

MMHPI COVID-19 Response Briefings

Projected COVID-19 MHSUD Impacts, Volume 2: Effects of COVID-Induced Economic Recession (COVID Recession) on Veteran Suicide and Substance Use Disorder (SUD) – June 15, 2020

On April 28, 2020, the Meadows Mental Health Policy Institute (MMHPI) issued the first in a series of reports analyzing the mental health impacts of the COVID-19 pandemic. Our initial report projected the impact of a COVID-induced economic recession (the COVID recession) on increases in rates of suicide, illicit-drug related deaths, and substance use disorders.¹ Our second report updated the original report with state-level projections.²

For this report, MMHPI has partnered with the Cohen Veterans Network (CVN) to conduct a similar analysis for United States (U.S.) veterans. Specifically, the present analysis focuses on how a COVID-19 induced economic recession increases rates of suicide and substance use disorders (SUD) – with a specific focus on military veterans. Our analysis suggests that as many as 550 additional U.S. veteran lives could be lost to suicide in the next 12 months and 20,000 additional American veterans could suffer from substance use disorders with every five percent (5%) increase in unemployment compared to pre-COVID levels.³

In this report, MMHPI and CVN have set out to expand on our initial estimates¹ to focus on the sub-population of veterans, who already have higher than average rates of suicide⁴ compared to the general population. Veterans generally have poorer than average mental health and disproportionately experience homelessness, which may partially explain the higher rates of substance use disorder among veterans.^{5,6} These projections are intended to inform health system planning regarding how this pandemic, and its effects upon the economy, may impact the needs of veterans.

¹ MMHPI. (April 28, 2020). Projected COVID-19 MHSUD Impacts, Volume 1: Effects of COVID-Induced Economic Recession (COVID Recession). <https://www.texasstateofmind.org/uploads/whitepapers/COVID-MHSUDImpacts.pdf>.

² MMHPI. (April 28, 2020). Projected COVID-19 MHSUD Impacts, Volume 1: Effects of COVID-Induced Economic Recession (COVID Recession)—Appendix of State-Level Estimates, April 28, 2020. <https://www.texasstateofmind.org/uploads/whitepapers/COVID-MHSUDImpacts-StateAppendix.pdf>.

³ We estimated the increase in age-adjusted veteran suicide, inflated for the annual increase in suicides per year (37/100,000) over the last five years.

⁴ United States Department of Veterans Affairs, Office of Mental Health and Suicide Prevention. (2019, September). 2019 National Veteran Suicide Prevention Annual Report. https://www.mentalhealth.va.gov/docs/data-sheets/2019/2019_National_Veteran_Suicide_Prevention_Annual_Report_508.pdf.

⁵ Castro, C. A., & Kintzle, S. (2014). Suicides in the military: the post-modern combat veteran and the Hemingway effect. *Current Psychiatry Reports*, 16(8), 460.

⁶ Kaspro, W. J., & Rosenheck, R. (2000). Mortality among homeless and nonhomeless mentally ill veterans. *The Journal of nervous and mental disease*, 188(3), 141-147.

The relationships between economic downturns and mental health and substance use (MHSUD) impacts are relatively well-established. These MHSUD effects are complex and to a large degree depend on the experience of specific communities related to the pandemic, and these experiences may be different for veterans.⁷ Models suggest that mitigation efforts currently in place are reducing the size of the pandemic;⁸ however, the “curve flattening” efforts have prolonged the periods of physical isolation that Americans are experiencing. This could in turn expand the magnitude of MHSUD impacts related to physical isolation, particularly for veterans. The unemployment rate continues to rise⁹ despite states’ attempts to reopen their economies and individuals living underlying health conditions and older adults are advised to continue to “shelter in place”.¹⁰ Furthermore, given the unpredictable length of the pandemic, such effects can continue to manifest in MHSUD-related morbidity and mortality for years.¹¹

Veterans – especially the youngest generation of veterans¹² – face unique challenges in finding employment after separating from the military. Due to the extended duration of the COVID-19 pandemic, unemployment rates in the general population have increased by nearly 10 percentage points (10%) to more than 13 percent (13%) since January 2020.¹³ The change in the veteran unemployment rate is comparatively smaller; however, the increase in veteran unemployment has exceeded a five percentage point (5%) increase from January 2020.¹⁴ The impact of the changes in unemployment is also dependent on its duration, which remains unpredictable. Recovery is dependent on a host of factors, including the ability to rapidly contain the virus, as well as the reorganization of disrupted supply chains and effects of federal and state policies. Changes in business and consumer confidence are also critical, including

⁷ Brand, J. E. (2015). The far-reaching impact of job loss and unemployment. *Annual Review of Sociology*, 41, 359-375.

⁸ The widely cited University of Washington “Murray Model” has shown increases in COVID-19 related deaths through August 2020. Estimates on the date of this report for Texas projected just over 135,000 deaths from COVID-19 nationally. For current estimates, see: <https://covid19.healthdata.org/united-states-of-america>

⁹ U.S. Bureau of Labor Statistics. (May 15, 2020). *Labor Force Statistics from the Current Population Survey*. <https://data.bls.gov/timeseries/LNS14000000>.

¹⁰ Centers for Disease Control and Prevention. (May 8, 2020). Coronavirus Disease 2019 (COVID-19): What you can do. <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/what-you-can-do.html>

¹¹ MMHPI. (November 30, 2017). *Hurricane / Tropical Storm Harvey impact on child and youth mental health*. Retrieved on April 15, 2020, from <https://www.texasstateofmind.org/uploads/whitepapers/HarveyImpact.pdf>

¹² U.S. Bureau of Labor Statistics. (March 19, 2020). *Economic Situation of Veterans News Release (Table 2A)*. <https://www.bls.gov/news.release/vet.htm>.

¹³ U.S. Bureau of Labor Statistics. (June 14, 2020). *Employment Situation Summary Table A. Household data, seasonally adjusted*. <https://www.bls.gov/news.release/empsit.a.htm>.

¹⁴ U.S. Bureau of Labor Statistics. (June 14, 2020). *Labor Force Statistics from the Current Population Survey*. https://data.bls.gov/timeseries/LNS14049526&series_id=LNS14049601.

both the perception of unemployed individuals¹⁵ and the reality¹⁶ as to whether their job loss is temporary or permanent.

For this briefing, MMHPI and CVN assume that these macroeconomic changes will result in a mitigation-induced economic recession (COVID recession) and estimate the plausible range of increased MHSUD needs that are expected for veterans related solely to unemployment. Using estimates derived from the severe recession of 2007–2009, this analysis focuses on the association between unemployment and increases in suicide and substance use disorders. The underlying studies used in these estimates are specific to the U.S. and are relatively recent.¹⁷

While we do not yet know the extent of any upcoming recession, the veteran unemployment rate in May was 9.1 percent (9.1%), up from 3.8 percent (3.8%) in March 2020 and 2.9 percent (2.9%) for May of 2019, which was among the lowest rates in 19 years.¹⁸ While dire, it is not yet clear how long this period of high unemployment will last. Therefore, in this briefing, we provide a range of conceivable outcomes, running from a conservative five percentage point (5%) increase in the unemployment rate to an upper bound of a 20 percentage point (20%) increase, which approaches the 23 percentage point (23%) increase in unemployment experienced in the Great Depression. Finally, the goal of this paper is to inform the efforts of policy makers and health systems charged with caring for our nation's veteran population to prepare for increases in veteran needs related to MHSUD, so hopefully mitigation efforts to reduce these needs — and health system responses when these needs present — will also result in less morbidity and mortality than in past recessions.

In summary, we project that every five percentage point increase in unemployment among veterans during the COVID recession per year could result in more than 550 additional veteran suicides and over 20,000 new veterans with substance use disorders.

I. Projected Increases in Deaths from Suicide

Using data from many countries and different recessionary periods, researchers have consistently found that reduced per capita gross domestic product (GDP) and associated rises in

¹⁵ U.S. Bureau of Labor Statistics. (May 8, 2020). *Frequently asked questions: The impact of the coronavirus (COVID-19) pandemic on The Employment Situation for April 2020*. <https://www.bls.gov/cps/employment-situation-covid19-faq-april-2020.pdf>

¹⁶ Barrero, J. M., Bloom, N. & Davis, S.J. COVID-19 Is Also a Reallocation Shock. Becker Friedman Institute for Economics at the University of Chicago. https://bfi.uchicago.edu/wp-content/uploads/BFI_WP_202059.pdf

¹⁷ We are representing the size of the COVID recession through increases in unemployment, while the drivers of these MHSUD impacts may be other related economic changes, such as loss of retirement income, home values, or reduced future economic opportunity. Our analysis approach captures all of these correlated economic factors in a single measure, the unemployment rate. It would also be useful for future models to disaggregate the predicted MHSUD impacts by type of economic change, as well as non-economic factors related to COVID-19.

¹⁸ U.S Bureau of Labor Statistics. (June 14, 2020). *Labor Force Statistics from the Current Population Survey*. https://data.bls.gov/timeseries/LNS14049526&series_id=LNS14049601.

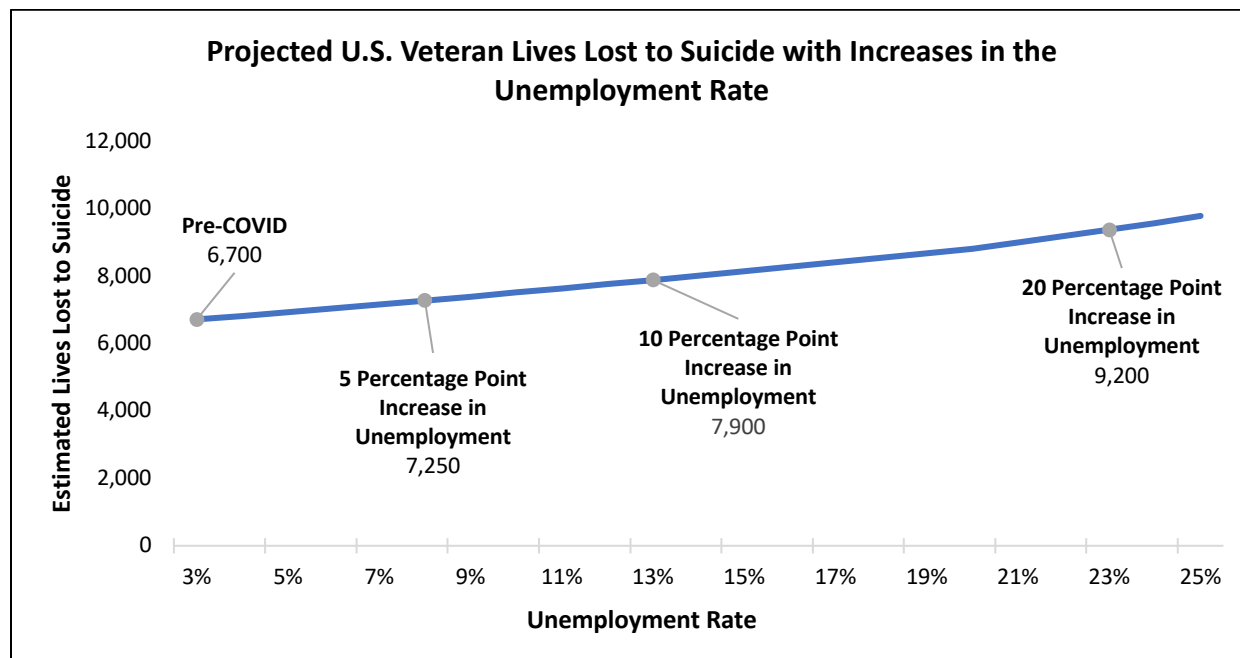
unemployment are directly associated with increases in suicide.^{19, 20} Based on U.S. state-level data from 1997 to 2010, which includes the 2007–2009 recession, each percentage point increase in the unemployment rate results in a 1.6 percent (1.6%) increase in the suicide rate.²¹ According to our models,²² with each additional percentage point increase in the rate of unemployment, more than one hundred additional veterans would be lost to suicide. At the current unemployment rate as of May 2020 (an increase of just six percentage points [6%]), nearly seven hundred additional veteran suicides would occur because of increases in unemployment alone. And, if the unemployment rate were to increase by 20 percent (20%), just exceeding the 23 percent (23%) unemployment rate during the Great Depression, MMHPI estimates that more than 2,500 more veterans could die from suicide. These projected increases, when added to the numbers of suicides that were expected to occur under the January 2020 unemployment rate, are depicted in the figure below.

¹⁹ Reeves, A., Stuckler, D., McKee, M., Gunnell, D., Chang, S. S., & Basu, S. (2012). Increase in state suicide rates in the USA during economic recession. *The Lancet*, *380*(9856), 1813-1814.

²⁰ Frasilho, D., Matos, M. G., Salonna, F., Guerreiro, D., Storti, C. C., Gaspar, T., & Caldas-de-Almeida, J. M. (2016, February 3). Mental health outcomes in times of economic recession: A systematic literature review. *BMC Public Health*, *16*, 115. <https://doi.org/10.1186/s12889-016-2720-y> A few credible sources challenge the conclusion that unemployment is the causal factor. See, for example, Harper, S., & Bruckner, T. (2017, July). Did the Great Recession increase suicides in the USA? Evidence from an interrupted time-series analysis. *Annals of Epidemiology*, *27*(7), 409–414. <https://doi.org/10.1016/j.annepidem.2017.05.017>

²¹ Phillips, J. A., & Nugent, C. N. (2014). Suicide and the Great Recession of 2007–2009: The role of economic factors in the 50 U.S. states. *Social Science & Medicine*, *116*:22–31. doi:10.1016/j.socscimed.2014.06.015. The magnitude of effect sizes reported in the academic literature varies according to the period of data used and analytic method employed. This paper focuses on the upper range of the credible effect sizes with a conservative estimate of the potential increase in unemployment (five percent increase).

²² Our models required logarithmic (log) transformation of the suicide rate to permit reporting change in suicide rates as a percentage. We use the exact percentage change formula associated with log dependent variables when estimating the effect of a 20 percentage point (20%) increase in the unemployment rate on suicide. With this approach, the association between unemployment rate and suicide becomes slightly non-linear for large changes in unemployment. Therefore, the total deaths calculated for a twenty percent (20%) increase are more than four times the annual rate observed for a five percent (5%) increase.



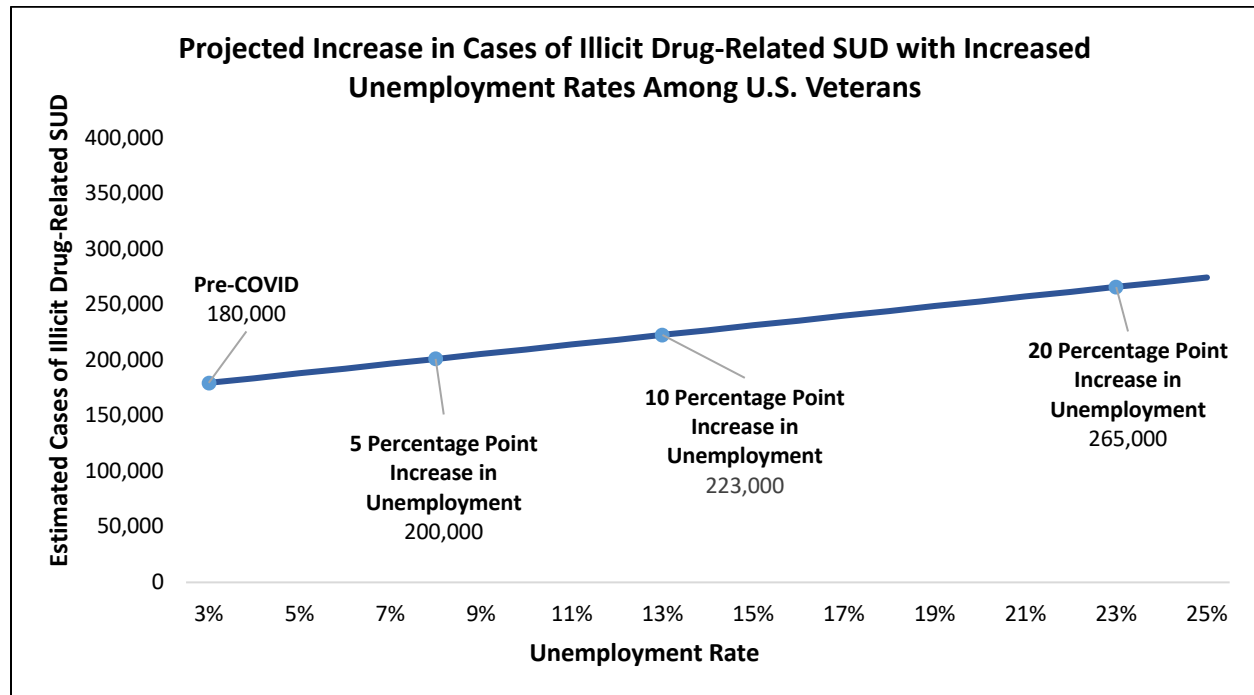
II. Projected Increase in Substance Use Disorders

There is a well-established relationship between substance use and efforts to cope with stress more broadly, and unemployment is strongly associated with increases in substance use disorders (SUD).²³ Accordingly, MMHPI also estimated the increase in the prevalence rate of SUD by comparing prior data on SUD in unemployed versus employed veterans. Using data from the National Survey on Drug Use and Health,²⁴ we estimated that five percent (5%) of unemployed veterans have a SUD involving an illicit drug (including opioid use disorders), while the rate for adult veterans who are employed is two percent (2%). Using this difference in prevalence rates, we projected the number of new adult veterans who may develop SUD with increasing unemployment rates.

An increase of five percent (5%) in unemployment among veterans is projected to result in more than 20,000 additional cases of SUD per year nationwide. The figure below illustrates the additional U.S. veterans who will suffer substance use disorders each year if unemployment worsens.

²³ Compton, W. M., Gfroerer, J., Conway, K. P., & Finger, M. S. (2014, June 14). Unemployment and substance outcomes in the United States 2002–2010. *Drug and Alcohol Dependence*, 142, 350–353.

²⁴ Data were abstracted using data from the Substance Abuse and Mental Health Services Administration (SAMHSA)'s restricted online data analysis system (RDAS). National Survey on Drug Use and Health: 2-Year RDAS (2017 to 2018), //rdas.samhsa.gov/#/survey/NSDUH-2017-2018-RD02YR/crosstab/?weight=DASWT_1&run_chisq=false&results_received=true.



III. Context and Additional Considerations

Readers should be mindful that this briefing presents estimates of the potential range of lives lost to suicide and substance use disorder, and the actual effects are subject to many more variables. First, our projections are built on an inflated suicide rate from 2017, the latest data available from the U.S. Department of Veteran’s Affairs.²⁵ Further, suicide rates were on the rise with (or without) COVID-19. Therefore, increases in unemployment related to the COVID recession will occur in the context of an increasing risk for suicide across the United States, and the directionality of that context is unclear. In addition, international studies tell us that the greatest increases in suicide occur when unemployment rates are low.²⁶ When the COVID-19 pandemic began, the United States achieved historical low unemployment, including among veterans.²⁷ Therefore, it is possible that we are conservatively estimating the number of U.S. veterans who die from unemployment-related suicide in this report. Conversely, models suggest that mitigation efforts currently in place for COVID-19 are reducing the scope of the pandemic, which could in turn also reduce the size of some MHSUD impacts.

Other factors that could affect our projections include micro-level correlates associated with disparities for subsets of the population, including age disparities (i.e., veterans are generally younger than the general population and more likely to have mental or physical health

²⁵ United States Department of Veteran’s Affairs, Office of Mental Health and Suicide Prevention. (2019, September). 2019 National Veteran Suicide Prevention Annual Report (State Data Appendix). https://www.mentalhealth.va.gov/docs/data-sheets/2017/2005-2017_National_Data_Appendix.xlsx.

²⁶ Nordt, C., Warnke, I., Seifritz, E., & Kawohl, W. (2015). Modelling suicide and unemployment: a longitudinal analysis covering 63 countries, 2000–11. *The Lancet Psychiatry*, 2(3), 239-245.

²⁷ United States Department of Labor. (2020). The Employment Situation – March 2020. Report # USDL 20-0521.

condition and are therefore at greater risk for unemployment as a result). These micro-level experiences are essential in understanding the scope of how the pandemic will affect veterans given that there is no real comparison to serve as a proxy for the COVID-19 related social isolation, loneliness, psychological distress,²⁸ substance use, and fear that has broadly impacted the U.S. population.^{29, 30} Future modeling could employ these micro-level data to refine projections.

There are also notable statistical considerations underlying these projections that are likely to vary from actual experience. For example, the studies underlying our projections are not veteran-specific and as a result, our model applies trends in general population suicide rates to veterans nationwide. This assumption may miss finer distinctions in anticipated increases, as suicide rates vary substantially across various subpopulations.³¹ Further, COVID-19 has impacted all Americans in a novel way that transcends insights available from studies of prior events. To explore this in our estimates, we calculated confidence intervals that show the range of likely deaths due to unemployment. These confidence intervals, which were based on the published data from which our projections were generated, were quite small and led to a margin of error of only one or two deaths per one percent (1%) increase in unemployment. Therefore, given the uncertainty associated with projecting suicide into the future, we elected to present our projections as estimates only and discuss the caveats that should be used when interpreting our projections.

It is also important to keep in mind that for every person who dies from suicide, many more experience suicidal thoughts and even more experience MHSUD associated with suicide, especially depression.³² As a result of their military experience, most veterans tend to be resilient, having developed a variety of coping skills.³³ In order to attenuate the increase in

²⁸ Keeter, S. (2020, March 30). *People financially affected by COVID-19 outbreak are experiencing more psychological distress than others*. Pew Research Center. <https://www.pewresearch.org/fact-tank/2020/03/30/people-financially-affected-by-covid-19-outbreak-are-experiencing-more-psychological-distress-than-others/>

²⁹ Bruce, G., Nguyen, H., Ballard, J., & Sanders, L. (2020, March 27). *COVID-19 report: How the virus is affecting everything, from politics to brands*. <https://today.yougov.com/topics/science/articles-reports/2020/03/12/covid-19-report-how-virus-affecting-world-politics>

³⁰ Clay, R. (2020, March 18). *COVID-19 isn't just a danger to older people's physical health*. American Psychological Association. <https://www.apa.org/news/apa/2020/03/covid-19-danger-physical-health>

³¹ Stone, D. M., Simon, T. R., Fowler, K. A., Kegler, S. R., Yuan, K., Holland, K. M., Ivey-Stephenson, A. Z., & Crosby, A. E. (2018). *Vital signs: Trends in state suicide rates – United States, 1999-2016 and circumstances contributing to suicide – 27 states, 2015* (Morbidity and Mortality Weekly Report Series 67, Issue 22). Centers for Disease Control and Prevention. <https://doi.org/10.15585/mmwr.mm6722a1>

³² Han, B., et al. (2017). National trends in the prevalence of suicidal ideation and behavioral among young adults and receipt of mental health care among suicidal young adults. *Journal of the American Academy of Child & Adolescent Psychiatry*, 57(1), 20- 27. DOI: <https://doi.org/10.1016/j.jaac.2017.10.013>. A comparison of these reported ideation rates to completed suicides demonstrates that suicidal ideation occurs at a rate that is between 30 and 240 times that of completed suicides.

³³ Meredith, L.S., Sherbourne, C.D., Gaillot, S.J., Hansell, L., Ritchard, H.V., et al. (2011, June 1). Promoting Psychological Resilience in the U.S. Military. *Rand Health Quarterly* vol. 1(2), 2.

suicides among veterans it will be important to enable veterans and those who support veterans to tap into these coping skills.

Broadly speaking, the effects described in this report are complex and to a large degree depend on the pandemic-related unemployment experienced in veteran communities, other factors that impact veterans but were not incorporated into the projection model, and potential reductions in MHSUD morbidity and mortality due to mitigation efforts to reduce these needs, and health system responses when these needs present.