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Research Paper

Medical expenditures associated with nonfatal occupational injuries among U.S. workers reporting persistent disabilities

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Abstract

Background: No prior study has investigated the medical expenditures associated with occupational injuries among U.S. workers with persistent disabilities, including those with physical disabilities or cognitive limitations.

Objective: Using the 2004–2011 Medical Expenditure Panel Survey (MEPS) data (Panels 9–15), we estimated the 2-year incidence and the expenditures associated with occupational injuries in U.S. workers with and without persistent disabilities.

Methods: Expenditures were compared by type of service and sources of payment. We estimated the mean medical expenditures using linear regression analysis to adjust for sociodemographics. The statistical analysis accounted for the sample survey design of MEPS and the highly skewed expenditure data.

Results: The 2-year cumulative incidence of occupational injuries was 13.6% (95% CI: 11.6%–15.6%) in workers with persistent disabilities and 7.1% (95% CI: 6.8%–7.4%) in workers without persistent disabilities. The average medical expenditure associated with new occupational injuries in the 2-year follow-up period was $3778 in workers with disabilities, $2212 in workers without disabilities after adjusting for sociodemographics and medical insurance coverage status (in 2011 U.S. dollars, p-value = 0.0004). Of the total expenditures for occupational injuries, workers' compensation paid 54.6% in workers with disabilities and 58.9% in workers without disabilities. There was no significant difference in the proportion of injured workers with and without disabilities who reported receiving workers' compensation benefits (46.7% vs. 48.2%, p-value = 0.718).

Conclusions: Workers with persistent disabilities had a significantly higher incidence of occupational injuries and higher medical costs compared with workers without persistent disabilities. Many questions with regard to occupational safety and worker's compensation benefits in workers with disabilities remain unexplored.

Keywords: Health care expenditure; Occupational injury; Disability; Functional limitations; Activity limitations

The 2010 American Community Survey (ACS) estimated that 10% of the U.S. adult population lives with disabilities (19.6 million people ages 18–64 years).[1] According to the U.S. Department of Labor, in January 2014, 4.5 million people with disabilities aged 16 and above are employed.[2] Due to the aging of the workforce, the numbers of workers with disabilities will likely increase in the coming years.[3] In the U.S., significant legislation and federal initiatives have sought to improve the employment opportunities for those with disabilities.[4,5] Alongside improving opportunities for employment for those with disabilities, occupational safety concerns should be addressed.

Prior research has found that individuals with disabilities report more nonfatal occupational injuries when compared to those without disabilities.[6–14] Our previous study, using 10 years data of National Health Interview Survey (NHIS), reported that the adjusted odds of nonfatal occupational

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injuries among U.S. workers with disabilities was 2.39 times higher than the odds of occupational injuries in workers without disability.[10] Most previous studies have used a cross-sectional study design, and both disability status and injury events are self-reported by respondents at the time of the interview.[7,8,10]

In this study, we used Medical Expenditure Panels Survey (MEPS) longitudinal data. Respondents in each MEPS panel were asked about medical events including occupational injuries and the related medical expenditures in 5 rounds of interviews during a 2-year follow-up period after the date when respondent was enrolled in the MEPS. Use of longitudinal data with interviews at regular time intervals likely minimizes recall error of self-reported injuries. Additionally, use of the MEPS dataset also allowed us to examine the medical expenditures associated with occupational injuries.

We did not find any prior studies that examined differences between workers with and without disabilities with regard to the health care expenditures associated with occupational injuries. Some researchers have reported that people with disabilities have poorer health and access medical services more often than people without disabilities.[15,16] Lysaught found that workers with cognitive disabilities had fewer injury-related workers' insurance claims reported than workers without cognitive disabilities.[17] Currently, it remains unknown: 1) if the average medical expenditures per occupational injury is higher in workers with persistent disabilities; 2) whether workers with disabilities are less likely to receive workers' compensation benefits after an occupational injury compared with workers without disabilities.

This study was conducted to (1) compare the incidence rate of occupational injuries among U.S. workers with and without disabilities using MEPS longitudinal data, (2) estimate the average expenditures associated with occupational injuries within a 2-year follow-up period, and (3) compare expenditure distributions by service type and payment sources between workers with and without persistent disabilities. We hypothesized that workers with persistent disabilities were significantly less likely to receive workers' compensation benefits after occupational injuries. Our hypothesis was based on prior literature that has reported a lack of correspondence between work-related disability and receipt of workers' compensation benefits.[18] Many barriers have been found that limit injured workers abilities to access workers' compensation benefits.[18–20]

Methods

Data source

The MEPS is conducted annually and is cosponsored by the Agency for Healthcare Research and Quality (AHRQ) and the National Center for Health Statistics (NCHS).[21] It provides national estimates of health care use, insurance coverage, medical expenditures and sources of payment for the civilian non-institutionalized population. MEPS has a major household component (MEPS-HC). MEPS-HC obtains data from a nationally representative sample of households through an overlapping panel design in which new respondents are sampled and recruited from the National Health Interview Survey (NHIS). Each year the newly recruited respondents become part of a new panel and are then interviewed 5 times over a 2.5-year period. Respondents are questioned about medical expenditures incurred in a 2-year follow-up period, starting on the date of first interview. An additional component of MEPS, the medical provider component (MPC) supplements and corroborates information received from the MEPS-HC component. In this study, we pooled together 7 panels of MEPS data (the time period of pooled data spans 8 years, from 2004 to 2011). Within each panel, households are approached in different rounds. Each round of MEPS-HC interviews collects information pertaining to a specific follow-up period, so that the follow-up period is dependent upon the Panel and Round the respondent was surveyed. See the link for additional clarification: http://meps.ahrq.gov/mepsweb/survey_comp/hc_data_collection.jsp.

Human participant protection

Survey data were collected with the informed consent of the respondents of the MEPS, following procedures approved by the Institutional Review Board of the National Center for Health Statistics. The Institutional Review Board of the Research Institute at Nationwide Children's Hospital reviewed our study protocol; it was approved with exempt status because all personal identifiers have been removed from the publicly available MEPS datasets.

Terms and definitions

Workers

Workers were defined as those aged 18–64 years who self-reported "currently employed", "has a job to return to", or "employed any time during the reference period" in any round of the 5 MEPS interviews.

Persistent disabilities

The World Health Organization's International Classification of Functioning, Disability and Health (ICF)[22] considers impairments, activity limitations, and participation restrictions and also emphasizes the roles of the environmental and personal factors. The 2004–2011 MEPS utilized ICF concepts, and there were groups of questions associated with impairments, limitations and participation restrictions that were asked in the different interview rounds. Some questions were asked each of the five rounds; other questions were asked in two or three of the rounds:[21]