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Health Care Utilization, Lost Work Days, and Bed Days Among U.S. Workers With COPD, by Industry and Occupation

Laura Kurth, PhD, **Girija Syamlal, MBBS, MPH**

Respiratory Health Division, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Morgantown, West Virginia (Dr Kurth and Dr Syamlal).

Abstract

Objective: To assess health care utilization, lost work days, and bed days among workers with chronic obstructive pulmonary disease (COPD) by industry and occupation.

Methods: The 2014 to 2018 National Health Interview Survey data were analyzed.

Results: Among workers with COPD the highest odds of reporting an emergency room (ER) visit and lost work days were observed among workers aged ≥65 years, females, those with no health insurance, and current combustible tobacco users. Workers with COPD in the information industry and computer and mathematical occupation reported highest odds of an ER visit and utilities industry workers reported highest odds for lost work days.

Conclusions: The high health care utilization and lost work days among workers with COPD in certain industries and occupations underscores the importance of continued surveillance and tailored interventions to reduce disease burden and improve worker health.

Keywords

chronic obstructive pulmonary disease; health care utilization; industry; National Health Interview Survey; occupation; productivity

Chronic obstructive pulmonary disease (COPD) is a leading cause of chronic disability and death in the United States.[1–3] The main cause of COPD is cigarette smoking; however, previous findings indicate that 2.4 million workers who never smoked have COPD and 19% of COPD cases are attributed to workplace exposures.[4,5] During 2011 to 2015, the estimated total annual medical expenditure attributable to the treatment of COPD among U.S. workers was $5 billion and average expenditures per worker varied by industry.[6] For example, the highest annual average per-person expenditure for COPD ($1819) was among workers in the public administration industry.[6] To assess the burden of COPD among U.S. workers, health

Address correspondence to: Laura Kurth, PhD, Surveillance Branch, Respiratory Health Division, NIOSH/CDC, 1000 Frederick Ln., Mailstop HG900.2, Morgantown, WV 26508 (lkurth@cdc.gov).

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care utilization, lost work days, and bed days associated with COPD by industry and occupation were examined.

METHODS

National Health Interview Survey (NHIS)[7,8] data are collected annually from a nationally representative sample of the civilian noninstitutionalized U.S. population through personal interviews. For the present study, NHIS data from 2014 to 2018, for adults aged ≥18 years were combined (combined sample n = 99,424) to improve the precision and reliability of estimates. Health care utilization, lost work days, and bed days among adults employed (ie, survey participants responding "working for pay at a job or business," "with a job or business but not at work," or "working, but not for pay, at a family owned job or business" when asked about their employment status at any time during the 12 months prior to the survey) were analyzed. Questionnaires, documentation, and data sets are publicly available at ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2018/srvydesc_paradata.pdf.

Workers were determined to have COPD if they had a positive response to any of the three questions asking if they were told by a doctor or other health professional that they ever had COPD, ever had emphysema, or had chronic bronchitis during the past 12 months. Health care utilization was determined among workers who reported ≥1 office visit (saw a doctor or other health care professional at least once in the past 12 months for your own health at a doctor's office, a clinic, or some other place), ≥1 emergency room (ER) visit (went to a hospital ER at least once in the past 12 months for your health), and having a usual place for routine or preventive care. Lost work days was determined among workers who reported ≥1 days missed work at a job or business because of illness or injury in the past 12 months and bed days was determined among workers who reported ≥1 days that illness or injury kept you in bed for more than half of the day in the past 12 months. Current combustible tobacco users were those that reported current ("everyday" or "someday") use of cigarettes and/or other combustible tobacco products (smoking cigars/little cigars/cigarillos, pipes, or water pipes/hookahs). Combustible tobacco non-users were those that reported not smoking 100 cigarettes during their lifetime and currently not smoking or that reported ever using combustible tobacco products and smoking "not at all" at the time of the survey. Industry and occupation information were available for 21 North American Industry Classification System-based major industry groups and 23 Standard Occupational Classification major occupation groups.[9] Participants with unknown and missing information for COPD were excluded (n = 33) from the analysis.

Data were adjusted for nonresponse and weighted to be nationally representative. Variance estimates were calculated to account for the complex survey design. The estimates with a relative standard error ([standard error/estimate] *100) ≥30% were considered unreliable and were not reported. Prevalence odds ratios (PORs) with 95% confidence intervals (CIs) were adjusted for gender, race/ethnicity, and smoking status. Analyses were done using SAS version 9.4 (SAS Institute Inc, Cary, NC).

RESULTS

During 2014 to 2018, an estimated (annual average) 6 million of 166 million workers (3.6%) had COPD (data not shown). Overall, 18% of all workers and 34% of workers with COPD were current combustible tobacco users. Workers with COPD were more likely to have: ≥1 office visit (POR = 2.2; 95% CI:1.9–2.6) (mean and range of visits with COPD = 3.2 [3.1–3.3]; no COPD = 2.1 [2.1–2.2]), ≥1 ER visit (POR = 2.7; 95% CI:2.5–3.0) (mean visits with COPD = 1.7 [1.6–1.8]; no COPD = 1.4 [1.4–1.5]), a usual place to go for routine or preventive care (POR = 1.3; 95% CI:1.1–1.4), lost work days (POR = 1.8; 95% CI:1.7–2.0) (mean days with COPD = 8.3 [7.3–9.3]; no COPD = 2.1 [2.1–2.2]), and bed days (POR = 2.1; 95% CI:1.8–2.4) (mean days with COPD = 6.4 [5.4–7.4]; no COPD = 2.0 [1.9–2.1]), compared to workers with no COPD.

Health care utilization, lost workdays, and bed days among workers with COPD were significantly higher among those aged ≥45 years, females, non-Hispanic whites, and current combustible tobacco users compared with workers aged 18 to 24 years, males, Hispanics, and combustible tobacco non-users, respectively. Non-Hispanic black workers with COPD had higher odds of reporting ≥1 office visit, a usual place for routine or preventive care, lost work days, and bed days compared to Hispanic workers. Workers without health insurance coverage and with COPD were more likely to have lost work days and bed days compared to workers with health insurance coverage (Table 1).

By industry, transportation and warehousing industry workers had the highest prevalence of COPD (4.6%) (Table 2). In most industry groups, workers with COPD had significantly higher odds of reporting ≥1 office visit and ≥1 ER visit than those with no COPD (Table 2). Finance and insurance industry workers (POR = 4.0; 95% CI: 1.6–9.6) had the highest odds of ≥1 office visit and information industry workers (POR = 4.2; 95% CI: 2.3–8.0) had the highest odds of ≥1 ER visit. Workers with COPD in the information (POR = 2.9; 95% CI: 1.2–7.3), finance and insurance (POR = 2.2; 95% CI:1.1–4.3), and manufacturing (POR = 1.8; 95% CI: 1.1–3.0) industries were more likely to report a usual place for routine or preventive care. Utilities industry workers were more likely to report lost work days (POR = 5.5; 95% CI:1.7–17.6) and bed days (POR = 6.2; 95% CI:2.1–18.1).

By occupation, workers in the personal care and service occupation group had the highest prevalence of COPD (4.9%) followed by workers in building and grounds cleaning and maintenance (4.8%) and office and administrative support (4.8%) occupations (Table 2). In most occupation groups, workers with COPD had significantly higher odds of having ≥1 office visit or ER visit compared to those with no COPD. Workers in the computer and mathematical occupations had the highest odds of ≥1 office visit (POR = 4.5; 95% CI:1.5–13.8) and ≥1 ER visit (POR = 3.8; 95% CI:2.0–6.9). Workers with COPD in the production (POR = 2.0; 95% CI:1.1–3.7), management (POR = 1.6; 95% CI 1.0–2.5), and office and administrative support (POR = 1.6; 95% CI:1.1–2.2) occupations were more likely to report having a usual place for routine or preventive care. Workers in the farming, fishing, and forestry (POR = 3.5; 95% CI: 1.3–9.1) occupation were more likely to report lost work days, and workers in the installation, maintenance, and repair (POR = 4.3; 95% CI: 2.4–7.6) occupations were more likely to report bed days.

DISCUSSION

During 2014 to 2018, workers with COPD were more likely to have higher health care utilization and miss work and stay in bed because of illness or injury. Among workers with COPD, those aged ≥45 years and non-Hispanic whites had higher odds of reporting ≥1 office visit and ≥1 ER visit. Previous findings have indicated that these groups had high COPD prevalence and the highest annualized medical expenditures for treated COPD.[6]

Findings from our study indicated 88% of workers reported health insurance coverage and 3.6% of insured workers reported COPD compared to 3.4% among uninsured workers. The current findings indicate health care utilization did not vary significantly by health insurance status but workers without health insurance were more likely to report lost work days and bed days. Health insurance status among workers may be partially explained by type of work arrangement. For example, the proportion of workers with no health insurance was higher among independent workers (21.7%; work as independent contractor, independent consultant, or freelance workers) and temporary or contract workers (21%).[10]

Previous findings show high prevalence of COPD was observed among workers in the transportation and warehousing; information; and finance and insurance industries and may be associated with higher tobacco use, workplace exposures, and worker demographics.[11,12] Workers with COPD in these industries were also more likely to have a usual place for routine or preventive care which may result in early identification of COPD cases or may indicate severe disease.[11] Increased health care utilization among workers with COPD was observed in most industries, and can be partly associated with COPD severity, including COPD exacerbations or disability status and presence of other comorbidities, based on previous findings.[12]

Utilities industry workers with COPD had the highest odds of reporting lost work days and bed days as compared to those with no COPD. According to Stellman,[13] workers in the utilities industry are exposed to dusts, diesel, fumes, and other exposures, which are associated with COPD and respiratory symptoms potentially resulting in lost work days or bed days. An estimated 24.1% of utilities industry workers were represented by unions or employee associations as opposed to 7.3% of employed private sector workers.[14] Union membership and workplace rules regarding sick days or time off work vary by industry and occupation and may help explain differences in lost work days and bed days.

This study has some limitations. Information on COPD, health care utilization, lost work days, and bed days was self-reported and not validated by medical records or work records. Despite combining survey data for multiple years, some groups still had small numbers resulting in unreliable estimates. The study only included workers employed any time in the 12 months prior to the survey. Those no longer working due to severe COPD may not be accounted for and the prevalence of COPD may be underestimated. Health care utilization, lost work days, and bed days are due to any illness or injury and may not be associated with COPD or COPD comorbidities. The cross-sectional design of the survey prevents an assessment of the association between COPD and increased health care utilization, lost work days, and bed days.

CONCLUSION

Current findings indicate that workers with COPD in certain industry and occupation groups had significantly higher likelihood of ≥1 office visit, ≥1 ER visit, lost work days, and bed days compared to workers with no COPD within the same industry or occupation. Identifying workplace risk factors for COPD and related disabilities or comorbidities and tailoring prevention and intervention strategies to workers may help improve worker health, and ultimately reduce health care utilization, lost work days, and bed days.

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Clinical significance:

Workers with COPD in most industry and occupation groups had significantly higher odds of reporting an office visit or ER visit compared to those with no COPD.

TABLE 1.

Estimated Number of Workers, COPD Cases and Prevalence Odds Ratios (POR) for Healthcare Utilization, Lost Work Days, and Bed Days Among Workers with COPD, by Sociodemographic Characteristics, NHIS 2014 to 2018

	Estimated workers*	Estimated COPD cases	≥1 Office visit		≥1 ER visit		Routine/preventive care		Lost work days		Bed days	
Socio–demographic characteristics	***N* × 1000**	***N* × 1000 (%)**	**POR**	**95% CI**	**POR**	**95% CI**	**POR**	**95% CI**	**POR**	**95% CI**	**POR**	**95% CI**
Total	166,461	5966 (3.6)										
Age–group (yrs)												
18–24	22,521	471 (2.1)	1.0		1.0		1.0		1.0		1.0	
25–44	71,161	1714 (2.4)	1.0	0.8–1.2	1.3	1.0–1.8	1.1	0.8–1.4	1.0	0.8–1.4	1.1	0.8–1.5
45–64	62,299	2960 (4.8)	1.9	1.5–2.4	2.7	2.0–3.7	2.2	1.7–2.9	2.2	1.7–2.9	2.3	1.7–3.0
≥65	10,480	821 (7.8)	3.2	2.6–4.1	4.2	3.0–6.0	3.8	2.9–5.0	3.7	2.7–5.0	3.8	2.8–5.3
Gender												
Male	87,227	2513 (2.9)	1.0		1.0		1.0		1.0		1.0	
Female	79,233	3453 (4.4)	1.6	1.4–1.7	1.6	1.3–1.8	1.6	1.5–1.8	1.6	1.4–1.8	1.5	1.3–1.8
Race/Ethnicity												
Hispanic	27,525	561 (2.0)	1.0		1.0		1.0		1.0		1.0	
White, non-Hispanic	107,330	4507 (4.2)	1.5	1.2–1.7	1.5	1.1–2.0	1.5	1.2–1.7	1.3	1.1–1.6	1.3	1.1–1.7
Black, non-Hispanic	19,879	671 (3.4)	1.4	1.1–1.8	1.3	0.9–1.8	1.4	1.1–1.7	1.3	1.0–1.8	1.4	1.1–1.9
Other	11,727	227 (1.9)	0.9	0.7–1.2	1.0	0.6–1.7	0.7	0.5–0.9	0.9	0.7–1.3	1.0	0.7–1.4
Health insurance status												
Not insured	19,841	680 (3.4)	1.1	1.0–1.3†	1.0	0.9–1.4	1.0	0.9–1.2	1.3	1.1–1.6	1.3	1.1–1.5
Insured	145,599	5260 (3.6)	1.0		1.0		1.0		1.0		1.0	
Unknown	1021	–	–	–	–	–	–	–	–	–	–	–
Combustible tobacco use												
Current	30,755	2035 (6.6)	2.9	2.7–3.2	2.7	2.3–3.2	2.9	2.7–3.3	2.8	2.5–3.3	2.9	2.5–3.3
Non-users	135,298	3909 (2.9)	1.0		1.0		1.0		1.0		1.0	
Unknown	408	–	–	–	–	–	–	–	–	–	–	–

PORs adjusted for age, gender, race/ethnicity, and smoking status.

Unreliable estimates are not reported and indicated by –.

Definition: ≥1 office visit (saw a doctor or other health care professional at least once in the past 12 months about your own health at a doctor's office, a clinic, or some other place); ≥1 ER visit (went to a hospital ER at least once in the past 12 months for your health); routine/preventive care (having a usual place for routine or preventive care); lost work days (≥1 days missed work at a job or business because of illness or injury in the past 12 months); bed days (≥1 days that illness or injury kept you in bed for more than half of the day in the past 12 months).

CI, confidence interval; COPD, chronic obstructive pulmonary disease; ER, emergency room; NHIS, National Health Interview Survey; POR, prevalence odds ratios.

*Workers were adults 18 years of age and older employed at any time during the 12 months prior to the survey.

†Not significant due to rounding.

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TABLE 2.

Estimated Number of Workers, COPD Cases and Prevalence Odds Ratios (POR) for Health Care Utilization, Lost Work Days, and Bed Days Among Workers with COPD Compared to Workers with No COPD, by Industry and Occupation, NHIS 2014 to 2018

	Estimated workers*	Estimated COPD cases	≥1 Office visit	≥1 ER visit	Routine/preventive care	Lost work days	Bed days
Industry	***N* × 1000**	***N* × 1000(%)**	**POR (95%CI)**	**POR (95%CI)**	**POR (95%CI)**	**POR (95%CI)**	**POR (95%CI)**
Agriculture, forestry, fishing, and hunting	2335	77 (3.3)	3.0 (1.3–6.7)	1.5 (0.8–3.0)	2.5 (0.9–6.9)	2.0 (1.1–3.6)	3.3 (1.7–6.5)
Mining	901	31 (3.4)	–	–	–	0.8 (0.3–1.8)	1.3 (0.5–3.6)
Utilities	1421	44 (3.1)	2.5 (0.6–9.9)	–	2.4 (0.6–8.7)	5.5 (1.7–17.6)	6.2 (2.1–18.1)
Construction	10,803	365 (3.4)	2.7 (1.8–3.9)	2.4 (1.6–3.5)	1.2 (0.7–1.8)	2.1 (1.5–3.0)	2.9 (2.0–4.0)
Manufacturing	16,293	514 (3.2)	2.4 (1.7–3.4)	2.7 (2.0–3.6)	1.8 (1.1–3.0)	1.6 (1.2–2.2)	2.0 (1.5–2.6)
Wholesale Trade	3976	141 (3.5)	3.7 (1.5–9.4)	3.6 (2.0–6.7)	1.8 (0.9–3.9)	1.9 (1.1–3.3)	2.8 (1.5–5.0)
Retail Trade	16,848	611 (3.6)	2.2 (1.6–3.0)	3.1 (2.3–4.2)	1.1 (0.8–1.6)	1.7 (1.3–2.3)	1.8 (1.4–2.4)
Transportation and Warehousing	7031	323 (4.6)	1.9 (1.2–3.0)	3.1 (2.0–4.9)	1.7 (1.0–2.9)	1.9 (1.3–2.8)	1.9 (1.2–2.9)
Information	3265	139 (4.3)	2.7 (1.0–6.8)	4.2 (2.3–8.0)	2.9 (1.2–7.3)	3.5 (1.9–6.5)	2.6 (1.4–4.7)
Finance and Insurance	7498	254 (3.4)	4.0 (1.6–9.6)	2.1 (1.3–3.3)	2.2 (1.1–4.3)	1.8 (1.2–2.8)	2.7 (1.7–4.2)
Real Estate and Rental and Leasing	3333	93 (2.8)	2.4 (1.0–6.1)	2.7 (1.4–5.1)	1.1 (0.5–2.5)	1.8 (1.0–3.3)	3.0 (1.7–5.5)
Professional, Scientific, and Technical Services	12,892	370 (2.9)	3.2 (1.7–5.9)	3.0 (2.1–4.2)	0.9 (0.6–1.5)	2.1 (1.4–3.0)	2.1 (1.5–2.9)
Administrative and Support and Waste Management and Remediation Services	7402	301 (4.1)	2.0 (1.3–3.0)	1.9 (1.3–2.8)	1.2 (0.8–1.9)	2.3 (1.6–3.3)	2.1 (1.5–3.1)
Education Services	16,007	533 (3.3)	3.1 (1.7–5.5)	3.1 (2.3–4.2)	1.0 (0.7–1.5)	1.8 (1.4–2.3)	2.2 (1.7–3.0)
Health Care and Social Assistance	22,499	891 (4.0)	2.9 (2.0–4.1)	2.9 (2.3–3.6)	1.3 (0.9–1.8)	1.7 (1.3–2.1)	1.8 (1.4–2.2)
Arts, Entertainment, and Recreation	3632	139 (3.8)	3.4 (1.3–8.9)	1.2 (0.6–2.3)	1.0 (0.5–2.3)	1.6 (0.9–2.8)	1.8 (1.0–3.2)
Accommodation and Food Services	11,393	421 (3.7)	1.9 (1.4–2.7)	3.4 (2.4–4.7)	1.1 (0.8–1.7)	2.2 (1.5–3.1)	2.3 (1.6–3.3)
Other services (except Public Administration)	8027	309 (3.8)	2.1 (1.3–3.2)	1.5 (1.0–2.2)	1.0 (0.5–1.8)	1.9 (1.3–2.8)	2.7 (1.8–4.1)
Public Administration	8045	339 (4.2)	1.8 (1.0–3.2)	2.9 (2.0–4.2)	1.9 (1.0–3.8)	1.3 (0.9–1.9)	1.8 (1.2–2.6)
Occupation							
Management	16,308	492 (3.0)	3.7 (2.2–6.2)	3.0 (2.2–4.0)	1.6 (1.0–2.5)	1.9 (1.4–2.6)	2.0 (1.5–2.6)
Business and Financial Operations	8734	297 (3.4)	2.7 (1.3–5.5)	3.2 (2.1–4.9)	1.2 (0.6–2.1)	1.8 (1.2–2.7)	2.3 (1.5–3.4)
Computer and Mathematical	5874	132 (2.2)	4.5 (1.5–13.8)	3.8 (2.0–6.9)	0.8 (0.4–1.8)	1.7 (1.0–3.1)	2.1 (1.2–3.6)
Architecture and Engineering	3682	63 (1.7)	0.9 (0.4–2.2)	2.5 (1.1–6.1)	2.1 (0.7–5.7)	1.5 (0.8–3.1)	1.9 (1.0–3.8)
Life, Physical, and Social Science	1783	47 (2.6)	2.0 (0.5–8.0)	0.6 (0.1–3.0)	1.0 (0.3–3.3)	0.9 (0.3–2.5)	1.9 (0.8–4.4)

Industry	Estimated workers* $N \times 1000$	Estimated COPD cases $N \times 1000(\%)$	≥1 Office visit POR (95%CI)	≥1 ER visit POR (95%CI)	Routine/preventive care POR (95%CI)	Lost work days POR (95%CI)	Bed days POR (95%CI)
Community and Social Services	3061	106 (3.5)	–	2.7 (1.6–4.6)	0.8 (0.3–2.0)	2.2 (1.1–4.2)	2.6 (1.4–4.8)
Legal	1826	56 (3.1)	–	3.3 (1.3–8.1)	1.2 (0.3–5.2)	2.4 (1.0–5.7)	2.2 (1.0–5.1)
Education, Training, and Library	10,760	353 (3.3)	3.3 (1.7–6.5)	2.5 (1.8–3.7)	1.0 (0.6–1.6)	2.1 (1.5–2.9)	2.3 (1.6–3.3)
Arts, Design, Entertainment, Sports, and Media	3670	83 (2.3)	–	1.4 (0.7–2.8)	1.9 (0.6–6.3)	2.5 (1.3–4.9)	2.0 (1.0–3.9)
Healthcare Practitioners and Technical	9620	250 (2.6)	3.4 (1.5–7.6)	2.3 (1.4–3.7)	1.5 (0.8–2.7)	2.0 (1.2–3.1)	1.7 (1.1–2.5)
Healthcare Support	3909	165 (4.2)	2.3 (1.1–4.8)	3.4 (2.0–5.8)	2.3 (0.9–5.6)	1.7 (1.0–2.8)	1.8 (1.1–2.9)
Protective Service	3420	126 (3.7)	3.0 (1.2–7.5)	2.7 (1.5–4.8)	1.4 (0.5–3.8)	1.9 (1.1–3.5)	2.7 (1.5–4.8)
Food Preparation and Serving Related	8820	305 (4.0)	2.2 (1.5–3.3)	2.8 (1.9–4.1)	1.2 (0.8–1.8)	2.1 (1.4–3.1)	2.3 (1.6–3.4)
Building and Grounds Cleaning and Maintenance	6333	295 (4.8)	2.0 (1.3–2.9)	2.7 (1.9–3.9)	1.3 (0.8–2.0)	1.9 (1.3–2.7)	1.9 (1.3–2.8)
Personal Care and Service	5988	536 (4.9)	1.8 (1.1–2.9)	2.2 (1.5–3.4)	1.3 (0.8–2.2)	1.6 (1.1–2.3)	1.6 (1.0–2.3)
Sales and Related	16,082	959 (3.3)	1.9 (1.3–2.6)	3.0 (2.3–4.1)	1.1 (0.7–1.7)	1.7 (1.3–2.3)	2.0 (1.5–2.7)
Office and Administrative Support	20,031	36 (4.8)	3.2 (2.3–4.7)	2.9 (2.3–3.6)	1.6 (1.1–2.2)	1.8 (1.4–2.3)	2.3 (1.9–2.9)
Farming, Fishing, and Forestry	1324	249 (2.7)	3.4 (1.3–8.8)	2.5 (0.8–7.5)	2.7 (0.7–9.7)	3.5 (1.3–9.1)	2.1 (0.8–5.5)
Construction and Extraction	8287	227 (3.0)	2.6 (1.7–3.9)	2.7 (1.7–4.1)	1.4 (0.9–2.4)	1.9 (1.2–2.9)	2.6 (1.7–4.0)
Installation, Maintenance, and Repair	5231	317 (4.3)	1.5 (0.9–2.4)	2.0 (0.9–4.5)	0.7 (0.3–1.3)	3.2 (1.9–5.5)	4.3 (2.4–7.6)
Production	9305	452 (3.4)	2.6 (1.7–3.9)	2.4 (1.7–3.4)	2.0 (1.1–3.7)	1.8 (1.2–2.6)	2.1 (1.4–3.1)
Transportation and Material Moving	9720	10 (4.7)	2.5 (1.6–3.7)	2.4 (1.7–3.3)	1.3 (0.8–2.1)	1.7 (1.2–2.4)	2.2 (1.6–3.1)

PORs adjusted for age, gender, race/ethnicity, and smoking status.

Unreliable estimates are not reported and indicated by –.

Industry groups have not shown include management of companies and enterprises, armed forces, and those with unknown, unascertained industry and occupation due to unreliable estimates.

Definitions: ≥1 office visit (saw a doctor or other health care professional at least once in the past 12 months about your own health at a doctor's office, a clinic, or some other place); ≥1 ER visit (went to a hospital ER at least once in the past 12 months for your health); Routine/preventive care (having a usual place for routine or preventive care); lost work days (≥1 days missed work at a job or business because of illness or injury in the past 12 months); bed days (≥1 days that illness or injury kept you in bed for more than half of the day in the past 12 months).

CI, confidence interval; COPD, chronic obstructive pulmonary disease; ER, emergency room; NHIS, National Health Interview Survey; POR, prevalence odds ratios.

*Workers were adults 18 years of age and older employed at any time during the 12 months prior to the survey.