



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

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The Mental Health Cost Calculator for Employers

Workers and their families are stressed. More than one in 10 American workers (16.2 million adults) had at least one episode of serious psychological distressⁱ in the previous 12 months. An additional 10.6 million Americans ages 12 to 65 years had at least one period of serious distress. The National Survey on Drug Use and Health (NSDUH)ⁱⁱ, a large federal survey, collects information annually on the mental health, substance use and health status of Americans.

Mental illness and stress are among the most common and costly health conditions affecting Americans and their families. Although 61% of American teens and adults experiencing serious psychological distress are part of the workforce, employers may be unaware of the hidden costs associated with these conditions. Workplaces bear significant costs due to absenteeism, increased health care expenses and turnover, and lost productivity.

The Mental Health Cost Calculator for Employers combines results from the 2015 to 2018 National Surveys on Drug Use and Health (NSDUH) with the latest research on the costs of mental health problems for employers. The calculator is an easy-to-use tool designed to provide employers with specific information about the likely extent of stress, depression and co-occurring stress and substance use in their workforces and among their employees' families. It identifies the specific ways that untreated distress impacts employers' costs and provides an estimate of the dollars lost in days of work missed, excess turnover and replacement costs, and greater health care use by distressed workers and family members. The calculator also provides research-proven steps employers can take to help employees and their family members recover, and at the same time, increase the safety, health and productivity of their workplaces.

Sources of Data

The primary data source for the Calculator is the public use data files from the four most recent years of the NSDUH. The Substance Abuse and Mental Health Services Administration (SAMHSA) surveys a nationally representative sample of approximately 69,000 persons ages 12 and above about lifetime, annual and past month use of alcohol and other drugs, mental health and certain medical conditions. The NSDUH interviews also collect information about mental and physical health symptoms, history of substance use and mental health treatment, and health care use. Demographic data include gender, race, age, ethnicity, educational level, job status, workplace characteristics and income. SAMHSA releases public use data files about 18 months

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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. About two-thirds of NSDUH respondents work full- or part-time (63%).

Estimating the Prevalence of Serious Psychological Distress (SPD) by Industry and Occupation

Most people with SPDs work. NSDUH elicited information about employment status, industry sector and occupation through 2014. Workers were assigned to one of 16 industry sectors and to one of 14 occupational categories based on their current job. The proportion of NSDUH respondents who reported working in the various industries and occupations was consistent with proportions reported by the Bureau of Labor Statistics.ⁱⁱⁱ The prevalence of SPDs 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 changes in the prevalence of SPDs in each state from rates in 2012-2014 and state rates in 2015-2018.

Workdays Missed

The NSDUH asks respondents who are employed how often they missed work due to illness and injury, and the number of days they 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.^{iv}

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^v and large commercial health plan data sources^{vi} of paid claim amounts. All costs are expressed in 2019 dollars, using the Federal government's medical consumer price index^{vii} and drug price index^{viii} to bring costs to 2019 levels.

Turnover, Replacement and Training^{ix}

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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.^x 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 SPD in the previous year and workers in recovery in that sector.

Other Impacts on Work

NSDUH asks additional questions about symptoms of depression, suicidal thoughts, plans and actions, and substance use. Participants in the survey are asked whether they had driven under the influence of alcohol, marijuana and/or illicit drugs in the previous 12 months.

ⁱ The National Survey on Drug Use and Health (NSDUH) codes serious psychological distress within the past year if respondents reported periods of 2 weeks or longer of intense nervousness, hopelessness, restlessness, or things required great effort all, most or some of the time in the last 12 months. Serious psychological distress is not a diagnostic category in the DSM-5. Approximately 43% of adults in the workforce who had serious psychological distress also reported at least one major depressive episode in the prior year, and 57% reported at least one major depressive episode in their lifetime. Slightly fewer than one-fourth of distressed workers had a substance use disorder in the past year (24.4%), and one in five non-working adults reported co-occurring distress and substance use disorder.

ⁱⁱ <https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health>

ⁱⁱⁱ Henderson R. Industry employment and output projections to 2024. Monthly Lab. Rev. 2015:138:1.

^{iv} 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/ecect06.htm> The agricultural wage was derived from Fayer SD. Agriculture: occupational employment and wages. Monthly Lab. Rev. 2014;137:1.

<http://www.bls.gov/opub/mlr/2014/article/agriculture-occupational-employment-and-wages.htm>.

^v 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&expansionInfoState=hide&dataTablesState>.

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://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>

^{vi} <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.

^{vii} <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 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 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>

^{viii} 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

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^x 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>.

^x 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

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