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Commentary: Opioid use disorder and suicide: An important opportunity to address two significant public health epidemics

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ABSTRACT

Nationwide, the opioid epidemic continues to have a significant and widespread adverse impact on morbidity and mortality. The number of individuals dying by suicide and unintentional overdose has continued to increase over the past decade, with opioids being involved in a significant proportion of each category of mortality in 2017. Currently, most strategies for decreasing opioid-overdose deaths do not include systematic screening for suicide risk, nor do they address the necessity to customize interventions for those who misuse opioids to decrease near-term suicide risk (defined here as less than 72 h) factors. Improved screening of near-term and chronic suicide risk along with rapid access to treatment is of critical importance to prevent opioid-related deaths by suicide.

Suicide is the tenth leading cause of death in the United States across all age groups and a top five cause of death among individuals aged 10–54. The national suicide rate has been steadily increasing over the past several decades from 10.5 per 100,000 in 1999 to 14.0 per 100,000 in 2017 (Centers for Disease Control and Prevention, 2018). Although potentially beneficial, currently there are no universally utilized guidelines or protocols for screening individuals with or without opioid use. A total of 47,173 Americans died by suicide in 2017 with an average of 129 deaths by suicide per day (Centers for Disease Control and Prevention, 2018). The presence of a Substance Use Disorder (SUD) is a well-known risk factor for suicide and an Opioid Use Disorder (OUD) holds particular risk for suicide compared to other SUDs (Yuodelis-Flores and Ries, 2015; Bohnert et al., 2017; Bohnert and Ilgen, 2019). The annual age-adjusted death rate from suicide with opioid poisoning as a contributing cause of death has doubled since 1999 (Braden et al., 2017; Heron, 2018). Further, OUD carries inherent high risk of death by self-injury (overdose), regardless of any additional risk factors, given the accessibility of opioids, ease of administration, low threshold for respiratory depression, and higher likelihood of lethality (Conner et al., 2018).

As a field, if we were to accept this operating assumption, research attention needs to include a focus on the observation of the fluctuation of catalytic risk factors very proximally to the self-injury death. Our attention has been to identify the long ranging risk factors longitudinally and chronically, but the answer may lie in the examination of much more acute and near-term contributing and triggering factors to opioid overdose related death - whether intentional or not.

Importantly, the rates of suicide involving substances may be even higher than reported when using an enhanced conceptualization of self-injury mortality (SIM), wherein we consider both known suicides and estimated non-suicide deaths from opioid and other drug self-intoxication.

When examined in this way, the combined number of deaths yearly among Americans from suicide, combined with unintentional overdose is greater than 110,000; exceeding the yearly numbers of deaths from diabetes (Rockett et al., 2018).

Having an OUD is like walking on a tight rope, unanchored, crossing a canyon - if the sky is blue, with no wind, and if the acrobat is skilled enough to inherently adjust their pace, core, and breathing in a mindful way, as well as their internal affect, cognitions, and their management, then their danger is high but the acrobat has a higher chance of crossing the canyon safely. We posit that the risk of self-injury death in OUD can be viewed as sudden crosswinds and rapid changes in weather patterns, or fraying of the tight rope, while the acrobat is on the tightrope in the middle of a canyon, which likely results in increased emotional distress, negative thinking, and non-adaptive management. Shifting the attention of clinicians to those changes in internal and external conditions, very proximal to self-injury deaths, becomes critical. For instance, chronic (more stable risk) factors inform who is at an increased risk to have an adverse outcome (i.e., death), and this is incredibly important.

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However, the key question for clinicians tasked with determining an individual's imminent risk level (and subsequent intervention) is to determine "*when"* a high-risk individual would have this outcome. Why did a high-risk person die today compared to a previous day, when they were also at high risk but didn't experience this outcome (Bagge and Borges, 2017; Borges et al., 2017; Kessler et al., 1999; Bagge et al., 2013)? Interviews with expert clinicians perceive that identification of proximal factors (changes within 72 h) could help determine the "*when*" (Desjardins et al., 2016). In individuals with SUDs, factors identified by clinical experts include:

1) the presence of acute withdrawal/craving;
2) changes in patterns of use;
3) loss of agency, loss of identity, lack of a sense of belonging, eroding of social supports, dysphoria, shame, and humiliation and insomnia;
4) increased use of other substances; and
5) events such as recent relapse, interpersonal negative life events such as loss of a romantic relationship, legal problems or loss of safety net.

The reduction in opioid related suicides requires a multi-pronged approach involving both improved understanding of the heterogeneity of the population of individuals using opioids and identification of and intervention for at-risk individuals (Oquendo and Volkow, 2018). Thus, it is imperative that all providers who deliver care for individuals with OUD provide timely assessment of both OUD and screening for suicidal ideation. This includes individuals with chronic pain, accompanying mental health conditions, co-occurring SUDs and desperate life circumstances. Additionally, understanding the role of temperament, resilience and the effect of adversity on regulation is of key significance. This can lead to the development of improved screening instruments for individuals in this population. Time is of the essence with assisting individuals who are either suicidal and/or in the midst of opioid misuse, in order to prevent opioid-related overdose and possibly, death.

The public health crises of both suicide and unintentional overdose has led to large-scale prevention and treatment efforts as outlined in the National Strategy for Suicide Prevention (Department of Health and Human Services, Office of the Surgeon General, National Action Alliance for Suicide Prevention, 2012) and the Substance Abuse and Mental Health Services Administration (Center for Substance Abuse Treatment, 2009). The latter is a coalition of 20 leading national organizations representing healthcare providers and other key stakeholders who are working on the front lines of the opioid crisis and the Opioid Response Network, State Targeted Response Technical Assistance Consortium. The upcoming Joint Commission National Patient Safety Goal (NPSG) 15.01.01 on reducing the risk for suicide, which will be implemented on July 1, 2019, for hospitals and behavioral health care organizations (Joint Commission R3 Report National Patient Safety Goal for Suicide Prevention, 2018) aims to address these concerns in health care settings.

Additional public resources designed to address both suicide and OUDs must be developed, implemented and evaluated. Further research on the immediate, near term factors involved within OUD-related self-injury may help the field to develop novel intervention methods. These methods could be tailored to serve as a short-term safety net to mitigate near-term risk. For example, integration of traditional crisis services with addiction helplines may increase individual support and delivery of timely care. In addition, innovative big data, machine learning approaches and tools involving social media may enhance treatment options and access.

The goal of treatment is to treat acute and chronic modifiable risk factors for individuals with OUDs and to continuously maintain their safety. The following timely steps can be universally undertaken to ensure safety from death for ALL individuals who use opioids or have been diagnosed with OUD:

- Accurate suicide risk assessment and clear documentation of the acute risk in health care settings and the community
- Identify and provide appropriate level of care [Inpatient hospitalization, residential SUD treatment, Intensive Outpatient Program (IOP), general outpatient care]
- Implement the necessary interventions in the level of observation and environment of care in health care settings and overdose prevention tools in the community
- Initiate appropriate initial treatment for OUD and co-occurring SUDs and mental health conditions
- Engage individuals with OUDs in specific treatments for addressing suicidal ideation (Voss et al., 2013)
- Maintain adequate follow-up with identified supports

If we accept that the risk of self-injury death in OUD is chronically high and sustained, using only the traditional risk-factor-based approach (e.g., stratifying risk by the presence of demographic factors, affective disorders or intentionality), will delay our progress in understanding how to help prevent deaths by self-injury in individuals with OUD. Rather, we recommend a shift in focus which involves a heightened consideration of changes within individuals within the near-term, and improved access to treatment for OUD. For individuals with OUDs, this means increased access to Medications for Opioid Use Disorder (MOUD), ongoing counseling to provide support and improve recovery skills and access to various supports such as case-management, social work, vocational rehabilitation, legal-aid and housing, thereby improving hope and decreasing shame which can in turn reconnect an individual to an increased wish to live and decreased wish to die. Specific investigation towards these conditions must be directed to help individuals to cross the tightrope, anticipating for the gusts of wind that might push them off, and provide a net to catch them when they fall.

Declaration of competing interest

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