

ESTIMATION OF THE ECONOMIC IMPACT OF SUBSTANCE USE AND THE RELATED MENTAL HEALTH ISSUES ON THE BC CONSTRUCTION INDUSTRY

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BACKGROUND

WHAT WE KNOW

There has been an opioid-related overdose deaths public health emergency in BC for over 6 years now. This overdose epidemic disproportionately affects the construction industry: a BC corner report in 2018 found that about half of those who were employed when they died of overdose in BC worked in the construction and transportation industries, however these industries only make up 15% of the BC workforce. We also know that the opioid epidemic has worsened since the onset of COVID-19. The average number of monthly overdose deaths in BC increased by approximately 75% starting in April 2020 and remains at that higher level. This worsening of the overall opioid epidemic seems to have carried over to the construction industry as reflected in the fact that the Construction Industry Rehabilitation Plan (CIRP), which provides counselling related to substance use and related mental health issues, has seen its number of counselling sessions delivered jump by approximately 60% compared to before COVID-19.

WHAT WE DON'T KNOW

Overdose deaths are only one measure, albeit the most tragic one, of the extent of the opioid epidemic. We have very little information about the overdoses that do not lead to death and, more generally, about the economic impact of substance use and the related mental health issues on the BC construction industry.

WHAT WE DID

We calculated an estimate of the economic impact of substance use and related mental health issues on the construction industry, on an annual basis. This economic analysis was carried out by Craig Mitton, of UBC and Prioritize Consulting, and Francois Dionne, of Prioritize Consulting. Prioritize Consulting has extensive experience in all forms of valuation in healthcare.

METHODS

ECONOMIC ANALYSIS

There are two basic steps in measuring an economic impact:

1. Define the effects to be measured (effects of either an intervention or a condition)
2. Obtain data on those effects.

In terms of the effects to be measured in this case, we identified two effects of substance use and related mental health issues that are the primary driver of economic impact on the industry:

1. Days of work missed because of substance use and related mental health issues
2. Days of work where a worker was present at work but 'hungover' and therefore not able to work at full capacity

SURVEY

To obtain data on those effects, we conducted a survey within the industry. The survey asked respondents about those two effects as well as some general questions about substance use and related mental health issues. The survey was designed to be easy to complete (it was designed to be completed in under 3 minutes) and respondents were assured of full anonymity.

The survey was conducted between October and early December 2022. Attempts were made to reach as many employees in the industry as possible. Employees were reached by email and text with messages that described the survey and its purpose and provided a link to the survey.

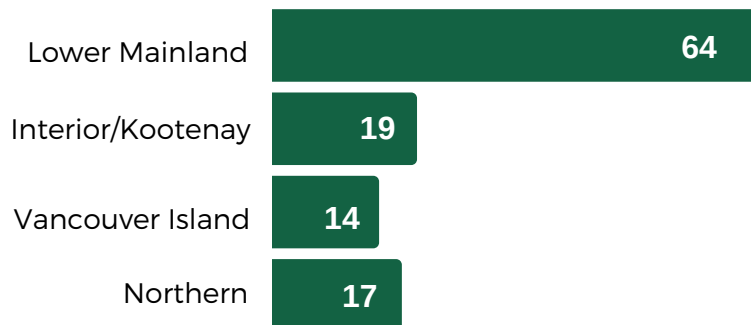


KEY SURVEY FINDINGS

1. 683

Number of Responses: This number of responses is sufficient to provide us with reasonable 95% confidence intervals, if we believe that the respondents were a random sample of the population, i.e., as long as we have no reason to believe that a specific subset of the population was more likely to respond.

2. Geographic Distribution of Respondents (%)



3. 50% (95% CI: 46.3%, 53.7%)

Percentage of respondents who answered yes to the question: Do you have concerns about substance use for yourself or for others close to you in the construction industry?

Besides demonstrating the extent of the prevalence of the issue of substance use and related mental health amongst employees in the BC construction industry, this response also serves as a validation of the results of the survey in that it matches closely the results of a study on “Attitudes and beliefs towards substance use & mental health issues” conducted by Worksafe BC and CIRP in 2019 that found that 55% of employees in the construction industry had a “High level of concern for prevalence of substance use”.

4. 15% (95% CI: 12.3%, 17.7%)

Percentage of respondents who reported missing work in the last year because of substance use and related mental health issues.

5. 19 DAYS

For those who missed work in the last 12 months because of substance use and related mental health issues, average number of days of work missed.

6. 12% (95% CI: 9.6%, 14.4%)

Percentage of respondents who reported showing up at work hungover or dealing with withdrawal symptoms in the last year.

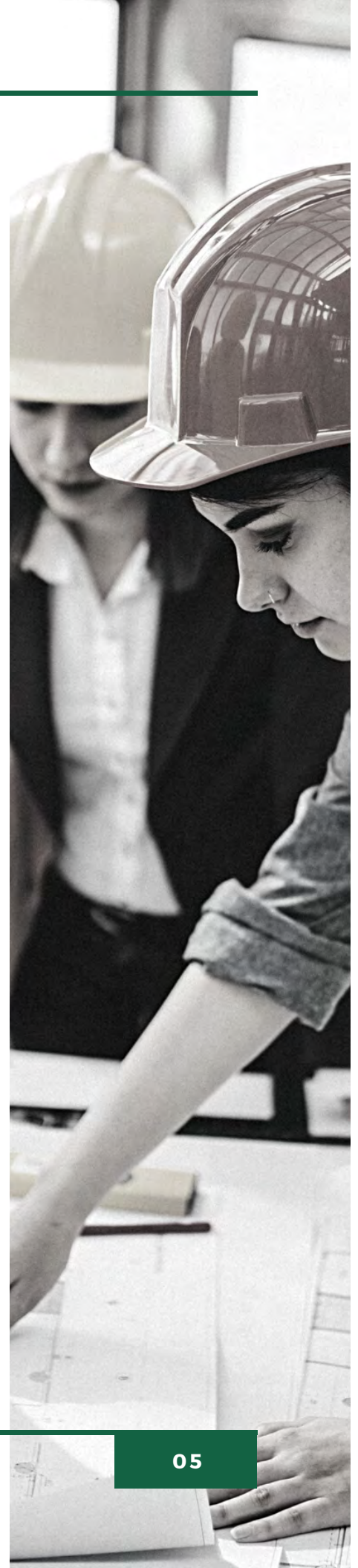
7. 29 DAYS

For those who reported showing up at work hungover or dealing with withdrawal symptoms in the last year, average number of days that this happened.

ECONOMIC IMPACT

ESTIMATION OF ECONOMIC IMPACT

Our survey responses show that about 15% of employees missed an average of 19 days of work in the last 12 months and that 12% showed up at work hungover or with withdrawal symptoms an average of 29 days (note that there can be an overlap in that some of those that missed work might also have showed up hungover but that does not change the overall estimates of costs for the industry).





ESTIMATE OF ECONOMIC IMPACT OF MISSED WORK

Number of days of work missed

Based on an estimated 250,000 workers in the BC construction industry, 15% (95% CI: 12.3%, 17.7%) of workers missing an average of 19 days of work per year because of substance use and related mental health issues = **712,500 person-days** of work missed (95% CI: 584,250; 840,750).

Value of a day of work missed

There are two components to this value. First, there is the cost of the day of work missed by the individual. We use an average value of one day of work of \$400. Second, there is the loss of productivity for the crew from having one person missing. We assume a crew of 6 workers and a loss of productivity of 15% for every member of the crew, with one person missing, for a value lost estimate of \$300. This gives us a total cost **per person/day of work missed of \$700**.

Estimated annual cost to the industry

712,500 person-days of work missed at \$700 per day equals an annual cost of just under **\$499 million** (95% CI \$409 million, \$589 million).

ESTIMATE OF ECONOMIC IMPACT OF WORK WHILE HUNGOVER

Number of days of work while hungover or dealing with withdrawal symptoms

Using the same estimated number of workers, with 12% (95% CI 9.6%, 14.4%) coming to work hungover or dealing with withdrawal symptoms an average of 29 days per year= **870,000 person-days** of work while hungover or dealing with withdrawal symptoms (95% CI: 696,000, 1,044,000).

Value of a day of work while hungover or dealing with withdrawal symptoms

We use the same average value of one day of work of \$400 and the same crew size of 6 members. We assume that the performance of the individual that is hungover will be 50% of full capacity and that the effect of that sub-optimal performance on the crew will be a 10% reduction in the performance of every other worker. This gives us an estimate of cost **per person/day of \$400**.

Estimated annual cost to the industry

870,000 person-days at work while hungover or dealing with withdrawal symptoms at \$400 per day equals an annual cost of **\$348 million** (95% CI \$278 million, \$418 million).



TOTAL ESTIMATED COSTS

TOTAL ESTIMATED ANNUAL COST TO THE INDUSTRY



\$847M

(95% CI: \$687 MILLION, \$1.01 BILLION)

total estimated *annual* cost to the industry from workers missing work and workers showing up at work hungover or dealing with withdrawal symptoms

COST TO THE BC GOVERNMENT

\$318M

(95% CI: \$258 MILLION, \$380 MILLION)

To estimate the impact of substance use and related mental health issues in the construction industry on the finance of the BC Government, we must first estimate the impact on the overall economy of BC. For this purpose, we can use a multiplier of 1.5, which is conservative for the construction industry. With a 1.5 multiplier, we get an estimated annual negative impact on the economy of BC of \$1.27 billion (95% CI: \$1.03 billion, \$1.52 billion). Applying an overall taxation rate of 25%, which represents the proportion of income in BC that ends up with the BC Government through all forms of taxation, we get an estimate of the annual loss of revenue to the Government of BC due to substance use and related mental health issues in the construction industry of \$318 million (95% CI: \$258 million, \$380 million).

SUMMARY OF FINDINGS

The BC Coroner's 2018 report on the overdose epidemic and Worksafe BC's 2019 study on substance use and the related mental health issues showed how widespread this problem is in the BC Construction industry. This study served two purposes: first, it confirmed the previous findings around the magnitude of the substance use and related mental issues in the construction industry in BC and second, it provided an estimate of the cost of this problem for the construction industry. Our estimate of the expected annual cost to the industry of substance use and related mental health issues is \$847 million.

There are two considerations that must be kept in mind when using this estimate. First, some assumptions were made around the loss of value per day of work missed or performed at sub-optimal performance. These assumptions affect the estimate and may be overly aggressive or overly conservative. Second, this estimate focuses only on two direct impacts of the problem: workers missing days of work or showing up at work in sub-optimal condition. However, the disruptions and resulting costs related to substance use and related mental health issues go beyond those two direct impacts and include effects on recruitment and retention of staff, general mood on sites, which affects productivity, and rate of injuries, making our estimate of cost to the industry a conservative estimate.



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