RESULTS: During the four week period prior to the survey, allergic respondents reported missing a total of 16.4 hours of work; 1.97, 2.54, and 11.91 hours were due to full days missed, partial missed days, and presenteeism, respectively. On average, for presenteeism, respondents reported working 6 of 20 days when their allergy symptoms were worse than normal, and rated themselves as 75% productive on these days. A stepwise linear regression identified a) symptomatology, b) allergy-related physician visits, c) severity of medication side effects, d) younger age, e) overall rating of allergy severity, f) lower education, g) receipt of allergy shots, and h) low knowledge of allergies as statistically significant predictors (p < .05) of reduced productivity.

CONCLUSIONS: Data from this study confirm earlier research findings of the substantial disease burden associated with allergic rhinitis. Extrapolating to a full year, employees with allergic rhinitis could be expected to lose 213 hours of productivity, which at $20/hour wage rate translates into $4,260. Patient knowledge (self-management behaviors) and use of medications with fewer side effects (non-sedating antihistamines) are associated with increased productivity suggesting that various disease management strategies could be highly cost-effective.

COSTS OF ALLERGIC RHINITIS IN THE U.S
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The most widely cited studies on the costs of allergic rhinitis predate the use of non-sedating antihistamines and inhaled corticosteroids.

OBJECTIVE: Our objectives were to update U.S. estimates of the direct and indirect costs of allergic rhinitis and to estimate prescription medication expenditures by prescription drug coverage.

METHODS: Data from the 1996 Medical Expenditure Panel Survey (MEPS) were used in a cross-sectional analysis of resource utilization and costs for allergic rhinitis.

RESULTS: Approximately 6.5% (21 million) of the U.S. noninstitutionalized civilian population was estimated to experience allergic rhinitis during 1996, of which approximately 62% sought medical treatment (i.e., a visit to a medical provider or receipt of a prescribed medicine). The total cost of allergic rhinitis was estimated at $3.1 billion. Prescription medications comprised 43% ($1.5 billion) of the total cost and office/clinic visits comprised 40% ($1.4 billion). Twenty-three percent of the prescription medication expenditures were spent on second-generation antihistamines, 24% on inhaled corticosteroids, and 13% on sedating antihistamines. Allergic rhinitis was associated with approximately 3.3 million missed workdays and 1.5 million missed school days. Fifty-six percent of patients with allergic rhinitis received at least one prescription drug over the study year. Among these individuals, average prescription expenditures were $113 (95% CI, [$113, $124]), of which, $28 (95% CI, [$24, $33]) was paid out-of-pocket. The mean prescription medication expenditure was $153 (95% CI, [$135, $171]) for subjects with private insurance, $43 (95% CI, [$33, $53]) for individuals with no supplemental insurance, $103 (95% CI, [$69, $137]) for subjects with Medicare and/or Medicaid, and $211 (95% CI, [$95, $327]) with any other third party coverage.

CONCLUSION: Prescription medications represent a substantial proportion of the total cost of allergic rhinitis. Average expenditures for prescription medications vary by prescription drug coverage.

ESTIMATION AND COMPARISON OF LOSS IN PRODUCTIVITY BY THE HUMAN CAPITAL AND FRICTION COST APPROACH IN PATIENTS WITH ASTHMA
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Over-estimation is an important drawback of the Human-capital approach (HCA) of calculating cost of lost productivity. Also, there is insufficient empirical research regarding the use of Friction-cost approach (FCA) in calculating cost of lost productivity. These factors have acted as barrier to incorporation of cost of lost productivity in cost analyses studies.

OBJECTIVES: This study seeks to estimate and compare cost of lost productivity by Human-Capital Approach (HCA) and Friction-Cost Approach (FCA) in patients with asthma.

METHODS: Cross-sectional analysis was conducted using MEPS household component and medical condition survey, 1996. Patients with asthma (ICD-9: 493), who were between the ages 16 to 65 years and had missed, at minimum, half a day of work were selected. Missed hours due to illness, hourly wages and benefits were calculated based on data provided in MEPS and Bureau of Labor statistics. Costs of lost productivity were estimated using the HCA and FCA methods.

RESULTS: Of the 65 patients who were included in the study, 59% were full-time workers, 32% were part-time workers and 9% had changed their work status during the study period. Estimated total cost of lost productivity for 56 patients, by HCA, in 1996 was US$ 113,877 (1996 dollars). While, according to FCA, the estimated total cost of lost productivity ranged between US$ 64,014 and US$ 81,723 (1996 dollars).

CONCLUSION: The study results demonstrate that FCA estimates of cost of lost productivity are relatively lower as compared to HCA estimate. Also, depending on assumptions considered in FCA, there could be large variations in cost of lost productivity, as observed in this study. Therefore, for meaningful incorporation of lost productivity in cost-analysis studies further refinement of these two methods is implied.