INTRODUCTION

Insomnia is associated with substantial health-related costs that can pose a significant financial burden on employers. Recent studies have suggested that total direct costs for insomnia in the US may be approximately $15 billion annually. Understanding which areas of the health care system are utilized most by adults with insomnia is important for managed care payers in order to effectively contain costs. However, few studies have looked at the direct costs of insomnia by individual medical point of service. The current study compares the direct costs of doctor’s office visits, inpatient hospital visits, outpatient hospital/clinic visits, emergency department visits, and laboratory fees.

METHODS

- A retrospective analysis was performed on data (2001 to 2006) from the Human Capital Management Services (HCMS) Research Reference Database consisting of approximately 510,000 employees representing the retail, service, manufacturing, and financial industries.
- Annual direct point-of-service costs were collected from claims data for doctor’s offices, inpatient hospitals, outpatient hospitals/clinics, emergency departments, laboratories, pharmacies, and other medical locations.
- Only employees with health claims identifying specific points of service were included in the analysis.
- Comparisons were made between 2 groups:
  - The insomnia group consisted of employees with a record of an insomnia diagnosis, identified by the presence of International Classification of Diseases, 9th Revision (ICD-9) diagnostic codes or prescriptions for a hypnotic agent.
  - ICD-9 codes used to identify employees with a primary, secondary, or tertiary diagnosis included 307.41 (transient disorder of initiating or maintaining sleep), 307.42 (persistent disorder of initiating or maintaining sleep), 307.49 (subjective insomnia), and 790.52 (insomnia).
- Hypnotic agents included ramelteon, zaleplon, zolpidem, and eszopiclone.
- The non-insomnia group (control) consisted of employees with no record of an insomnia diagnosis (ICD-9 codes) and no prescription for a hypnotic agent.
- The index date in the insomnia group was defined as the date of first diagnosis of insomnia or initial hypnotic prescription.
- The average index date in the insomnia group was used as the index date for the control group.
- Employees who were new to the analysis were required to be continuously employed and eligible for health benefits for at least 12 months after their index date.

RESULTS

- Direct point-of-service costs were compared between the insomnia and control groups for the following services:
  - Doctor’s office visits
  - Inpatient hospital visits
  - Outpatient hospital/clinic visits
  - Emergency department visits
  - Laboratory fees
  - Prescription drug costs
- Other (ambulance, home health care services)

Statistical Analysis

- A two-part regression analysis was used to compare the cost differences between the insomnia and control groups using separate regression models for each of the 7 outcomes measures.
- The models controlled for population differences in age, sex, marital status, race, exempt/non-exempt work status, full-time/part-time status, salary, comorbid mental disorders, Charlson Comorbidity Index, and geography (defined by the first digit of the employee’s postal zip code).
- All costs were adjusted to 2006 dollars.
- Demographic comparisons between groups were made using t-tests for continuous variables and chi-square ($\chi^2$) tests for binary variables.
- Differences were considered significant if $P<0.05$.

CONCLUSIONS

- Employees with insomnia incurred significantly higher total direct costs across every point of service compared with employees without insomnia.
- These results indicate an opportunity for improved management of employees with insomnia, which may result in reduced costs from an employer perspective.

REFERENCES