An Economic Analysis of HB18-1177

House Bill 18-1117 aims to reduce suicides among Colorado's youth by providing free access to suicide prevention programs for people who "regularly interact with youth but who are not in a profession that typically provides such training opportunities." It also lowers the age of consent for minors to seek outpatient psychotherapy from 15 to 12 years of age, and seeks to raise the awareness of the issue suicide and available resources. While the economic costs of suicide are often exaggerated, there remains economic justification to support the implementation of a government-funded suicide prevention program. By reducing suicide attempts and suicide deaths, government intervention may mitigate many negative externalities including an increased burden on the healthcare system and the emotional pain borne by friends and family members. However, a study of the such interventions should be undertaken to evaluate their efficacy.

Suicide is perhaps the most radical action a person can undertake. For most, the thought of intentionally ending one's own life is impossible to seriously entertain. And yet, every year, hundreds of Coloradoans take their own lives. In 2015, there were 1,093 suicides in Colorado, nearly five times the number of people killed by homicide. Of these deaths, 171 were people between the ages of 10 and 24 years old. Despite a strong economy and its oft-touted sunny climate, Colorado has a higher overall suicide rate than 41 other states as well as high rates of youth suicide[i].

These sorts of statistics are what compelled Colorado's State Government to create the Office of Suicide Prevention nearly twenty years ago. In 2014, the State started the Suicide Prevention Commission to establish "suicide prevention priorities that are data driven and evidence based.[ii]" Such programs have received widespread public support. The current bill features sponsors from both parties. Coloradoans, it would seem, are united in their effort to prevent suicide.

Despite their popularity, however, the economic justification for these sorts of publicly funded programs is less obvious. In this case, "less obvious" should not be taken to mean "nonexistent"—this

analysis will go on to enumerate some of the economics benefits of suicide prevention. However, many of the supposed economic benefits of suicide prevention heard today—namely that premature deaths cost the state money through productivity losses—are based on misunderstandings or misinterpretations of basic economic theory. This paper aims to clear up some of these misconceptions.

A common method of quantifying the burden of suicide is by measuring the lost productivity that individuals may have enjoyed had they survived. In Colorado, this number is said to exceed approximately one billion dollars annually[iii]. Local suicide prevention groups and initiatives often cite this number as a cost to the state, presumably to motivate further action and investment in preventing suicide.

Most would agree these are worthy goals. But describing this billion-dollar figure as a cost to the State of Colorado is economically problematic. These foregone wages are costs borne entirely by the deceased, and not the state. They are therefore private and not public costs, and do not represent an externality of any kind.

While this loss of productivity does reduce the overall GDP of the state, this reduction occurs along with a concomitant reduction of the population. Since these costs are calculated by multiplying lost life years by GDP per capita, the net reduction in GDP per capita due to lost productivity is effectively zero. Although the $1 billion figure might be useful to give some sense of scale to Colorado's suicide problem (though even this is also doubtful—a reporting of the death toll is probably the most straightforward statistic), it is possessed of virtually no economic significance insofar as it affects the lives of other Coloradoans.

In some instances, suicide may save government from incurring certain costs. Economists David Lester and Bijou Yang point out that because a disproportionate number of people who commit suicide suffer from depression, they may be receiving transfer payments in the form of disability payments or Medicaid and Medicare reimbursement for psychiatric treatment. Using back of the envelope-

calculations, Lester and Yang showed that it possible—though not certain—that suicide may actually save taxpayers money[iv].

However, these savings are likely realized in suicide among older populations, who have fewer productive years ahead of them than their younger counterparts, and who receive more in transfer payments while paying less in taxes. Both authors point out that preventing suicide may be justifiable on humanitarian grounds, but that the current literature on the economic implications of suicide tends to overstate the costs while ignoring some of the possible savings.

Still, it is important to consider the costs of suicide. The most damaging and salient of these costs is the emotional suffering borne by friends and family of the deceased. And because the interests of these third parties may not be appropriately accounted for in the decision of an individual to take their own life, such costs represent a negative externality.

The failure of the market to internalize the costs to the friends and family of the deceased can occur for a number of reasons, one of which may be a lack of information on the part of these acquaintances, ie., they may not know that someone they love is contemplating suicide.

A common sentiment expressed among those close to someone who has killed themselves is how shocking the loss is. A cynical interpretation of this expression is that it might be a self-protective mechanism used to allay feelings of guilt or responsibility for having not intervened. However, evidence suggests that accurately predicting suicidal behavior is a difficult task, partly because those considering killing themselves may deliberately conceal their plans to avoid unwanted interventions[v]. This constitutes an information asymmetry that, if remedied, could spur preventative action on the part of close friends and family. The current bill, which sets out to “create and implement a statewide awareness campaign about suicide” could help to allay some of this asymmetry, although the evidence supporting the efficacy of public awareness campaigns in preventing suicide is limited[vi].

Failure of information can also occur in the other direction. Depression, which is estimated to affect more than 60% of people who commit suicide, can cause both feelings of worthlessness and hopelessness that may be considered at least partly delusional[vii]. Someone considering suicide may discount their future levels of happiness much more steeply than is actually justified.

This undervaluation of the future, coupled with feelings of isolation and shame that so often accompany suicidal thoughts, creates a dangerous situation wherein an individual may believe that suicide is their only option, or that attempting suicide is the most productive way of getting help ("a cry for help").

Raising awareness about the resources available to suicidal individuals such as the suicide hotline, as this bill intends, could provide a signal that choices other than attempting to kill oneself are available. Again, however, the studies of these types of interventions show mixed results.

The grief experienced by friends and family of those who have committed suicide can also cause long-term, downstream economic consequences beyond the immediate bereavement period. A recent study showed the depression rates among parents more than double following the suicide of their child, and rates of anxiety disorders increase as much as 50%[viii].

There are also substantial direct costs associated with suicide and suicidal behavior. A 2008 study by the Colorado Suicide Prevention Resource Center estimated that the average costs of a suicide attempt in terms of healthcare, police investigations, and other non-private costs totaled nearly $12,000 per incident. 12,800 attempts were recorded in the same year, amounting to a total cost of approximately $156 million dollars. Healthcare and investigative resources spent on "successful" suicides cost $21 million[ix], bring total expenditures to $177 million.

The majority of these costs may be absorbed by private insurers or paid out of pocket, and so do not represent an externality. However, if Medicaid is paying approximately one quarter of these costs, this still represents a burden to the public of nearly $45 million dollars per year[x], or $3300 per incident.

Unfortunately, these numbers may not yet be useful in terms of performing a cost-benefit analysis on suicide prevention programs. The bill calls for the implementation of evidence-based training programs, but data on such programs are scant. Furthermore, such data generally report only the perceived effectiveness of a program in changing attitudes about suicide. Hard measures such as deaths or injuries averted are almost nonexistent. Even where hard data exists, information pertaining to efficacy may be of limited predictive potential due to cultural differences and the complex social factors that motivate suicidal behavior[xi]. In contrast, there is more robust evidence that demonstrates treating mental illness (rather than training and educating the general public about suicide) is an effective approach to reducing suicide in adults and youth alike[xii].

In its present form, HB18-1177 seems to reflect many of the ambiguities surrounding the potential benefits and efficacy of suicide intervention programs. Instead of making suicide prevention training mandatory, it merely makes it available. Nor does it require adolescents be screened, even if it lowers the age of consent. It "encourages" further engagement by the Office of Suicide Prevention but allocates less than $100,000 for use by the Prevention Services Division. If the benefits of suicide prevention were well documented, it's likely that stronger measures would be implemented.

As it stands, it is difficult to judge the value of the present bill. In principle, the intervention of government may be warranted to minimize negative externalities of suicides and to provide better information to those in crisis, but its methods of doing so are largely unproven. An amendment should be made that the requires the Office of Suicide Prevention to prepare an analysis of the efficacy of the measures enacted by this bill one year after their implementation. Armed with this information, future legislatures will be better positioned to address Colorado's suicide problem in more meaningful ways.

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[ix] See citation iii.

[x] Nationally, Medicaid expenditures as a fraction of Medicaid + Private Insurance + Out of pocket expenses total about 27%. See *National Health Expenditures 2016 Highlights*. Accessed May 1st, retrieved from: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/highlights.pdf

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