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OBJECTIVES: Inhaled corticosteroids can cause oropharyngeal adverse events (OAEs). We investigated the direct costs of treating oral candidiasis and hoarseness OAEs in Australia (costs $AUD).

METHODS: We assumed 4% fewer OAEs in patients treated with ciclesonide (CIC), compared to fluticasone propionate (FP), based on data from a 12-week, randomized, double-blind clinical trial in patients with moderate asthma (comparable efficacy; OAE rate: CIC [400 μg/day] 0.5%; FP [500 μg/day] 4.5%; rate difference [RD] 4%, 95% CI: 1.04%–6.95%). Costings were done based on resource sparing and resource intensive assumptions.

RESULTS: The resource sparing model assumed: 1.9 doctor visits ($30.85 per visit) and 1.9 nystatin treatments ($9.08 per treatment) to diagnose and treat OAE. The estimated treatment cost per OAE was $75.87. The average cost saving per patient treated with CIC per 12-week period was $3.03 ($75.87 x 4%).

CONCLUSIONS: We believe the improved safety profile of CIC would reduce resource use associated with treating OAEs and have favorable long-term clinical and economic outcomes.

Analyzing the Influence of Switching between Different Asthma Regimes on Medication Adherence

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OBJECTIVE: The study was undertaken to examine the impact of medication adherence on health care utilization and costs.

METHOD: This retrospective observational study included 1459 patients (618) with asthma. From January 2001 through December 2004, the medication possession ratio (MPR) was used to assess adherence. Data on resource utilization including physician visits and hospital referrals was collected. Unit costs at 2005 prices were applied to this data to estimate the mean annual costs per patient. Indirect costs due to workdays lost were also considered.

RESULTS: Of 1459 patients who were under anti-asthmatic therapy, 300 were taking an inhaled long-acting beta2 agonist (LABA), 278 patients an inhaled corticosteroid (ICS) and 94 patients were using both (LABA + ICS). Another 457 and 424 patients were receiving the fluticasone/salmeterol and budesonide/formoterol fixed combination, respectively. About 30% of the patients switch between inhaled medications. This cohort showed a higher mean adherence (62%) compared to the patients continuing to take their existing inhaler (56%). Also the proportion of patients achieving an adequate adherence level was higher (46% versus 39%). However, compared with the patients who stick to their medications, those who switch between regimes or agents had more unscheduled physician visit (1.9 per switching vs. 1.59 per existing patient) and more work-loss days (14.1 days per switching vs. 6.34 days per existing patient). When comparing both the direct costs and indirect costs, switching patients caused higher costs per patient.

CONCLUSIONS: Even though the patients who switch show a better adherence with their treatment, they cause higher mean direct and indirect costs per patient per observation year. This finding indicates that it might be better to adjust patients successfully to one product.

The Effects of Generic-only Drug Coverage on Inhaled Corticosteroid Expeditures and Use

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OBJECTIVE: Generic-only drug benefit coverage is increasingly common. There are no generic inhaled corticosteroids (ICS), therefore, patients with generic-only coverage pay full-price for ICS drugs. We examined the impact of losing brand-coverage on
ICS expenditures and use (2003–2004) among Medicare+Choice beneficiaries with asthma, and a high-severity asthma subgroup. METHODS: We used automated data from an integrated delivery system in the U.S. All subjects were continuously enrolled, age 65+, asthma-registry members with prior ICS use, and had $100 generic-copayments and no chronic obstructive pulmonary disorder diagnoses or ipratropium bromide use (n = 2,908). In 2004, 74.0% switched from a $30 brand-copayment with a $1000 annual cap, to generic-only coverage (full-price for brand-drugs), with no copay; 26.0% had $15–25 brand-copayments 2003–2004 (control-group). We used linear difference-in-difference models to examine changes (2003–2004) in ICS expenditures (total and out-of-pocket) and use (days-of-supply). Models adjusted for gender, age, race/ethnicity, neighborhood socioeconomic-status, comorbidity, chronic diseases, and asthma characteristics (high-risk asthma-flag, high-dose ICS, prior asthma-related emergency or hospital visits, oral steroid use, and ICS type). We defined patients as having high-severity asthma if they had a high-risk flag or a high-dose ICS prescription (n = 798). RESULTS: In multivariable analyses, patients who lost brand-coverage had lower total ICS expenditures ($106, [95% CI: $75 to $137]), but higher out-of-pocket expenditures ($52, [$40 to $64]), compared with patients with no coverage changes; ICS-days-of-supply were also lower (−1.1 days, [−1.8 to −0.4]). Among high-severity asthma patients, loss of brand-coverage was associated with changes similar in direction, but larger in magnitude: total ICS expenditures ($270, [−$322 to −$219]); out-of-pocket expenditures ($74, [$43 to $104]); and days-of-supply (−24.2, [−37.6 to −10.9]). CONCLUSIONS: Patients with generic-only coverage had higher out-of-pocket costs and lower total expenditures and days-of-supply for inhaled corticosteroids. These changes were greater among high-severity asthma patients. Future research will examine the clinical effects of these changes.

HEALTH PLAN STRUCTURE AND EXPENDITURES FOR ASTHMA CARE
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OBJECTIVES: The objective of this study is to evaluate the effect of health plan structure on health care utilization and expenditures for asthma care. Some health plans in the USA require a designated primary care physician (PCP plans) and some do not (NPCP plans). METHODS: Our data was drawn from the MEDSTAT MarketScan database. The sample had 330,685 patients with either at least one hospitalization or at least two outpatient visits for asthma during 1998–2001. Approximately 47% (154,106) of the patients had PCP plans; the remainder had NPCP health plans. We performed regression analysis to examine the effect of having a primary care physician and capitalization in the health plan on expenditures for asthma, controlling for gender, age, employment status, and health status via the Charlson comorbidity index. RESULTS: We found annual per capita inpatient expenditures for asthma were about 8.4% lower for the patients in the PCP plans compared to the patients in the NPCP plans (p < 0.01), with a mean length of stay 0.07 days shorter (p < 0.01) and 0.02 times fewer admissions (p < 0.01) per year for asthma. However, annual per capita outpatient expenditures for asthma were 9.1% higher in the PCP plans compared to the NPCP plans (p < 0.01) as PCP asthma patients received 1.4 more outpatient services per year (p < 0.01) and about 0.2 more outpatient visits (p < 0.01) per year than NPCP asthma patients. On net, total expenditures were 3.2% lower for PCP asthma patients (p < 0.01) than for NPCP asthma patients. CONCLUSIONS: For asthma care, there is a tradeoff between relatively inexpensive outpatient services and more expensive inpatient services. Results of this study suggest that patients with asthma enrolled in PCP plans used significantly more outpatient services and fewer inpatient services, resulting in lower overall spending.

COST-EFFECTIVENESS ANALYSIS FOR THE ASSESSMENT OF PREVENTIVE SCHEMES BASED ON GENETIC SCREENING
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OBJECTIVE: The study is focused on the potential impacts of genome-based technologies on health care. We have chosen asthma in children as a case study and gene-screening as the technology assessed to explore the cost-effectiveness of applying an early genetic-screening to newborns and a preventive treatment to the population at risk. METHODS: A Markov model consisting on six mutually exclusive disease states with a simulation horizon of 100 years was constructed. Two different scenarios were defined. RESULTS: In the base case and for scenario 1, the number of quality adjusted life years (QALY) gained is 4.081 and the incremental cost-effectiveness ratio per QALY gained is €40,416.1/QALY. In scenario 2, the number of QALYs gained is 1.483 and the incremental cost-effectiveness ratio per QALY gained falls to €18,474.27/QALY. We have carried out a sensitivity analysis varying the discount rate, the cost of genetic testing and considering two different transition matrices for the preventive programme. Two main conclusions are derived from the sensitivity analysis carried out. Firstly, it seems that increasing by 2% the discount rate for both cost and health outcomes the cost-effectiveness of the preventive programme does not vary so much. However, discounting costs and benefits at 5% the preventive programme in both scenarios appears as cost-effective. Secondly, it seems that increasing the cost of genetic testing up to 100€ the cost-effectiveness of the preventive programme in both scenarios remains practically stable. CONCLUSIONS: The cost-effectiveness of an early genetic-screening and the preventive strategy applied to all populations presenting the selected ADAM33 remains at the limit of the cost-effectiveness. Nevertheless the model represents a valuable tool to prospectively assess cost-effectiveness of preventive schemes based on genetic screening.

THE EFFECT OF SWITCHING ON ADHERENCE TO DIFFERENT TYPES OF ASTHMA TREATMENT
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OBJECTIVES: Medication adherence rates (using the MPR) were assessed among asthmatic patients who are under therapy with an inhaled long-acting beta2-agonist + corticosteroids (LABA+ICS) or a fixed fluticasone/salmeterol combination (FSC). The differences between patients, who stick to their therapy, compared to those, who switch between different regimes or agents were analysed. METHODS: Claims data were drawn from the IMS Database. Patients with asthma (>18 years) who are under inhaled therapy according to the National