

daily living limitations, supplemental insurance coverage and region. We also examined whether prescription drug coverage modified the difference in expenditures among enrollees with asthma. **RESULTS:** Medicare beneficiaries with asthma had higher mean Part A expenditures (\$4412 versus \$2744), longer average hospital stays (3.53 days versus 1.82), and higher Part B expenditures (\$3688 versus \$2547) than those without asthma. In regression analysis, asthma increased mean Part A expenditures by \$850 and Part B expenditures by \$551. Outpatient prescription drug coverage decreased Part B spending on persons with asthma by \$446, but increased Part B spending by \$243 for those without asthma. Prescription drug coverage had no effect on either Part A expenditures or the number of days spent in the hospital for either those with or those without asthma. **CONCLUSIONS:** Asthma increases expenditures in the Medicare program, but the increase is moderated by outpatient prescription drug coverage. This suggests that spending increases associated with the new Medicare prescription drug benefit may be mitigated by reductions in spending on chronic illnesses such as asthma. As the new drug benefit is designed, attention should be focused on the identification of medications that reduce overall Medicare spending to insure that they are covered by drug plans.

RI2

#### THE EXCESS COST OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE FROM A MANAGED-CARE PERSPECTIVE

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**OBJECTIVE:** To estimate the annual excess cost of chronic obstructive pulmonary disease (COPD) to a large managed-care plan. **METHODS:** This study employed a retrospective, matched cohort design and administrative claims data from the large multi-state managed care database. Patients selected were 35+ years of age, with a diagnosis of COPD in 2001, and eligible for medical and pharmacy benefits as of January 1, 2001. The comparison cohort consisted of patients without COPD matched on age, gender, geographic region, and insurance coverage type. The excess cost of COPD was estimated as the difference in mean health plan payments between the COPD and comparison cohorts during 2001. Multivariate techniques were employed to assess the contribution of mortality and comorbidity to excess costs. **RESULTS:** A total of 61,527 patients with COPD met study inclusion criteria, a prevalence of approximately 9%. Approximately 12% were diagnosed with emphysema, 25% with chronic bronchitis, and 63% with unclassified chronic airway obstruction. COPD patients and their matched controls (n = 61,527) averaged 71 years of age and 50% were female. Charlson comorbidities, especially vascular disease and cancer, were more common in the COPD cohort. The utilization of most types of services was significantly (P < 0.001) higher in the COPD group, including hospitalizations (43% vs. 14%), emergency room visits (47% vs. 21%), and home health-care services (28% vs. 8%). The annual per-patient excess cost of COPD from the health plan perspective was estimated to be approximately \$7900 (\$11,350 for the COPD cohort minus \$3450 for the control cohort), 58% of which was due to hospitalizations. The higher burden of comorbidity and mortality in the COPD cohort accounted for about 40% of the observed difference in excess costs. **CONCLUSIONS:** The excess cost of COPD is substantial. Acute hospitalizations and greater comorbidity burden explain a large portion of these excess costs.

#### COST-EFFECTIVENESS OF INFLUENZA VACCINE IN 6-24 MONTH OLD CHILDREN

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**OBJECTIVE:** Recent guidelines have recommended that children aged 6-24 months should be immunized with influenza vaccine to protect against influenza. Our objective was to evaluate health outcomes and costs to society of influenza vaccination on influenza and acute otitis media infection in an otherwise healthy population of 6-24 month old infants. **METHODS:** Based on published and unpublished data, a decision analytical model comparing two strategies: children vaccinated with inactivated influenza vaccine and children not vaccinated children has been developed. The clinical pathway predicted the probability of becoming infected with influenza, developing acute otitis media in conjunction with influenza or alone. Health outcomes used in this model included days of illness as well as days of paid employment missed by primary caregiver. Costs incorporated into the model included both direct and indirect costs including cost of vaccination, pharmaceutical costs of treatment of infection, hospitalization, and caregiver employment income lost. Robustness of results was tested by univariate and multivariate sensitivity analysis. The model was used to simulate the results for an otherwise healthy population comparing vaccination to non-vaccination strategy of care. **RESULTS:** Vaccination programs had lower cost and better health outcomes when compared to non-vaccination programs. Vaccinated children had an expected cost to society of \$329.51 with 2.29 expected days of illness and 1.93 days of work missed by the primary caregiver. Non-vaccinated children had an expected cost of \$393.78 with 3.97 expected days of illness and 2.63 days of work missed by the primary caregiver. Univariate and multivariate sensitivity analysis showed these results to be robust in upholding vaccination as a cost effective alternative to no vaccination over a wide range of assumptions. **CONCLUSION:** Immunization with inactivated influenza vaccine is a cost effective treatment in reducing the incidence of both influenza and acute otitis media for children aged 6-24 months.

RI3

RI4

#### AN ECONOMIC ANALYSIS OF RAPID TESTS AND ANTIVIRAL TREATMENTS FOR INFLUENZA IN CHILDREN

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**OBJECTIVE:** This study evaluates the projected cost-effectiveness of antiviral treatments (amantadine or oseltamivir) with and without the use of influenza rapid tests in children. **METHODS:** A decision tree was developed to predict costs and health effects of 5 strategies: no antiviral treatment, empirical treatment with amantadine, empirical treatment with oseltamivir, testing then treatment with amantadine, and testing then treatment with oseltamivir. The target population was stratified by age (6-23 mos, 2 yrs, 3-4 yrs, 5-11 yrs, and 12-17 yrs) and risk status (high or low risk for influenza-related complications). Probabilities and costs (direct and opportunity) for uncomplicated influenza, influenza-like illness, outpatient visits, hospitalizations, deaths, effectiveness of antiviral treatments, treatment adverse events, and characteristics of influenza rapid tests were based on primary and secondary data. Quality adjust-