



## Original Contribution

## Paid sick leave is associated with fewer ED visits among US private sector working adults



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## ABSTRACT

**Context:** The United States (US) is the only developed country that does not guarantee short-term or longer-term paid sick leave.

**Objective:** This study used a multiyear nationally representative database to examine the association between availability of paid sick leave and frequency of emergency department (ED) use among US private sector employees.

**Study sample:** We used the National Health Interview Survey data (2012–2014). The final study sample consists of 42,460 US adults between 18 and 64 years of age and working in nongovernmental private sector.

**Results:** Our results suggest that availability of paid sick leave is significantly associated with lower likelihood of ED use, for both moderate (1–3 times/year) and repeated users (4 or more times/year). After controlling for confounding factors, respondents with paid sick leave are 14% less likely to be moderate ED users (adjusted odds ratio, 0.86; 95% CI, 0.79–0.93) and 32% less likely to be repeated ED users (adjusted odds ratio, 0.68; 95% CI, 0.50–0.91).

**Discussion:** Although expansion of health insurance coverage under the Affordable Care Act has not been shown to reduce utilization of high cost health care services such as the ED, our study suggests other factors such as the availability of paid sick leave may do so, by allowing patients to seek care through other more cost-effective mechanisms (eg, primary care providers). To reduce ED utilization, health policymakers should consider alternative reforms including paid sick leave.

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## 1. Introduction

Emergency department (ED) use is a major contributor to health care costs in the United States (US). The Affordable Care Act (ACA) has increased the number of Americans with health insurance through Medicaid expansion or health insurance exchanges [1]. However, the effect of increased access to health insurance on ED utilization remains unclear. Although there is some evidence of reduced ED utilization, especially among younger adults [2,3], high-volume ED use by the newly insured patients is an unaddressed concern [4]. Evidence from Massachusetts and Oregon suggests an increase in ED use after Medicaid expansion [5,6].

Improved access to health insurance through ACA may not reduce ED utilization unless other economic barriers to regular primary care access are addressed (eg, availability of paid sick leave). The US is the only industrialized country in the world that does not provide paid sick leave for employees [7]. It is estimated that more than 40 million private sector workers in the US did not have access to paid sick leave in 2015 [8]. Although some US states and cities have passed regulations or are currently proposing legislation to guarantee paid sick leave, there is no federal requirement. On the eve of Labor Day, 2015, President Obama signed an executive order to enact a federal law requiring the private sector companies that work with the federal government to provide annual paid sick leave up to 7 days or more to employees, including paid leave allowing for preventive care, family care, child care, and parent care [9].

Empirical research has shown that paid sick leave is associated with cost saving for employers, higher employee retention, healthier workforce, and overall job growth [10–14]. One recent survey found

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that 9 in 10 US workers, across all political affiliations, favor a law guaranteeing workers up to 7 paid sick days per year. Nearly 1 in 4 workers report that they have lost jobs or were threatened with job termination for taking time off due to personal or family illness [15]. Evidence also suggests that availability of paid sick leave allows employees to access preventive care and may reduce overall health costs and improve outcomes. One previous study found that US workers with paid sick leave were more likely to undergo screening for five different types of cancers [16]. Another recent study found that a higher percentage of female US workers with paid sick leave received mammography as compared to those without paid sick leave [17]. Although paid sick leave can reduce the number of ED visits, mainly through allowing individuals to see a regular provider and timely access to preventive care, the relationship is not very clear. A study conducted before ACA implementation attempted to examine the relationship between paid sick days and ED visits for US working adults. However, the study did not find any significant relationship at that time. One important limitation of this study was that it included all US working adults. However, public sector employees are more likely (around 90%) to have paid sick leave benefits; therefore, including these public sector employees in the study sample likely diluted the effect of paid sick leave [18].

Our study uses a multiyear nationally representative database from the years following the passage and implementation of the ACA to examine the association between availability of paid sick leave and ED utilization among US private sector employees. Guided by the Andersen Model for health services utilization, we hypothesize that the availability of paid sick leave is associated with a reduced frequency of ED utilization among US private sector employees.

## 2. Study data and methods

### 2.1. Data and sample

We used the most recent 3 years (2012–2014) of data from the US National Health Interview Survey (NHIS), maintained by the National Center for Health Statistics. The NHIS is an annual cross-sectional household survey that covers the civilian noninstitutionalized population residing in the US at the time of interview.

The NHIS collected household interview data from 2012 to 2014 and includes 105 779 adults (age  $\geq 18$  years). The sample is nationally representative and obtained by using a stratified multistage probability study design with unequal probabilities of selection. Specific subgroups of people are purposefully oversampled by the NHIS, including racial/ethnicity minorities. New households are surveyed each year, with each year's cohort selected to estimate health and health care characteristics of the entire US population. Strategies for sampling and methodologies for data collection were very similar to maintain consistency and facilitate comparison throughout the selected NHIS years (<http://www.cdc.gov/nchs/nhis.htm>).

We used 3 components of NHIS data linked together in the study, including adults sample file, person file, and family file. We further restricted our sample to current adult working population with age between 18 and 64 years in private sectors, and 47 888 adults were left. After deleting all observations with missing values, our final analytical sample was 42 460.

### 2.2. Measures

Our outcome variable was the number of ED visits within past year. Respondents were asked the question "During the past 12 months, how many times have you gone to a hospital emergency department (this includes emergency department visits that resulted in a hospital admission)?," with possible answers "none," "1," "2-3," "4-5," "6-7," "8-9," "10-12," "13-15," "16 and more," "don't know," and "refuse". We divided our respondents into 3 groups ordered by the frequency of ED use: nonusers (0 visits), moderate users (1-3 visits), and frequent users

( $\geq 4$  visits). This classification is based on prior research that suggests 4 or more ED visits a year as frequent visitor [19–21]. The key independent variable in our study was whether employers in private sector offered paid sick leave benefits to the respondents. It is a dichotomized variable, based on survey question "Did you ever have paid sick leave on the job you held most recently?"

Based on Andersen Model of health services utilization, all the covariates were grouped under predisposing, enabling, and need factors [22]. Predisposing factors include demographic and sociocultural factors that may influence an individual's need for health services, including respondents' age, sex, marital status, and race/ethnicity. Age was categorized into 3 groups as 18 to 34, 35 to 49, and 50 to 64 years old; sex, as male and female; marital status, as married and not currently married/never married; and race/ethnicity, as non-Hispanic White, non-Hispanic Black, Hispanic, and non-Hispanic others.

Enabling factors include the availability of resources at an individual or societal level to seek healthcare. Enabling factors included respondents' educational attainment, poverty level, health insurance status, usual source of care, physician refusal to accept them as new patients or accept their insurance, respondents' ability to afford mental health care, and use of Internet to access health information. Respondents' educational attainment was categorized into less than high school, high school, and college and above. Poverty level was calculated by poverty-income ratio that was calculated as per the NHIS as the ratio of family income to the poverty threshold for a family of that size, with a poverty-income ratio less than 1 being defined as poverty. We categorized health insurance status into 3 groups as no insurance, private insurance, and public insurance without private insurance. Usual source of care (having a place, rather than ED, that respondents usually go to when they are sick or need advice about health), physician refusal to accept them as new patients or their health insurance, and respondents' ability to afford needed mental care were all dichotomized.

Finally, the need factors refer to an individual's knowledge and value about previous medical problems and attitude regarding whether or not they need health services. The need factors examined in this study included respondents' number of comorbidity conditions, body mass index (BMI), smoking status, alcohol use, and number of physician office-based visits in last 12 months. The NHIS survey asked about specific chronic disease conditions based on the relative prevalence in the US adult population and potential for increased primary care and ED utilization, including diabetes, heart disease, asthma, and cancer. We categorized respondents into three groups: with no comorbidity, 1 comorbidity, and 2 or more comorbidities. We divided BMI into four quartiles for degree of obesity. Self-reported smoking status as current smoker vs. other and alcohol use as modest/heavy drinker vs. other were ascertained. NHIS did not reliably measure other types of substance abuse. The number of physician office-based visits was categorized as no visit vs. 1 or more visits within past 12 months.

### 2.3. Analysis

The unit of analysis is the individual respondent. We conducted descriptive analyses comparing paid sick leave benefit, predisposing, enabling, and need factors by frequency of ED visits.  $\chi^2$  Tests were used to examine bivariate association between frequency of ED visits and independent variables. We further used multivariate logistic regressions to model the association between ED visits and paid sick leave, controlling for other covariates. Two models were constructed, one with the outcome of interest being 1 to 3 ED visits (moderate) and the other with the outcome of interest being greater than or equal to 4 ED visits (repeated use). Both models had no ED visits as the reference group. The analyses were adjusted for the complex survey design to get nationally representative estimates. We performed all the statistical analyses using Stata SE 13.0 (College Station, TX).

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