**BACKGROUND**

- Diabetes affects 8.3% of the U.S. population (25.8 million people), 7.0 million of whom are undiagnosed.
- In 2012, the total direct medical costs and costs due to reduced productivity associated with diagnosed diabetes were $77 billion and $171 billion, respectively.
- The risk of developing diabetic retinopathy (DR) and diabetic macular edema (DME) is increased in individuals with type 1 or type 2 diabetes mellitus.
- In the U.S., the diabetes is the main cause of new blindness cases in adults aged 20–74 years.
- This study assessed the impact of DME and DR on absence from work and health expenditures in U.S. employees, including commercial drivers, for whom good values is vital to maintain employment.

**PURPOSE**

- To compare the annual health benefit costs and absence days in Commercial Drivers and Non-driver U.S. employees with DME, DR, diabetes, or Controls without diabetes.

**METHODS**

- Retrospective analysis using the Health Care Cost Institute (HCCI) database.
- Study design:
  - All included employees had medical or drug eligibility.
  - Full-time employment, % 97.8, 97.4, 95.9, 93.1.
  - Hispanic 8.2, 1.2, 1.4, 7.5, 5.4.
  - Marital status, %
    - Single 42.6, 2.1, 41.9, 41.6, 46.7.
    - Not married 26.6, 8.7, 40.6, 31.9, 16.7.
- Tenure (index Dx date), years: 5.97, 1.12, 1.40, 1.08, 8.41.
- Charlson Comorbidity Index: 2.89, 0.07, 3.41, 0.03, 1.72.
- Degree of absence: 0–14 days, 15–29 days, 30–59 days, 60–149 days, >150 days.

**RESULTS**

- **Statistical Analysis**
  - Non-parametric based statistical tests were used to compare the demographics of the cohorts included in the analysis.
  - Logistic regression was used to model the likelihood of an outcome > 0.
  - Pearson’s chi-square tests were used to determine the absence days for the proportion of the population with an outcome > 0.
  - Stepwise methods were used to determine the variables to be included in the final model.

- **Comparisons of Annual Health Benefit Costs**
  - Total annual health benefit costs in Drivers with DME, DR, or diabetes were $29,862, $12,511, and $8,362, respectively.
  - In the Driver population, direct medical costs (medical and prescription costs) were significantly higher in employees in the DME, DR, or DMR cohorts vs. Controls (P < 0.05).
  - In the Non-driver population, sick leave and short-term disability were not significantly different in all cost cohorts, except DMR vs. DR (P < 0.05).
  - All employee absence categories in Drivers in the Diabetes cohort were significantly different from the Control cohort (P < 0.05).
  - No significant differences were reported between the DME and DR cohorts in either the Driver or Non-driver populations.

- **Comparisons of Absence Days**
  - The most common reason for employee absences in the DR and DME cohorts was short- and long-term disability among Drivers, and sick leave and short-term disability among Non-drivers.
  - While all included employees had medical or drug eligibility, the eligibility for indirect costs varied by element. Therefore, there was no direct method to calculate the significance of the total costs in total-days absence.

**LIMITATIONS**

- The study did not allow for direct comparisons between the Driver and Non-driver populations.
- Driver DME and DR cohort sizes were small, which limited its significant difference compared with the Diabetes Disease and Control cohorts.
- All while included employees had medical or drug eligibility, the eligibility for indirect costs varied by element. Therefore, there was no direct method to calculate the significance of the total costs in total-days absence.

**CONCLUSIONS**

- This study assessed the impact of DME and DR on absence from work and health expenditures in U.S. employees, including commercial drivers, for whom good values is vital to maintain employment.
- The analyses demonstrated the detrimental impact of DME and DR on employee health outcomes, particularly those employees who depend on good health in their professions.

**REFERENCES**


**CONCLUSIONS**

- The analyses demonstrated the detrimental impact of DME and DR on employee health outcomes, particularly those employees who depend on good health in their professions.
- The study included Controls, commercial drivers with DME or DR were $29,862 and $12,163 more expensive, respectively.
- These analyses will provide employers with the necessary information to assess the impact of DME and DR on employee productivity and costs.