky for 30 minute face-to-face interviews. Spirometry was used to assess objective disease severity while a multiple choice question assessed subjective disease severity. The Short Form 36 (SF-36) and Asthma Technology of Patient Experience (Asthma TyPE) measured QOL. WTP was obtained via a dichotomous choice contingent valuation question. RESULTS: WTP was significantly related to both objective disease severity ($p = 0.02$) and subjectively assessed disease severity ($p = 0.01$). For objective disease severity the mean monthly WTP was $90 for mild asthma, $131 for moderate asthma and $331 for severe asthma; and for subjective disease severity the mean monthly WTP was $48 for mild asthma, $166 for moderate asthma and $241 for severe asthma. A majority of the QOL measures were correlated with WTP. CONCLUSIONS: The results suggest that the WTP for a cure from asthma is related to both objective and subjective disease severity.

COMPARISON OF HEALTH CARE RESOURCE UTILIZATION OF COPD PATIENTS ON CILONILAST, 15 MG BID VERSUS PLACEBO
Bagchi I, Bakst A, Edelson J, Amit O
GlaxoSmithKline, Collegeville, PA, USA

OBJECTIVES: Cilomilast is a potent and selective phosphodiesterase type 4 (PDE4) inhibitor currently under development for the treatment of chronic obstructive pulmonary disease (COPD) and asthma. METHODS: COPD-related health care resource utilization including physician visits, emergency room visits, hospitalizations and medication use were prospectively collected in a 6 month randomized, double-blind, placebo controlled, parallel group study of patients on cilomilast, 15 mg bid (n = 431) versus patients on placebo (n = 216). Methods of analysis included descriptive statistics, Kaplan-Meier estimates and Poisson regression. RESULTS: In the year prior to the study, COPD-related health care resource utilization was comparable between patients eventually randomized to cilomilast and those randomized to placebo; the majority of all patients had no or one emergency room visit or hospitalization. During the entire 24-week study period, the cumulative incidence of health care utilization was significantly lower in the cilomilast group than the placebo group in terms of all utilization (11.0% vs. 21.1%, $p = 0.004$); including physician visits (11.9% vs. 23.1%, $p = 0.002$), emergency room visits (0.6% vs. 4.5%, $p = 0.004$) and hospitalization (0.5% vs. 3.4%, $p = 0.021$). The relative utilization rates per patient-month of follow-up for each of the utilization types were lower in the cilomilast group than in the placebo group. Treatment with cilomilast resulted in reduction of all utilization by 51% (C.I.: 31%, 65%), physician visits by 41% (C.I.: 15%, 59%), ER visits and hospitalizations were also significantly reduced. CONCLUSIONS: In this study, cilomilast was associated with significantly less COPD-related health care resource utilization, including hospitalizations, emergency room visits and physician visits than placebo.

COST OF TREATING ASTHMA IN A MANAGED CARE POPULATION
Armstrong EP, Malone DC, Rehfeld RA
University of Arizona, Tucson, AZ, USA

OBJECTIVES: Asthma is a common medical condition that is increasing in prevalence. The purpose of this study was to examine costs associated with treating asthma patients within a managed care organization (MCO). METHODS: Data for this study were obtained from a managed care organization located in the Western region of the US. Patients were eligible for inclusion if they met one of the following criteria: a diagnosis of asthma (ICD-9 code of 493.xx); two or more prescriptions used to control asthma (e.g., inhaled corticosteroid, leukotriene
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.

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.

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.

IMPACT OF THE ADDITION OF SALMETEROL TO THE TREATMENT OF ASTHMA PATIENTS IN A MEDICAID FEE-FOR-SERVICE POPULATION
Klaurens LM, Dodd MA, Guichup GV, Kelly HW, Hollarbusch 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-