



**A Substance Use Cost Calculator for  
U.S. Employers:  
Overview of Data Sources and  
Analytic Approach**

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Substance use disorders<sup>i</sup> (SUDs) are among the most common and costly health conditions affecting working Americans and their families. How substance use impacts employers and workplaces may not be apparent to individual employers. [The Real Costs of Substance Use in Your Workforce](#) is an authoritative, easy-to-use tool designed to provide employers with specific information about how alcohol, prescription pain medication misuse, opioid use and illicit drug use impact their workplaces. It also provides research-proven steps employers can take to help employees and their family members who have substance use problems and, at the same time, increase the safety, health and productivity of their workforces.

## **Sources of Data**

Data from the four most recent annual Federal epidemiologic surveys form the primary source for the Calculator. The Substance Abuse and Mental Health Services Administration (SAMHSA) conducts the [National Survey on Drug Use and Health](#). Each year, a nationally representative sample of approximately 69,000 persons ages 12 and above is interviewed about lifetime, annual and past month use of alcohol, cannabis, cocaine, hallucinogens, heroin, inhalants, tobacco, pain relievers, tranquilizers, stimulants and sedatives. The NSDUH survey also covers mental and physical health symptoms, history of substance use and mental health treatment, health care utilization, and health insurance coverage. Demographic data includes gender, race, age, ethnicity, educational level, job status, workplace characteristics and income. SAMHSA releases public use data (PUD) files about 18 months after announcing summary results of the annual survey. The PUD files for the four years contain weighted, anonymized data from approximately 210,000 adolescents and adults. The research team analyzed the 2015-2018 NSDUH PUD respondents employed full- or part-time.

## **Estimating the Prevalence of SUDs by Industry and Occupation**

Most people with SUDs work. Through 2014, the NSDUH elicited information about employment status, industry sector and occupation. Respondents were assigned to one of 16 industry sectors based on their current job and to one of 14 occupational categories. The proportion of NSDUH respondents who reported working in the various industries and occupations is generally consistent with proportions reported by the Bureau of Labor Statistics.<sup>ii</sup> The prevalence of SUDs among workers in each industry sector and occupational category from the 2012-2014 NSDUH was used as the baseline for the calculator. Industry- and occupation-specific rates were adjusted to account for

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changes in the prevalence of SUDs nationwide between 2012-2014 and 2015-2018, and differences between states in their substance use rates.

## ***Workdays Missed***

The NSDUH asks respondents how often they missed work due to illness and injury or skipped work in the past 30 days. Responses are summed and annualized to measure the total number of missed workdays per year. The costs of missed days were computed from the most recently available U.S. Bureau of Labor Statistics estimates of hourly wage plus fringe for each industry sector.<sup>iii</sup>

## ***Health Care Use***

NSDUH respondents are asked many questions about medical, substance use and mental health services they received in the 12 months prior to the survey. Costs of medical services are derived from Federal surveys<sup>iv</sup> and large commercial health plan data sources<sup>v</sup> of paid claim amounts. All costs are expressed in 2019 dollars, using the Federal government's medical consumer price index<sup>vi</sup> and drug price index<sup>vii</sup> to bring costs to 2019 levels.

## ***Turnover, Replacement and Training<sup>viii</sup>***

Employed NSDUH respondents are asked how many employers they had in the prior 12 months. Research places the average cost to employers of recruiting and training replacement workers at 21 percent of an employee's annual fully loaded salary.<sup>ix</sup> For the Calculator, employers' turnover costs are computed from the difference in rates of one year turnover in each industry sector of workers with and without an SUD in the previous year, and workers in recovery in that sector.

## ***Other Impacts on Work***

NSDUH asks additional questions associated with risk taking that can affect workplace productivity and safety. The survey asks respondents: "How often do you like to test yourself by doing something a little risky?" and "How often do you get a real kick out of doing things that are a little dangerous?" Participants in the survey are asked whether they had driven under the influence of alcohol, cannabis and/or illicit drugs in the previous 12 months. They are also asked how likely they are to drive without wearing a seat belt.

## ***Focused Issue Briefs***

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To explore these and other topics, the National Safety Council and NORC created brief reports on the following:

- Substance Use Disorders by Occupation
- How Workers with Active Substance Use Disorders Impact Employer Health Care Costs
- Turnover and Substance Use: What It Costs and What Can Be Done
- Short-Term Disability, Long-Term Disability and Return to Work
- Prescription Opioids and Work
- Substance Use, Gender and Sexual Orientation
- Substance Use: Prevention, Screening Tools and Workplace Policies
- Substance Use Disorder Treatment
- Cannabis and the Workplace
- Driving Under the Influence

<sup>i</sup> Substance use disorder (SUD) is a condition in which the use of one or more substances leads to a clinically significant impairment or distress. SUDs can include any psychoactive drug, for example alcohol, prescription pain medications, heroin, cocaine and marijuana.

<sup>ii</sup> Henderson R. Industry employment and output projections to 2024. Monthly Lab. Rev. 2015;138:1.

<sup>iii</sup> Bureau of Labor Statistics Economic News Release: Table B-3 Average hourly and weekly earnings of all employees on private nonfarm payrolls by industry sector, seasonally adjusted. <http://www.bls.gov/news.release/empsit.t19.htm>. Table 6. Employer costs per hour worked for employee compensation and costs as a percent of total compensation: Private industry workers, by major industry group, June 2016 <http://www.bls.gov/news.release/ecec.t06.htm>. The agricultural wage was derived from Fayer SD. Agriculture: occupational employment and wages. Monthly Lab. Rev. 2014;137:1. <http://www.bls.gov/opus/mlr/2014/article/agriculture-occupational-employment-and-wages.htm>.

<sup>iv</sup> [https://www.rand.org/pubs/research\\_reports/RR3033.html](https://www.rand.org/pubs/research_reports/RR3033.html). <https://www.hcup-us.ahrq.gov/faststats/NationalTrendsServlet?measure1=04&characteristic1=01&time1=10&measure2=03&characteristic2=01&time2=10&expandInfoState=hide&dataTablesState>. [https://www.cdc.gov/nchs/data/nhamcs/web\\_tables/2017\\_ed\\_web\\_tables-508.pdf](https://www.cdc.gov/nchs/data/nhamcs/web_tables/2017_ed_web_tables-508.pdf). [https://meps.ahrq.gov/data\\_files/publications/rf44/rf44.pdf](https://meps.ahrq.gov/data_files/publications/rf44/rf44.pdf) [https://www.cdc.gov/nchs/data/ahcd/namcs\\_summary/2016\\_namcs\\_web\\_tables.pdf](https://www.cdc.gov/nchs/data/ahcd/namcs_summary/2016_namcs_web_tables.pdf). Fee schedule for community/private mental health centers. Effective July 1, 2019. <http://www.medicaid.ms.gov/wp-content/uploads/2014/03/CommunityMentalHealthCenter.pdf>

<sup>v</sup> <https://healthcostinstitute.org/emergency-room/er-facility-prices-charges-2009-2016>. Olfson M, Marcus SC. National trends in outpatient psychotherapy. American Journal of Psychiatry. 2010 Dec;167(12):1456-63.

<sup>vi</sup> <https://www.healthsystemtracker.org/chart-collection/how-have-healthcare-prices-grown-in-the-u-s-over-time/#item-the-price-of-office-visits-has-risen-consistently-since-2003> "How have healthcare prices grown in the U.S. over time? By Gary Claxton, Matthew Rae Twitter, Larry Levitt Twitter, and Cynthia Cox CPI for All Urban Consumers (CPI-U)

[https://data.bls.gov/timeseries/CUSR0000SEMF01?output\\_view=pct\\_3mths](https://data.bls.gov/timeseries/CUSR0000SEMF01?output_view=pct_3mths) bureau of labor statistics Source: U.S. Bureau of Labor Statistics began tracking the Consumer Price Index for Medical care in 1947. In addition to medical care, the index produces monthly data on

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changes in prices paid by urban consumers for a variety of goods and services. <https://www.in2013dollars.com/Medical-care/price-inflation> ; <https://data.bls.gov/pdq/SurveyOutputServlet>

<sup>vii</sup> What are the recent and forecasted trends in prescription drug spending?

By Rabah Kamal, Cynthia Cox Twitter, and Daniel McDermott KFF

[https://www.healthsystemtracker.org/chart-collection/recent-forecasted-trends-prescription-drug-spending/#item-growth-in-price-and-utilization-of-pharmaceuticals-has-varied-over-time\\_2019](https://www.healthsystemtracker.org/chart-collection/recent-forecasted-trends-prescription-drug-spending/#item-growth-in-price-and-utilization-of-pharmaceuticals-has-varied-over-time_2019)

<sup>viii</sup> Fully loaded hourly and annual wages for all industry sectors other than mining and agriculture derived from “Employer Costs for Employee Compensation News Release December 18, 2019 USDL-19-2195 <https://www.bls.gov/news.release/pdf/ecec.pdf>: Mining wages from <https://www.bls.gov/iag/tgs/iag21.htm> Agriculture from <https://www.bls.gov/ooh/farming-fishing-and-forestry/agricultural-workers.htm>. Wages are adjusted to February 2020 from Bureau of Labor Statistics, U.S. Department of Labor, The Economics Daily, Real average weekly earnings <https://www.bls.gov/opub/ted/2020/real-average-weekly-earnings-up-0-point-7-percent-from-february-2019-to-february-2020.htm>.

<sup>ix</sup> Boushey H & Glynn S. There are significant business costs to replacing employees. Center for American Progress. 2012.

[https://cdn.americanprogress.org/wp-content/uploads/2012/11/16084443/CostofTurnover0815.pdf?\\_ga=2.88577565.74941316.1600721818-351640707.1600721818](https://cdn.americanprogress.org/wp-content/uploads/2012/11/16084443/CostofTurnover0815.pdf?_ga=2.88577565.74941316.1600721818-351640707.1600721818) Tracey JB, Hinkin TR. Contextual factors and cost profiles associated with employee turnover. Cornell Hospitality Quarterly 2008;49(1): 12-27.