How Workers with Active Substance Use Disorders Impact Employer Health Care Costs
How is it that workers with untreated substance use disorders (SUDs) use more health care services and cost more for their care than their peers? How do workers who have recovered from substance misuse use less health care and cost employers less for health care?

Workers who have untreated substance use disorders (SUDs) use more medical and mental health services than their peers. They and their employers pay more for this care through increased health insurance premiums and copays. When substance misuse is successfully treated, workers’ health care use and costs go down: not to the same level as their peers who have never had SUDs but lower than those with an untreated SUD. The Substance Use Cost Calculator for Employers uses self-reports of health care use from more than 200,000 working people surveyed by the 2015 to 2018 National Survey on Drug Use and Health (NSDUH) to estimate health care utilization. Costs of medical services are derived from published sources of paid claim amounts, rather than charges. All costs are expressed in 2019 dollars. The Federal government’s medical consumer price index and drug price index are used to bring costs to 2019 levels.

Nearly all businesses with 50 or more workers offer individual health insurance coverage (96.5%). Employers pay, on average, 79% of individual health insurance premiums. Workers pay the other 21%, as well as copays and deductibles. The tables below show per capita utilization and costs of medical, mental health and substance use treatment used by workers with no SUD, those who experienced an SUD in the prior year and workers who have recovered from substance misuse.

Based on NSDUH respondents’ reports of health care use, workers with no SUD used services costing $2,918 per year, workers with an SUD used services costing $4,770 and workers who have recovered from an SUD used services costing $3,961. The share that employers paid, either through health insurance premiums or through self-pay, was $2,334 for workers with no SUD, $3,816 for workers with an SUD and $3,169 for workers in recovery.

Hospital:

Hospital care is expensive. The average daily rate paid by commercial health insurers is about $2,657. Annually, 11% of workers with no SUD are hospitalized overnight, with an average stay of 5.2 days. Workers with an alcohol use disorder (AUD) show a similar pattern: 10% are hospitalized annually for an average of 4.1 days. Workers with a cannabis use disorder (CUD) have comparable hospitalization rates. There is a sharp difference in hospital use by workers with an illicit drug use disorder other than...
cannabis or with an opioid use disorder (OUD): their rates of hospitalization are 19.1% and 22.6%, respectively, and when admitted to the hospital they stay longer (6.0 days and 6.5 days). Annual hospital costs for workers with untreated illicit drug use disorders or OUDs are about three times that of their peers, workers with an untreated AUD and their peers in recovery.

**Exhibit I: Hospital Use**

<table>
<thead>
<tr>
<th></th>
<th>No SUD</th>
<th>Alcohol</th>
<th>Illicit Drug (other than cannabis)</th>
<th>Opioid</th>
<th>Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent hospitalized</td>
<td>11.1</td>
<td>10</td>
<td>19.1</td>
<td>22.6</td>
<td>13.6</td>
</tr>
<tr>
<td>Average length of stay (days)</td>
<td>5.2</td>
<td>4.1</td>
<td>6</td>
<td>6.5</td>
<td>4.4</td>
</tr>
<tr>
<td>Per capita hospital cost</td>
<td>$1,534</td>
<td>$1,089</td>
<td>$3,045</td>
<td>$3,903</td>
<td>$1,590</td>
</tr>
</tbody>
</table>

**Emergency Department:**

Less than a quarter (23%) of workers with no SUD visit the emergency department (ED) every year, averaging 49 visits per 100 workers annually. Workers with an AUD or a CUD have patterns of ED use similar to workers with no SUD. By contrast, workers with an illicit drug use disorder other than cannabis and those with an OUD were more likely to use the ED and had higher rates per 100 workers. The average commercial insurance payment for an ED visit is about $2,213. Workers with an OUD were twice as likely to use the ED in the last year, and had more than twice as many ED visits as their peers with no SUD or as their peers with an AUD. Workers recovered from prior SUDs had intermediate rates of use.

**Exhibit II: Emergency Department (ED) Use**

<table>
<thead>
<tr>
<th></th>
<th>No SUD</th>
<th>Alcohol</th>
<th>Illicit Drug (other than cannabis)</th>
<th>Opioid</th>
<th>Recovered</th>
</tr>
</thead>
</table>

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How Workers with Active Substance Use Disorders Impact Employer Health Care Costs

<table>
<thead>
<tr>
<th>Percent ED use</th>
<th>23</th>
<th>29</th>
<th>39</th>
<th>44</th>
<th>33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visits/100 workers</td>
<td>49</td>
<td>52</td>
<td>96</td>
<td>125</td>
<td>71</td>
</tr>
<tr>
<td>Per capita ED cost</td>
<td>$249</td>
<td>$334</td>
<td>$829</td>
<td>$1,217</td>
<td>$519</td>
</tr>
</tbody>
</table>

Primary care:

There are small differences in primary care visits. The average cost of a 30-minute primary care visit is about $114.32. Primary care patients receive an average of 3.3 prescriptions per visit and the retail cost of a prescription is $454.88. There are few differences between workers with no SUD and those who have recovered from an SUD. Workers with an illicit drug use disorder other than cannabis and those with an OUD saw primary care more often and their costs of care were about 10% higher than their peers.

Exhibit III: Primary Care and Medication Use

<table>
<thead>
<tr>
<th></th>
<th>No SUD</th>
<th>SUD</th>
<th>Alcohol</th>
<th>Opioid</th>
<th>Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td># Primary care visits</td>
<td>3.8</td>
<td>4.17</td>
<td>2.8</td>
<td>4.2</td>
<td>3.82</td>
</tr>
<tr>
<td>$114.32/visit median</td>
<td>$434</td>
<td>$477</td>
<td>$320</td>
<td>$480</td>
<td>$437</td>
</tr>
<tr>
<td>Medications: $454.88 x 3.3 prescriptions/visit</td>
<td>$5,704</td>
<td>$6,260</td>
<td>$4,203</td>
<td>$6,305</td>
<td>$5,734</td>
</tr>
<tr>
<td>Cost of outpatient visits plus medications</td>
<td>$6,139</td>
<td>$6,736</td>
<td>$4,523</td>
<td>$6,785</td>
<td>$6,171</td>
</tr>
</tbody>
</table>

Mental Health and Substance Use Treatment:

Workers who had an SUD in the past year used mental health (MH) and substance use services at rates higher than their peers who had no SUD and those who had successfully recovered from an SUD. The table below shows the differences in service use and the costs of those services per 100 workers. Workers with no SUD use a small amount of mental health and substance use services, averaging $233/year. Workers with an SUD in the prior year use considerably more mental health and substance use services.
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services, averaging $1,040 per year. Workers in recovery were intermediate at $793/year, using both mental health and substance use services at rates higher than their peers, and about three quarters the rate of workers with an SUD.

Exhibit IV: Mental Health (MH) and Substance Use (SU) Treatment Use

<table>
<thead>
<tr>
<th></th>
<th>No SUD</th>
<th>Active AOD</th>
<th>Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH inpatient</td>
<td>0.8</td>
<td>3.4</td>
<td>2.5</td>
</tr>
<tr>
<td>MH inpatient average length of stay = 6.4 days</td>
<td>5.1</td>
<td>21.8</td>
<td>16.0</td>
</tr>
<tr>
<td>MH inpatient/day: $1,400(^\text{viii})</td>
<td>$7,168</td>
<td>$30,464</td>
<td>$22,400</td>
</tr>
<tr>
<td>MH outpatient</td>
<td>7.1</td>
<td>17.6</td>
<td>14.5</td>
</tr>
<tr>
<td>MH outpatient average # visits 7.9(^\text{ix})</td>
<td>56.1</td>
<td>139.0</td>
<td>114.6</td>
</tr>
<tr>
<td>MH outpatient reimbursement/visit $78.69(^x)</td>
<td>$4,414</td>
<td>$10,941</td>
<td>$9,014</td>
</tr>
<tr>
<td>MH medications</td>
<td>12.4</td>
<td>26.4</td>
<td>22.8</td>
</tr>
<tr>
<td>MH medication reimbursement: $571/prescriptions(^\text{xii})</td>
<td>$7,080</td>
<td>$15,074</td>
<td>$13,019</td>
</tr>
<tr>
<td>MH treatment in a MH center</td>
<td>1.6</td>
<td>5.9</td>
<td>5.2</td>
</tr>
<tr>
<td>MH center reimbursement/visit: $78.69(^\text{xii})</td>
<td>$126</td>
<td>$464</td>
<td>$409</td>
</tr>
<tr>
<td>MH private therapist</td>
<td>4.4</td>
<td>10.1</td>
<td>7.2</td>
</tr>
<tr>
<td>MH private therapist/visit: $78.69(^\text{xiii})</td>
<td>$346</td>
<td>$795</td>
<td>$567</td>
</tr>
<tr>
<td>MH in day hospital</td>
<td>0.1</td>
<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>MH in day hospital/day $122.54 x 20 days(^\text{xiv})</td>
<td>$245</td>
<td>$980</td>
<td>$735</td>
</tr>
<tr>
<td>SU inpatient</td>
<td>0.3</td>
<td>3.6</td>
<td>2</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>SU inpatient average length of stay=6.4 days\textsuperscript{xv}</th>
<th>1.9</th>
<th>23</th>
<th>12.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>SU inpatient/day: $1400\textsuperscript{xvi}</td>
<td>$2,688</td>
<td>$32,256</td>
<td>$17,920</td>
</tr>
<tr>
<td>SU outpatient rehabilitation</td>
<td>0.5</td>
<td>5.3</td>
<td>6.2</td>
</tr>
<tr>
<td>SU outpatient average 20 days\textsuperscript{xvii}</td>
<td>10</td>
<td>106</td>
<td>124</td>
</tr>
<tr>
<td>SU outpatient: $122.54/day\textsuperscript{xviii}</td>
<td>$1,225</td>
<td>$12,989</td>
<td>$15,195</td>
</tr>
</tbody>
</table>

MH=mental health; SU=substance use

**Digging a little deeper into reasons for differences:**

The NSDUH asks questions about whether respondents have ever been told that they had various chronic illnesses, and they are asked to give an overall impression of their health status. Consistently, workers who are in recovery report more illnesses than peers with no SUD, or those with an SUD, CUD or OUD. They are more likely than workers with no SUD to have been told they had: a heart condition (11.9% vs 6.5%); diabetes (10.2% vs 7.5%); bronchitis or COPD (7.7% vs 2.3%); cirrhosis of the liver (1.4% vs 0.1%); hepatitis B or C (5.4% vs 0.8%); kidney disease (2.5% vs 1.1%); HIV/AIDS (0.9% vs 0.2%); cancer (5.7% vs 4.4%); and high blood pressure (20.6% vs 14.4%).

A fifth of workers in recovery report their overall health is fair or poor, a rate similar to workers with an OUD (21.8%) but substantially higher than workers with no SUD (7.3%), an SUD (10.4%) or a CUD (9.4%). This greater burden of disease among recovered workers may be partially explained by their age: 40% are 50-64 years old. At the opposite end are workers with a CUD: only 5.5% are 50-64 years old. Three in 10 workers with no SUD and those with an OUD are also in that age category. When self-assessments of overall health from workers in the 50-64 age group are compared, rates of fair or poor health are more similar: workers with no SUD comprise 18%, those with an SUD make up 26.5%, recovered account for 30.7%, those with an OUD account for 40.4%, and a CUD for 30.5%.

The greater burden of disease and age of workers in recovery does not result in their taking more days off for illness or injury, or using health care services more intensely. In fact, workers in recovery take the fewest days off – only 10.9 days per year – while workers with no SUD take an average of 15 days and workers with an SUD take 24.6 days. Workers with an OUD take 22 days annually and those with a CUD take 18 days. Compared to workers with an SUD, workers in recovery are less likely to be hospitalized.
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and if hospitalized, stay for a shorter period. They are also less likely to visit the ED and have fewer primary care visits. Their greater health care use than workers with no SUDs can likely be explained by their greater disease burden and age.

Based on self-reports from more than 200,000 respondents to the NSDUH between 2015 and 2018, we estimate that the average employer pays through health insurance premiums or self-pay approximately $2,918 per year for each worker with no SUD, $4,770 for each worker with an SUD and $3,961 for each worker in recovery. When the costs of leave for illness and injury are added to health care costs, workers in recovery are a bargain.

Recommendations for Employers

A critical part of addressing employer costs related to active SUD is to ensure employees get the treatment that they need. Employer recommendations include:

- Asking any health insurer they work with to demonstrate what they are doing to identify and treat their employees with a substance use problem. Employers can ask to see their health insurer’s statistics on diagnosing and treating substance use disorders in its covered population. If health plans offer substance use benefits, employers can offer comprehensive treatment options to workers with substance use disorder that include coverage for:
  - Confidential substance use screening, which increases the rate of identification of risky and unhealthy alcohol and drug use
  - Brief intervention and referral to treatment
  - Outpatient and inpatient treatment
  - Medications for addiction treatment
  - Counseling and medical services
  - Follow-up services during treatment and recovery

- Providing Disease and Disability Management: workers on short- and long-term disability for injury or illnesses are often treated with opioid pain medications for more than a few days. Use of long-acting opioid pain medications or short-acting opioids for more than 5 days is associated with increased length of disability, reduced likelihood of returning to work and greatly increased risk of developing an opioid addiction, in addition to whatever injury or illness caused the work
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absence. Employers should insist that their EAP, disability or disease management contractors be watchful for any SUD that returning workers may have acquired during their medical care.

  - **Short- and Long-Term Disability:** offering both short- and long-term disability coverage as employee benefits, as opposed to individual employee purchase of personal disability insurance. Financial and job stability while working through any physical or mental injury, distress or illness, or substance use disorder is critical.

    - If employers contract for disease or disability management services, they should require vendors provide for evidence that they are actively tracking data and requiring prescribers abide by the CDC prescribing guides when prescribing opioid use for pain, assessing workers for possible opioid misuse, and intervening to assist them to use alternative, less risky pain management strategies.

- Utilizing *Employee Assistance Programs (EAPs):* although the majority of workers are covered by these free, confidential, problem-focused programs, few employers press their EAPs to proactively screen workers contacting the EAP about substance use. A survey of EAPs found a utilization rate for behavioral health services of only 4.5% of the covered workers, which is much less than the prevalence of substance use and mental health concerns in typical workforces – most people with substance use and mental health concerns are not utilizing the EAP.

  - Using *Screening Tools*, which increase the rate of identification of risky and unhealthy alcohol and drug use and link people to appropriate treatment earlier. EAPs, onsite health programs and medical providers should learn and use appropriate screening tools. Workplaces should ensure that their EAP and benefits programs use screenings when substance use is suspected, and also encourage screening upon opioid prescription for familial or individual history of addiction or substance use disorders.

- Creating *return-to-work* plans for employees who have taken leave related to substance use. These plans provide an outline of expectations and create employer guidelines to help the employee integrate back into work.
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- Providing Worker Peer Support Programs, in which workers who have experienced substance use or mental health challenges and learned to manage them are formally trained to help co-workers who are facing similar issues.

- Offering a Drug-Free Workplace Program that includes:
  - A workplace substance use education component – employee engagement and education leads to a safer workplace. Everyone should be able to recognize the signs and symptoms of impairment, potential substance use disorders, and mental distress, and understand how to access employer resources and treatment.
  - Confidential screening and treatment referrals by an EAP or health professional when needed
  - Confidential follow-up care to support individuals in recovery
  - Supervisor training – supervisors play a critical role in addressing opioids in the workplace. They are often the first to notice a difference in an employee’s performance, personality and activities, and they may be the first to notice impairment. It is imperative to provide them with the tools to protect the safety of the workplace and the privacy of employees.

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2. [https://data.bls.gov/timeseries/CUSR0000SEMF01?output_view=pct_3mths](https://data.bls.gov/timeseries/CUSR0000SEMF01?output_view=pct_3mths)

3. [https://www.in2013dollars.com/Medical-care/price-inflation](https://www.in2013dollars.com/Medical-care/price-inflation)


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viii Owens PL, Fingar KR, McDermott KW, Muhuri PK, Heslin KC. Inpatient stays involving mental and substance use disorders, 2016: Statistical brief #249. https://www.hcup-us.ahrgov/reports/statbriefs/sb249-Mental-Substance-Use-Disorder-Hospital-Stays-2016.jsp  Mean cost per stay $7,100  Mean cost per day 1,400  ALOS 6.4 days


xvi Owens PL, Fingar KR, McDermott KW, Muhuri PK, Heslin KC. Inpatient stays involving mental and substance use disorders, 2016: Table 20. Medication therapy and number of medications mentioned at emergency department visits: United States, 2017 National HospitalAmbulatory Medical Care Survey: 2017 Emergency Department Summary Tables


viii Owens PL, Fingar KR, McDermott KW, Muhuri PK, Heslin KC. Inpatient stays involving mental and substance use disorders, 2016: Statistical brief # 249. https://www.hcup-us.ahrgov/reports/statbriefs/sb249-Mental-Substance-Use-Disorder-Hospital-Stays-2016.jsp Mean cost per stay $7,100 Mean cost per day 1,400 ALOS 6.4 days


vi Health Care Cost Institute, 2018 HEALTH CARE COST AND UTILIZATION REPORT, February 2020

v Health Care Cost Institute, 2018 HEALTH CARE COST AND UTILIZATION REPORT, February 2020


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