ate, positive reinforcement with a maintenance inhaler has the potential for increasing satisfaction and persistence with treatment and improving health status. METHODS: Two qualitative studies using structured interviews were conducted to understand patient perceptions associated with feeling an asthma medication working right away and develop a method for quantifying this perception in clinical trials. RESULTS: Study I: 56 asthma patients (44 yrs, SD = 18) were asked about the concept of feeling their medication working right away and whether it was important. Respondents described the perception as breathing easier and deeper and felt this would be meaningful and reassuring. Five items, labeled the “Onset of Effect Questionnaire” (OEQ), were developed for use as a weekly diary. Items to identify patients who perceived their medication working right away and those satisfied with the perception were of particular interest. Items were pre-tested via telephone interview (n = 11) and found to be clear, comprehensive, and easy to complete. Patients understood the concept and the concise, weekly diary approach. Study II: 39 asthma patients (37 years, SD = 15) participated in cognitive debriefing interviews to test item interpretation and gather additional data on perception and its value. Respondents characterized the items as clear, interpreted “right away” as immediately to <15 minutes after inhalation, and had no difficulty interpreting the 1-week recall. CONCLUSION: Patients understand and value the concept of perceiving a maintenance therapy working right away. A concise, weekly recall diary approach can be used to quantify this attribute in clinical trials.

ALLERGY/ASTHMA—Patient-Reported Outcomes

PAA24

ASTHMA CONTROL AND HEALTH-RELATED QUALITY OF LIFE IN CHILDREN
Cope SF1, Ungar WJ1, Glazier RH2, Kozyrskyj A3, Paterson M4
1University of Toronto, Toronto, ON, Canada, 2The Hospital for Sick Children, Toronto, ON, Canada, 3Institute for Clinical Evaluative Sciences, Toronto, ON, Canada, 4Manitoba Centre for Health Policy, University of Manitoba, Winnipeg, MB, Canada

OBJECTIVES: To determine the relationship between Health-Related Quality of Life (HRQL) and asthma control in children as defined by the Canadian Pediatric Asthma Consensus Guidelines (CPACG). METHODS: Cross-sectional data on 879 children aged 1 to 18 from a completed study of children with a diagnosis of asthma were analyzed. The Pediatric Asthma Quality of Life Questionnaire (PAQLQ) was administered by interview and information regarding the following asthma control parameters was collected: daytime symptoms, night-time symptoms, beta2-agonist use, physical activity level, exacerbations, and school absences. The Pearson correlation was calculated between the asthma control parameters satisfied and the PAQLQ domain scores. The level of agreement between the top quintile of each PAQLQ domain (≥80th percentile) and acceptable asthma control (all six parameters satisfied) was evaluated using the kappa statistic to measure agreement beyond chance. This was also done for unacceptable control (four or fewer out of six parameters satisfied) and the bottom quintile PAQLQ scores. RESULTS: The correlations between the number of asthma control parameters and the PAQLQ domains were 0.507, 0.467, and 0.474, (p < 0.0001) for the symptoms, activity limitations, and emotional function domains respectively. The kappa for the top quintile of each PAQLQ domain and acceptable control was 0.206 for symptoms, 0.117 for activity limitations, and 0.184 for emotional function. The level of agreement between unacceptable control for the lowest quintiles domains was 0.128, 0.114, and 0.133 for symptoms, activity, and emotional function, respectively. CONCLUSION: The strong relationship between asthma control and HRQL supports a shared focus on control and quality of life in the CPACG. The low level of agreement between the control levels and the PAQLQ quintiles suggests further study is needed to determine optimal cutoffs for control levels and the marginal benefits from quality of life measures.

PAA25

IMPACT OF ALLERGIC RHINITIS ON WORK PRODUCTIVITY
Beyer A, Szeinbach SL, Seoane-Vazquez E, Williams PB
1Ohio State University, Columbus, OH, USA, 2University of Missouri, Kansas City, MO, USA

OBJECTIVES: Patients with allergic rhinitis (AR) experience a multitude of symptoms that usually compromise some aspect of lifestyle and work productivity. METHODS: A questionnaire was developed and mailed to 2065 patients enrolled in a 500,000 member managed care organization. Patients were identified by diagnostic codes for AR as determined from a retro-examination of medical and prescription claims records from January 1, 2000 to December 31, 2000. A ten-point scale was used to assess the impact of allergy symptoms on work productivity adapted from the Allergy-Specific Work Productivity and Activity Impairment questionnaire. RESULTS: On average respondents (n = 577) reported one hour of work missed per week because of allergy symptoms (range = 0–32 hours). For patients seeing family physicians, 66 (55.0%) reported that either a blood or skin test was valuable during the process of allergy diagnosis, 82 (73.9%) for allergists, and 56 (65.1%) for self-managed patients who were previously tested. Chi-square and analysis of variance tests also revealed significant differences among three care groups (p < 0.05) for years with allergies, symptoms, family history, testing, immunotherapy, test value, and prescribed antihistamine use. Multiple linear regression analysis revealed that sleep, health-related quality of life (HRQoL), certain allergy symptoms and prescribed antihistamines were significantly related to work productivity. CONCLUSION: The ability of individuals with AR to engage in productive work is influenced by sleep, HRQoL, specific symptoms, and prescribed antihistamine use. Appropriate clinical evaluation and an accurate diagnosis using either or both specific IgE testing or skin testing is needed to develop a holistic approach for treatment.

PAA26

SOCIOECONOMIC FACTORS RELATED TO ASTHMA CONTROL IN CHILDREN
Cope SF, Ungar WJ, Glazier RH, Kozyrskyj A, Paterson M
1University of Toronto, Toronto, ON, Canada, 2The Hospital for Sick Children, Toronto, ON, Canada, 3Institute for Clinical Evaluative Sciences, Toronto, ON, Canada, 4Manitoba Centre for Health Policy, University of Manitoba, Winnipeg, MB, Canada

OBJECTIVES: To determine the socioeconomic predictors of asthma control in children, as defined by the Canadian Pediatric Asthma Consensus Guidelines (CPACG). METHODS: A cross-sectional design was used to analyze data from a completed CIHR-funded study based on 879 children from seven sites in the Greater Toronto Area between 2000–2003. Children were aged 1 to 18 years with a documented diagnosis of asthma and a prescription for an asthma medication in the previous year. Multiple linear regressions were used to analyze asthma control based on six equally weighted control parameters (daytime symptoms, night-time symptoms, need for beta2-agonists, phys-
tical activity level, exacerbations, and school absences). The impact of the following factors was investigated: family income adequacy, parental education, parental employment, ethnicity, parent immigration, language, parent marital status, and physical environment characteristics. The CPACG and Global Initiative for Asthma (GINA) guideline definitions of asthma control were compared. RESULTS: Only 11% of patients met the requirements for acceptable control by satisfying all six parameters, while 20% satisfied five parameters, and 69% satisfied four or fewer parameters. The multiple regressions indicated that income adequacy had an impact on asthma control. Children from families in the middle income adequacy quintile tended to have worse control. Higher numbers of asthma triggers, increased physician or specialist visits, and daily use of anti-inflammatories, were associated with lower levels of control. The CPACG and GINA guidelines had a high level of agreement (Weighted kappa = 0.74, p < 0.0001), although it was more difficult to achieve acceptable asthma control in the CPACG guidelines. CONCLUSION: Despite the established effectiveness of inhaled corticosteroids in the prevention of asthma exacerbations, poor control remains a problem which was affected by family income adequacy.

ARTHRITIS—Clinical Outcomes Studies

MORTALITY RATE OF PATIENTS WITH RHEUMATOID ARTHRITIS, PSORIASIS, CROHN'S DISEASE AND ULCERATIVE COLITIS IN THE UNITED KINGDOM

Diels JK, Bala M, Bud D

1Janssen Pharmaceutica, Beerse, Belgium, 2Johnson & Johnson, Malvern, PA, USA, 3Johnson and Johnson Pharmaceutical Services, Raritan, NJ, USA

OBJECTIVES: Rheumatoid arthritis (RA), psoriasis (PS), Crohn's disease (CD) and ulcerative colitis (UC) are autoimmune related diseases. The purpose of this study was to estimate the mortality rate of patients for each of these four conditions, relative to the overall population, adjusting for age and sex differences of each patient group. METHODS: The analysis was based on the THIN database for 2004. This data source is based on the registration in GP-practices for a 4% representative sample of the overall UK population. From the overall-population sample (n = 2,278,100), patients were identified based on the READ codes for each of these conditions in the previous 4 years. A subgroup of severe cases was identified, based on previous drug treatment. The standardised mortality ratio (SMR), defined as the proportion of the observed number of deaths and the expected number, based on the age and gender specific mortality rates for the overall population, was calculated for each patient group. 95% confidence intervals were calculated. RESULTS: 2% of the studied population suffers from one or more of the four diseases: RA (0.44%), PS (1.3%), CD (0.14%) or UC (0.16%). The SMR for all four disease conditions combined was significantly higher (132 [122,143]) compared to the global UK population. Within the four groups, RA (158 [139,179]), CD (165 [108,241]) and PS (116 [103,130]) all showed statistically increased mortality. The SMR was (ns) higher for UC (122, [89,163]). Within each of these disease groups, mortality was higher for severe patients, but did not reach statistical significance, possibly due to the relatively small sample size of these subgroups. CONCLUSION: Patients suffering from Crohn’s disease and rheumatoid arthritis have a 60% increased mortality compared to the overall UK population. Mortality is about 20% higher for patients with psoriasis and ulcerative colitis.

ARTHRITIS—Cost Studies

COST OF PAIN THERAPY FOR OSTEOARTHRITIS IN A PRIVATELY INSURED POPULATION IN THE UNITED STATES

White AG, Birnbaum HG, Buteau S, Janagap C, Schein JR

1Analysis Group, Inc, Boston, MA, USA, 2Ortho-McNeil Janssen Scientific Affairs, LLC, Raritan, NJ, USA

OBJECTIVES: To assess the health care utilization and associated costs for osteoarthritis (OA) patients, depending on the primary drug prescribed for pain management. METHODS: A claims database of privately insured patients (covering 31 employers, 1999–2004) was used to identify OA patients (ICD-9-CM 715.XX). OA patients were categorized by primary pain drug treatment—defined as greatest days supply, 2003–2004—for pain management (tramadol, acetaminophen w/codeine, Cox-IVs, NSAIDS, short-acting opioids). A tramadol monotherapy cohort was also constructed in which patients were prescribed only tramadol for their pain (i.e., these patients did not receive any of the other primary pain drugs listed above.) Mean annual per patient health care costs were calculated for each drug treatment cohort from a private payer’s perspective. RESULTS: OA patients (n = 32,043) were often prescribed multiple drugs simultaneously and/or sequentially to manage pain. Average annual direct medical costs for OA patients were $8602 (ranging from $6011 to $13,964 depending on the drug treatment cohort). Average annual drug costs for OA patients were $2941 (ranging from $2108 to $8498 depending on the drug treatment cohort). The tramadol monotherapy cohort had lower costs than other cohorts. Cohort cost differences reflect, in part, more severe comorbidity profile and complex temporal treatment patterns. CONCLUSION: Average annual direct costs of OA patients were $11,543, which varies by drug treatment cohort. OA patients use multiple simultaneously and/or sequentially to treat their pain. Prescribing tramadol earlier to treat OA may reduce therapy switching and associated costs and a once-a-day version of tramadol may offer additional convenience, tolerability and sleep improvement benefits for OA patients. Future research is needed to identify the temporal patterns of tramadol use and associated outcomes.

COST-EFFECTIVENESS OF LUMIRACOXIB COMPARED TO CELECOXIB FOR THE TREATMENT OF OSTEOARTHRITIS IN CANADA

Sambrook IC, Levy AR, Osenenko K, Kindundu C, Barbeau M

1Oxford Outcomes Ltd, Vancouver, BC, Canada, 2Novartis Pharmaceuticals Canada Inc, Dorval, QC, Canada

OBJECTIVES: To estimate incremental cost-utility ratios for lumiracoxib relative to celecoxib for treating osteoarthritis (OA) in Canada. Secondary comparators including six common treatment algorithms (non-steroidal anti-inflammatory drugs with and without proton pump inhibitors) were also evaluated. METHODS: An existing Markov model with 3 month cycle lengths and 5 year time horizon was adapted for Canada. Analyses were performed from the third-party perspective of the Ontario Ministry of Health. Treatments were assumed to be equally efficacious in treating symptoms of OA. Data on differences in rates of gastrointestinal (GI) and other (renal, skin, hepatic) adverse events were obtained from published randomized trials. Quality-adjusted life years (QALYs) were calculated separately for subgroups defined a priori for age, sex, aspirin use, and history of GI bleed. Common treatment pathways were elicited from clinical experts. Costs of hospitalizations, laboratory tests, professional fees, and medications were obtained from