used (proxy for comorbidity). Given the skewed distribution of expenditure variables, multiple model specifications including ordinary least squares regression, generalized linear model (GLM) with Poisson, gamma and negative binomial variance functions were evaluated. RESULTS: The prevalence of current asthma among children in 2004 was estimated at 9.09%, i.e., 6.7 million persons (95% CI: 8.27% to 9.99%) in the U.S. A majority of children with asthma were male (61.6%), white (68.1%), and insured (95.2%) with mean age of 8.9 ± 0.25 years and education of 2.4 ± 0.17 years. Children with asthma had 69% higher total expenditures than non-asthmatics after controlling for covariates (RR: 1.69; p < 0.0001). The annual adjusted mean incremental total expenditure associated with asthma was $661.7 (SE: $159.3; p < 0.0001) per person. Medications accounted for the largest proportion of the total expenditures estimated at $197.9 (SE: $28.8; p < 0.0001), followed by physician office visits at $162.3 (SE: $57.7; p = 0.005) and inpatient visits at $105.0 (SE: $75.9; p = 0.0167). CONCLUSION: Given the prevalence of asthma in children and its associated incremental expenditures, the annual direct medical expenditure for treating asthma in children is estimated at approximately $4.4 billion in 2005 USD.

ANALYSIS OF THE COSTS RELATED TO SMOKING HABITS OF BENEFICIARIES OF A BRAZILIAN HEALTH PLAN, WITH THE PURPOSE TO DEFINE TREATMENT STRATEGIES TO REIMBURSE FIRST LINE MEDICATIONS

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OBJECTIVE: Cigarette smoking is one of the leading avoidable causes of death in the world. However, in many countries, such as Brazil, medications used during pharmacological treatments are not supported by private or public health systems. The purpose of this study is to analyze and to compare the financial impact of the costs related to adult smokers beneficiaries of a health plan and define the best strategies to stimulate smoking cessation programs.

METHODS: We analyzed smoking habits, based on an epidemiologic investigation of 46,407 beneficiaries of a private health plan in Brazil. Expenses with hospitalization and use of medical services during a period of 12 months, of beneficiaries who report a daily smoking habit were compared with those of non-smokers. Simulated analysis were performed with the estimate costs of treatments with anti nicotin drugs a potential decrease of the costs of the health plan was estimated.

RESULTS: Among the beneficiaries, 29.0% (n = 10,270) were smokers and 61.8% of those were male. The majority (86.7%) of the smokers informed to consume 20 cigarettes per day; 9.5% consumed 20 to 40 cigarettes per day and the rest of the group (3.8%) consumed more than this amount. 43.3% smoked for less than 10 years; 25.0% from 10 to 20 years and 31.6% for more than 20 years. The prevalence of chronic diseases was higher among the smokers, compared to non-smokers, as well as average per capita cost expenditures (29% more than the non-smokers). CONCLUSION: Starting from reported efficiency of the nicotine replacement therapies added to psychological support, applied to the group of smokers of the health plan and comparing the costs of this strategy with the effective costs of those beneficiaries, evidences demonstrate the importance of considering financial support systems to smoking cessation interventions, by the health plan.

THE DEVELOPMENT AND VALIDATION OF A CONTEMPORARY ASTHMA POLICY MODEL

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OBJECTIVES: Asthma treatment guidelines and recent cost-effectiveness models have shifted away from lung function outcomes and moved toward emphasizing control. We developed and validated a flexible and transparent adult asthma policy model that represents disease progression though levels of asthma control and projects lifetime mortality, morbidity, and costs. METHODS: We estimated uncertainty and point estimates of model inputs for non-death transition state probabilities and health state specific utilities and health care resource utilization based on a rigorous analyses of a 3-year, multicenter, observational study of 4756 patients with difficult-to-treat or severe asthma receiving standard-of-care. We used statistical regression models to test and account for population heterogeneity. We validated the model following the ISPOR Task Force recommendations. Three hypothetical scenarios were compared to standard-of-care that resulted in different target product profile and pricing bands: A) a 30% relative reduction in exacerbation rates with a $2000 per annum treatment cost; B) A plus a threefold increased risk of asthma related death for the sub-optimally controlled; C) B plus an absolute improvement in utility by 0.02 for each health state. RESULTS: Simulation cohorts, stratified by age and severity, transitioned through three mutually exclusive levels of control until reaching death. Nine health states were modeled because one cycle of control history was predictive of present cost and utility. Compared to standard-of-care, the three hypothetical scenarios resulted in societal incremental cost-effectiveness ratios of $284,000 per QALY gained (95% interval: $193,000, $463,000), $263,000/QALY (95% interval: $179,000, $422,000), and $62,000/QALY (95% interval: $52,000, $72,000) respectively. CONCLUSIONS: This policy model adds to past asthma models because its structure and inputs were based on current clinical guidelines and a large long-term patient-level registry. This versatile model can forecast: lifelong burden of disease, value of current and emerging interventions, and parameters that yield the highest return from further study.

HOW PROCESS INFLUENCES SCIENTIFIC EVIDENCE FOR HEALTH CARE POLICYMAKERS, THE CASE OF ECONOMICS AND MEDICAL DECISION-MAKING PROCESSES

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OBJECTIVE: This paper contributes to the debate on how process affects reliability of scientific evidence in health care. It discusses the use of different types of study designs in medicine and biology versus social sciences to raise scientific international evidence. METHODS: A comparison of study designs used in clinical research (RCT and bridges studies (e.g. Hsiao CF et als, 2007)) and in social sciences. Examples from clinical sciences are on environmental medicine and bridging studies. Examples from social sciences are presented on two characteristics of six European hypertensive patient surveys on cost of medicines (ENDEP-Lux, 2000): exemption criteria and classification of medicines for reimbursement. RESULTS: The comparison of case studies shows similar problems for both clinical and financing study designs: imbalance of sample sizes between new and original sites for clinical bridges studies, and between national sampled patients with different access to health benefits for financing
Asthma pharmacotherapy and at risk non-African American minority populations: evidence of sub-optimal care from the National Ambulatory Medical Survey 1998–2004

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OBJECTIVE: This study attempted to determine if select patient and physician demographic variables are predictors of the prescribing of asthma pharmacotherapy in the ambulatory patient population of the United States, with particular emphasis on the non-African American minority population. Recent research suggests that these populations may be at-risk for receiving sub-optimal asthma care due to cultural and/or linguistic barriers to obtaining proper care, cultural beliefs about asthma treatment, low socio-economic status and even genetic polymorphisms that may be due to poor responses to asthma medications. METHODS: This study was a retrospective cross-sectional study that used data from the National Ambulatory Medical Care Survey (NAMCS) from 1998 through 2004. The weighted population sample size of the study was 82,020,318 patients and there were 1,540 observations in this study (pre-weighted sample size). Specific patient demographic variables, physician demographic variables and asthma medications prescribed were extracted from the dataset and analyzed. RESULTS: A major finding from this study was the fact that non-African American minority populations were receiving sub-optimal asthma pharmacotherapy, Non-African American minorities (Asians, Native Americans, Pacific Islanders, Alaskan Natives and other minorities) were less likely to be prescribed controller medications (OR = 0.405), combinations of ICS and LABA agents (OR = 0.267) and more likely to be prescribed SABA agents (OR = 1.769) when compared to the overall population [all p < 0.05]. Additionally, our research also indicates that these minority patients are generally younger, more likely to see primary care physicians, and are also likely to have insurance coverage (public & private). They are also more likely to reside in an urban area and live in the Western United States. CONCLUSION: It appears that a more concerted effort needs to be undertaken to study the factors that may explain the sub-optimal patterns of asthma care provided to these at-risk minority populations.

Sensory systems disorders—Clinical Outcomes Studies

PS1

CO-MORBIDITIES INCREASE IN THE YEAR FOLLOWING A DIAGNOSIS OF PSORIASIS

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OBJECTIVE: To evaluate the impact of psoriasis (PsO) on the presence of co-morbidities in the first year after the diagnosis. METHODS: A retrospective study of the PharMetrics database, compiled from managed care plans throughout the United States, from January 1, 2000 through December 31, 2006 was conducted. Patients between the ages of 18 to 80 years, who had a minimum of 12 months of continuous enrollment before and after their index diagnosis with PsO, were included. The index diagnosis date was derived from the first claim for PsO during the study period. The presence of co-morbidities was determined by frequency counts and as a percentage of total claims generated during the study period. RESULTS: The study cohort included 48,068 patients; 52.3% were females, and the mean age was 46.3 years. Multiple co-morbidities were identified in the years prior to and subsequent to the diagnosis of PsO. The five most frequently observed co-morbidities were: hypertensive disease (increased from 24.45% to 26.65%), hyperlipidemia (from 15.72% to 18.06%), pure hyperglyc- eridemia, and mixed hyperlipidemia (from 14.65% to 16.18%), diabetes mellitus (from 8.36% to 9.57%), depressive disorder, episodic mood disorder, and dysthymic disorder (from 6.88% to 7.12%). Additionally, the five highest percentage increases in co-morbidities in the years prior to and subsequent to the diagnosis of PsO were: 1) Malignant neoplasm of uterus and cervix uteri (60%, pre-n = 26, post-n = 38); 2) Malignant neoplasm of trachea, bronchus and lung (57.1%, pre-n = 33, post-n = 54); 3) Malignant neoplasm of ovary and other uterine adnexa (44.4%, pre-n = 42, post-n = 63); 4) Psoriatic Arthropathy (44.0%, pre-n = 1357, post-n = 1950); and 5) Atherosclerosis (33.3%, pre-n = 142, post-n = 193). CONCLUSION: This study indicates that co-morbidities increase significantly in the year subsequent to a diagnosis of PsO. The large increases noted in malignancies may be due to the small numbers of cases observed.

PS2

EFFICACY OF BIOLOGICAL TREATMENTS IN PATIENTS WITH PSORIASIS; META-ANALYSIS

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OBJECTIVE: Five biological treatments are registered for psoriasis, the tumor necrosis alpha (TNF-alpha) inhibitor adalimumab, etanercept and infliximab and the T-cell modulator alefacept, efalizumab. Our objectives were to analyse the efficacy of registered biological drugs in psoriasis and to also compare their efficacy on a pharmacological group level. METHODS: Cochrane Highly Sensitive Search Strategy was used to identify RCTs in MEDLINE. Inclusion criteria were: a) treatment of psoriasis b) outcome data on the proportions of patients achieving at least 75% improvement in Psoriasis Area and Severity Index (PASI) from baseline. The quality of selected studies was measured using the Jadad-score. Data were entered into Review Manager 4.2 software. The chosen summary statistic variable