REPORT

Preventing adolescent suicide: Recommendations for policymakers, practitioners, program developers, and researchers

Pamela Morris-Perez | Rachel Abenavoli | Adam Benzekri |
Sarah Rosenbach-Jordan | Gianna Rose Boccieri

Department of Applied Psychology, Steinhardt School of Culture, Education, and Human Development, New York University, New York, New York, USA

Correspondence: Pamela Morris-Perez, Department of Applied Psychology, Steinhardt School of Culture, Education, and Human Development, New York University, New York, NY, USA.
Email: pam7@nyu.edu

EXECUTIVE SUMMARY

For much of the past decade, suicide has been the second leading cause of death for adolescents in the United States, and suicide rates among adolescents have been rising for the last 15 years. Suicidal thoughts and behaviors among adolescents were common before COVID-19 and have become an increasing public health priority in the pandemic's wake. In this *Social Policy Report*, we review evidence for suicide prevention strategies designed to address these rising trends. We make recommendations for federal, state, and local policymakers and practitioners; program developers in organizations that design and implement programming for youth; and academic and nonacademic researchers. Where research evidence is strong, we suggest legislation, funding, and implementation. In areas where gaps in evidence exist, we recommend program development and research. Our recommendations follow the order in a taxonomy adapted from the Centers for Disease Control and Prevention, beginning with strategies that change the structural conditions in which adolescents live and concluding with strategies that support adolescents following a suicide (i.e., postvention). We find strong evidence for, and recommend policy implementation of: restricting access to lethal means; LGBTQ+ affirming policies; screening for suicide risk in medical settings; and community-wide investments via the Garrett Lee Smith Memorial Act. In schools, we find benefits of, and recommend funding and implementation of, youth-focused programs. Even so, gaps exist: (a) research on economic policies for adolescents is nonexistent; (b) while mental health care access is a barrier, we do not know how to reduce youth suicide rates via changing care access; (c) data on crisis lines are encouraging but descriptive; and (d) school personnel training increases knowledge and confidence but not adolescent help-seeking. Finally, guidelines for response following a suicide loss focus on immediate support and are based on limited research; this is an area for program development and research.

For Policymakers and Practitioners

Given the strength of the research evidence, we recommend the following for federal, state, and local policymakers and practitioners:

- We recommend state-level policymakers restrict access to firearms via regulations and safe storage; public health officials implement firearm safe storage programs and build barriers on buildings/bridges; public health officials and health care providers distribute lockboxes for medications; and the Consumer Product Safety commission enact regulations that restrict the size of bottles for lethal over-the-counter medications.

- We recommend that state-level policymakers protect and implement strategies that treat LGBTQ+ youth equally and affirm LGBTQ+ identities (e.g., maintain same-sex marriage laws, protect affirming school environments/safe spaces for LGBTQ+ youth); state policymakers and school district/school leaders fight anti-LGBTQ+ legislation, policy, and practices that limit access to medical care, sports, representation in classroom conversations; and school leaders support LGBTQ+ affirming spaces (e.g., GSAs).
- We recommend that The Joint Commission[1] update its recommendations to include universal suicide risk screening for adolescents; the Centers for Medicare & Medicaid Services at the Department of Health and Human Services require screening for suicide risk in pediatrics and emergency departments as part of routine care; and health care providers implement such screening practices.
- We recommend that the federal government increase funding for the Garrett Lee Smith Memorial Grants that provide funding to communities for suicide prevention activities in youth-serving organizations and for the Suicide Training and Awareness Nationally Delivered for Universal Prevention (STANDUP) Act of 2021 that offers suicide prevention funding to schools to implement effective programs. We also recommend that public health and school district leaders apply for such funding and implement evidence-based practices.
- We recommend that state and local policymakers fund and monitor school district- and school-level implementation of state-wide suicide prevention laws and that school district/school leaders ensure implementation of such laws.
- We recommend that the state and federal Departments of Education fund and encourage implementation of evidence-based school youth-focused programs,[2] in tandem with school staff training programs, and that school district/school leaders implement such programs.
- We recommend that the National Committee on Vital and Health Statistics create national standards for suicide death classifications and require workforce training to reduce variation across place and persons that can lead to underreporting for minoritized racial/ethnic and LGBTQ+ groups. We also recommend that public health officials ensure that coroners and medical examiners receive such training.

For Program Developers

Given gaps in programming, we recommend that those who develop programs:

- Engage peer leaders to spread messages of help-seeking as normative in schools, in youth-serving organizations, and on social media.

- Develop programs that address unique needs of groups at high risk (e.g., Indigenous, multi-racial, LGBTQ+, and rural adolescents). Also develop programs for racial/ethnic minority youth for whom there is limited programming.
- Develop programs that support adolescent needs for identity, meaning-making, belonging/connectedness, and hope for the future.
- Involve youth directly in the design of programs, amplifying youth voices and giving youth opportunities to take (positive) risks.
- Develop postvention strategies that support the long-term resilience of adolescents who have experienced the loss of a peer or family member to suicide.

For Researchers

Given gaps in research evidence, we recommend greater federal funding for research in adolescent suicide, and that researchers:

- Conduct experimental and quasi-experimental research on the impact of economic policies to reduce poverty on adolescent suicide death and attempt rates.
- Conduct research on inclusive policies and practices (i.e., diversity, equity, inclusion, and belonging initiatives) for minoritized racial/ethnic groups (Black, Latino/a/x/e, Indigenous, and Asian/Pacific Islander adolescents).
- Conduct experimental and quasi-experimental studies on the impact of increasing mental health care on adolescent suicide rates.
- Conduct quasi-experimental studies on the roll-out of crisis services across states. Study differences in implementation across states and localities to guide recommendations for best practices and identify gaps in program design and delivery.
- Test the impact of effective peer gatekeeper programs on minoritized racial/ethnic and LGBTQ+ adolescents and in a wider set of school and neighborhood contexts.
- Study promising postvention efforts to refine existing guidelines.
- Build data systems for real-time analysis of suicide fatalities and thoughts and behaviors, and that permit examination of person, place, and policy characteristics in tandem.

BACKGROUND AND OVERVIEW OF THE REPORT

For much of the past decade, suicide has been the second leading cause of death for adolescents in the United States, after unintentional injuries (Centers for Disease Control and Prevention [CDC], 2023a). Suicide is a global public health issue highlighted in the United Nations Third Sustainable Development Goal (Target 3.4.2; World Health

Organization, 2022). Adolescent deaths by suicide have been rising in the United States for the last 15 years, with an age-adjusted rate at 7 per 100,000 adolescents or 2900 deaths in 2021 (CDC, 2023a). Rates of suicidal thoughts (i.e., suicidal ideation) and suicidal behaviors (i.e., plans and attempts) are far more common than fatalities and much higher among adolescents than adults. In 2021, one in five adolescents reported seriously considering suicide and 1 in 10 reported attempting suicide in the last year (CDC, 2023b). The recent increase in suicidal thoughts and attempts post-COVID represents a continuation of rising trends that began in 2009, well preceding the pandemic (CDC, 2023b) (See Box 1 for definitions and terminology used in this report).

BOX 1   The language of suicide prevention and this report

Our report relies on the following definitions:

"*Adolescents*": youth between the ages of 10–19.

"*LGBTQ+ youth*": Lesbian, gay, bisexual, transgender, queer and other nonheterosexual, noncisgender youth.

"*Suicidal thoughts (or suicide ideation) and suicidal behavior*": thoughts of dying, making plans to end one's life, and suicide attempts. (We do not include nonsuicidal self-injurious behavior [i.e., self-harm]).

"*Suicide attempt*" is an act in which someone harms themselves with an intent to end their life but does not die.

"*Suicidology*" is the scientific field for suicide research.

The suicide field is replete with provocative terminology, in part because of its long history as a stigmatized behavior and condition. We use (and recommend) the following language for discussions of suicidal thoughts and behaviors among adolescents:

"*Died by suicide*" rather than "committed suicide," which hearkens back to the history of suicide as being considered a crime and/or sin.

"*Suicide death/fatality*" rather than "successful suicide attempt" that implies something positive as a result of the suicide attempt.

"*Suicide social transmission*" rather than "contagion" that implies an infectious disease framework for transmission of risk among individuals in social groups.

Adolescent groups most at risk for suicide fatalities include Indigenous adolescents, boys, and adolescents in rural communities (CDC, 2023a); those most at risk for suicidal thoughts and attempts include Indigenous adolescents, multiracial adolescents, girls, and LGBTQ+ adolescents, particularly bisexual and transgender adolescents (CDC, 2023b). Recent data show a greater *increase* in suicide fatality rates for racial/ethnic minority (Black, Latino/a/x/e, Indigenous, and Asian/Pacific Islander) adolescents as compared with adolescents overall (CDC, 2023a) and a greater increase in suicidal thoughts and attempts for Black youth, resulting in rates for Black adolescents now largely comparable to that for White adolescents (Lindsey et al., 2019). Racial/ethnic minority adolescents are an increasing proportion of suicide deaths among adolescents each year, due to increasing suicide rates *and* changing population demographics in the United States (CDC, 2023a; US Census Bureau, 2022). See Appendix A for detail on rates and trends.

Although adolescent suicides have been rising for over a decade (CDC, 2023a, 2023b), the pandemic's toll on activities, social connections, and deaths made these trends increasingly visible and, perhaps as a result, physicians, psychiatrists, and children's hospitals declared a *National State of Emergency in Child and Adolescent Mental Health* (AAP-AACAP-CHA, 2021), the Surgeon General released a youth mental health advisory (Office of the Surgeon General, 2021), and the American Academy of Pediatrics (AAP) and American Foundation for Suicide Prevention (AFSP) released a practice guide for youth-serving organizations (AAP/AFSP Blueprint, 2023). Annual funding by the National Institutes of Health (2023) for youth suicide research doubled post-COVID, from $102 million annually in 2017–2019 to $212 million annually in 2020–2022. These efforts follow suicide prevention goals set previously by AFSP and Zero Suicide (albeit neither focused on youth) and a 1999 Surgeon General call for action (although research on youth-focused strategies was quite limited at the time; Office of the Surgeon General, 1999). The recent calls highlight approaches in primary care, emergency departments, communities, and schools, as part of a multipronged strategy for mental health promotion, prevention, and treatment.

This *Social Policy Report* responds to these calls by reviewing evidence for prevention strategies that have emerged over the last several decades to reduce adolescent suicide deaths and suicidal thoughts and behaviors among young people, and offering recommendations for policy, practice, program development, and research.[3] Our review differentiates studies assessing *causal* relations between strategies and adolescent outcomes (i.e., experimental and rigorously-designed quasi-experimental designs that account for confounding

influences)[4] from those that examine *associations* between strategies and outcomes, with causal research guiding our policy and practice recommendations.

We focus on adolescents ages 10–19, a group at increasing risk of suicide over this age period (CDC, 2023a). Developmental psychologists have long considered adolescence a period of high risk/high reward in which adolescents' emerging independence can lead to consequential risk-taking, while new ways of thinking can be generative (Steinberg, 2008, 2014). Advances in neuroscience suggest adolescents have a highly-active reward system that leads them to take risks and that those risks can be positive (e.g., auditioning for a play) or negative (e.g., shoplifting; Ernst, 2014; Telzer, 2016). Peers play an important role in adolescents' positive and negative risk-taking (Cascio et al., 2015; Nelson et al., 2005; Steinberg, 2015; Telzer et al., 2018; Van Hoorn et al., 2016). Generation Z, the most recent cohort to enter young adulthood (born 1997–2012), have garnered significant concern given the macro-context in which they are developing (Dimock, 2019). While limited research investigates the impact of macro-conditions on youth suicide, Gen Z youth have been required to participate in active-shooter drills (Moore-Petinak et al., 2020), have experienced the ubiquity of smartphones and social media (Twenge et al., 2022; Williams, 2015) and are growing up under a worsening climate crisis (Gislason et al., 2021), which may undermine mental health.

We focus on *prevention strategies* that school personnel, community leaders, and health care providers can implement for all adolescents irrespective of suicidal risk.[5] *Intervention* strategies, for adolescents *already at suicidal risk due to an identified mental health condition* as determined by a mental health professional, have been the prevailing paradigm for this field.[6] Yet, barriers to mental health care (Clement et al., 2015; Gulliver et al., 2010) make suicide prevention's reliance on clinical care alone insufficient for reaching adolescents at an early point in their suicide risk trajectory.[7] We posit the effectiveness of layered approaches, such that: adolescents know where to get help; the peers and adults around them can recognize the signs of suicidal thinking and know how to ask about it, respond to it, and link youth to resources; and environments are protective to deter suicidal action (AAP/AFSP Blueprint, 2023; Morris, 2021). Ideally, all of this would occur in a just context in which youth feel accepted and hopeful about the future, although the benefits of making communities more accepting and hopeful are not well studied.

Our review updates Gould et al.'s (2003) paper that reviewed prevention strategies through the late 1990s.[8] We present evidence behind policy and public health approaches, strategies shown effective in pediatric primary care and emergency departments,

and a rising number of innovative programs in schools. We provide recommendations for policymakers, practitioners, program developers, and researchers, offering a strategic vision for the future of adolescent suicide prevention.

STRATEGIES TO PREVENT ADOLESCENT SUICIDE: A REVIEW

Overview

Table 1 presents our taxonomy for organizing suicide prevention strategies (adapted from CDC, 2022; see Column 1 for overarching domains and Column 2 for prevention strategies within domains).[9] Column 3 summarizes our research review on which we base recommendations (see later sections for detail on studies reviewed and citations). Column 4 presents our recommendations for policymakers, practitioners, program developers, and researchers. We discuss strategies in the order proposed in the CDC taxonomy, beginning with strategies aimed at changing the structural conditions in which adolescents live and concluding with strategies aimed at messaging about suicide deaths and supporting adolescents following a suicide (i.e., postvention). We supplement the CDC taxonomy with a final category on data infrastructure.

Our review highlights a number of promising strategies to address adolescent suicide and signals the ways in which the field has evolved over the last two decades. We find strong evidence for, and recommend policy implementation of: restricting access to lethal means (e.g., firearms, building/bridge protections, and medication overdose protections); LGBTQ+ affirming policies; screening for suicide risk in medical settings; and community-wide investments via the Garrett Lee Smith Memorial Act. In schools, we find benefits of, and recommend funding and implementation of, youth-focused programs, especially those aimed at building skills and changing norms through social networks. Even so, large gaps exist: (a) research on economic policies for adolescents is nonexistent; (b) while mental health care access is a barrier, we do not know how to reduce youth suicide rates via changing care access; (c) data on crisis lines are encouraging but descriptive; and (d) school personnel training increases knowledge and confidence but not adolescent help-seeking. Finally, guidelines detailing appropriate responses following a suicide loss (i.e., postvention) focus on immediate support and are based on limited research; this is an area for program development and research.

While suicidologists have made progress in identifying effective strategies for adolescent suicide, *only a handful of youth-focused strategies have been proven*

TABLE 1 Suicide prevention strategies, evidence, and recommendations.

1. Strategy domain	2. Prevention strategy	3. Summary review of findings from past research	4. Recommendations for policymakers, practitioners, program developers, and researchers
Strengthen economic supports	• Strengthen household financial security	• Strengthening financial security reduces overall (adult) suicide rates, but this strategy has not been tested for adolescents. Evidence for adolescence is descriptive and mixed.	• **Researchers**: Conduct experimental and quasi-experimental research on the impact of economic policies to reduce poverty on adolescent suicide death and attempt rates.
Create protective environments	• Reduce access to lethal means	• Restricting access to lethal means is effective in reducing suicide deaths (despite modest substitution effects), with benefits of firearm regulations and installation of barriers and nettings in places known for suicide deaths. Rigorous trend analysis finds the Clean Air Act of 1970 led to reductions in suicide rates in the 1990s by reducing deaths by carbon monoxide poisoning; quasi-experimental research in the U.K. shows the value of reducing the size of analgesic packaging.	• **Policymakers and Practitioners**: State-level policymakers—restrict access to firearms via regulations and safe storage. Public health officials—implement firearm safe storage programs and build barriers on buildings/bridges. Public health officials and health care providers—distribute lockboxes for medications. Consumer Product Safety commission—enact regulations that restrict size of bottles for lethal over-the-counter medications.
Create accepting environments	• Create accepting policies and cultures	• Implementation of same-sex marriage laws reduces suicide attempts among all high school students, especially for LGB youth. Policies and practices affirming LGBTQ+ youth show similar benefits. Research on inclusive policies for minoritized racial/ethnic groups is lacking.	• **Policymakers and Practitioners**: State policymakers—protect and implement strategies that treat LGBTQ+ youth equally and affirm LGBTQ+ identities (e.g., maintain same-sex marriage laws, protect affirming school environments for LGBTQ+ youth). State policymakers and school district/school leaders—fight anti-LGBTQ+ legislation, policy, and practices that limit access to medical care, sports, representation in classroom conversations. School leaders—support LGBTQ+ affirming spaces (e.g., GSAs). • **Researchers**: Conduct research on inclusive policies/practices (i.e., diversity, equity, inclusion, belonging initiatives) for minoritized racial/ethnic groups.
Improve access to suicide care	• Ensure mental health insurance parity and increase access to mental health care • Provide rapid and remote access to help	• Mental health parity laws increase mental health care utilization and diagnoses for adolescents. Care access is of concern although there is limited research on the impact of greater access on suicide rates. • Usage rates of crisis lines (relative to need) are low but some lines reach otherwise underserved populations. Reductions in distress or suicidal ideation are observed following calls, but there is no causal evidence of the impact of crisis lines on suicide rates. Counselor training and experience contributes to better outcomes for adult callers (there is no comparable information for adolescents).	• **Researchers**: Conduct experimental and quasi-experimental studies on the impact of increasing mental health care on adolescent suicide rates. • **Researchers**: Conduct quasi-experimental studies on the roll-out of crisis services across states. Given national implementation of crisis lines, study differences in implementation across states and localities to guide recommendations for best practices and identify gaps in program design and delivery.

TABLE 1 (Continued)

1. Strategy domain	2. Prevention strategy	3. Summary review of findings from past research	4. Recommendations for policymakers, practitioners, program developers, and researchers
Identify and support young people at risk	• Identify adolescents at suicidal risk • Invest in suicide prevention efforts in schools and youth-serving organizations • Train adult gatekeepers • Train peer gatekeepers and change norms	• Suicide-specific universal screening is acceptable in medical settings, identifies suicidal adolescents that would be otherwise missed, does not lead to more suicidal thinking, and improves treatment initiation. • The Garrett Lee Smith Memorial Act of 2004 provided resources for a broad range of youth suicide prevention across settings in communities and has been shown to be effective. The STANDUP Act of 2021 offers suicide prevention funding to schools to implement effective programs. • States vary in school district-level laws and there is large variation in implementation at the district level. • Training school personnel to identify and refer adolescents in schools increases adult knowledge and confidence but not adolescent help-seeking. • Training peers in schools is effective, when aimed at recognizing signs and helping friends seek support. Effective programs leverage friend networks through peer leaders. Effective programs have not yet been tested for impact on minoritized LGBTQ+ or racial/ethnic groups. • Programs focus on recognizing the signs and connecting youth to care, with inattention to adolescent needs for identity, meaning-making, belonging/connectedness, and "finding a life worth living." Only some programs permit youth to be involved in the design of program activities.	• **Policymakers and Practitioners**: The Joint Commission—update recommendations to include universal suicide risk screening for adolescents. Centers for Medicare & Medicaid Services (CMS) at the Department of Health and Human Services—require screening for suicide risk in pediatrics and emergency departments as part of routine care. Healthcare providers—implement such screening practices. • **Policymakers and Practitioners**: Federal government—increase funding for the Garrett Lee Smith Memorial Grants and the Suicide Training and Awareness Nationally Delivered for Universal Prevention (STANDUP) Act of 2021. Public health and school district leaders—apply for such funding and implement evidence-based practices. • **Policymakers and Practitioners**: State and local policymakers—fund and monitor school district- and school-level implementation of state-wide suicide prevention laws. School district/school leaders—ensure implementation of such laws. • **Policymakers and Practitioners**: State and federal departments of education—fund and encourage implementation of evidence-based school youth-focused programs, in tandem with school staff training programs. School district/school leaders—implement such programs. • **Program Developers**: Engage peer leaders to spread messages of help-seeking as normative in schools, in youth-serving organizations, and on social media. • **Program Developers**: Develop programs that address unique needs of groups at high risk (e.g., Indigenous, multi-racial, LGBTQ+, and rural adolescents). Also develop programs for racial/ethnic minority youth for whom there is limited programming. • **Program Developers**: Develop programs that support adolescent needs for identity, meaning-making, belonging/connectedness, and hope. • **Program Developers**: Involve youth directly in the design of programs, amplifying youth voice and giving youth opportunities to take (positive) risks. • **Researchers**: Test the impact of effective peer programs on minoritized racial/ethnic and LGBTQ+ adolescents and in a wider set of school and neighborhood contexts.

TABLE 1 (Continued)

1. Strategy domain	2. Prevention strategy	3. Summary review of findings from past research	4. Recommendations for policymakers, practitioners, program developers, and researchers
Lessen harms and prevent future risk	• Report and message about suicide safely and for prevention • Intervene after a suicide (postvention)	• Exposure to a suicide death is associated with greater risk, and national reporting guidelines reduce such risks. Experimental research points to the benefits of "positive, action-oriented messages." • Expert consensus guidelines detail appropriate responses after a suicide death. Yet guidelines are focused on crisis response rather than longer-term grief support and are based on very limited research.	• **Program Developers**: Develop postvention strategies that support the long-term resilience of adolescents who have experienced suicide loss. • **Researchers**: Study promising postvention efforts to refine existing guidelines.
Data Infrastructure		• Suicide-related mortality data is affected by the lack of universal burden of proof and other standards that result in underreporting. • To date, research on youth suicide trends has focused on individual-level characteristics (race/ethnicity, gender identity) with less attention to the context in which youth develop.	• **Policymakers and Practitioners**: National Committee on Vital and Health Statistics—create national standards for suicide death classifications and require workforce training to reduce variation across place and persons. Public health officials—ensure that coroners and medical examiners receive such training. • **Researchers**: Build data systems for real-time analysis of suicide fatalities and suicidal thoughts/behaviors, and that permit examination of person-, place-, and policy- characteristics in tandem.

effective (contrast that with nearly 100 middle and high school social-emotional learning programs reviewed by Durlak et al., 2011). Moreover, programs do not address *adolescent needs for identity, meaning-making, belonging/connectedness and "finding a life worth living,"* and, thus, where we recommend program development. Finally, successful programs have yet to be tested with minoritized youth (i.e., racial/ethnic minority and LGBTQ+ youth; although work is underway by our team and others (e.g., Goodwill, Guerrero Vasquez, Wilcox, and Wyman), and research and public discourse have largely ignored the higher suicide risk of multiracial and bisexual youth, who may struggle to "fit in" (Nishina & Witkow, 2020). Here, too, we recommend program development and research. Although funding for youth suicide has increased in the last few years, only 14% of the annual $1.550 billion in funding for youth mental health research through the National Institutes of Health (2023), is allocated to youth suicide. Increasing funding for youth suicide may close these gaps.

We suggest *layering* approaches to ensure repeated opportunities to reach struggling adolescents by implementing strategies in medical settings, communities, and schools.[10] We are encouraged by reductions in rates of suicide attempts and mortality from the Garrett Lee Smith Memorial Grants that combined increased access to services with greater surveillance, awareness programming, and stigma-reducing strategies. No single strategy is likely to move the needle in reducing adolescent suicide, but a combination of layered strategies, with efficacious treatment, might bring down rates of adolescent suicide, addressing this public health priority.

In the next sections, we discuss in greater detail the evidence behind prevention strategies that provide the foundation for our recommendations.

Strategies to prevent suicide by strengthening economic supports

Social inequity may confer suicide risk through household instability, food insecurity, and other forms of economic deprivation. The largest body of work in this area has considered labor market policies to address poverty (i.e., *strengthening household financial security*).

Decades of research have documented poverty-related disparities across developmental outcomes from early childhood to adolescence (Duncan & Brooks-Gunn, 1997; Duncan et al., 1998), with evidence for causal links between increases in income and outcomes for children by leveraging policies aimed to reduce

poverty (Duncan et al., 2011). While suicide risk is not typically studied, outcomes such as internalizing and externalizing behavior and self-regulatory skills that are associated with suicide risk are examined. Measures to strengthen financial security have been shown to reduce adult suicide rates in quasi-experimental studies, but have not been examined for adolescents (Dow et al., 2020; Flavin & Radcliff, 2009). For example, leveraging difference-in-difference models that control for other state-level differences, Dow et al. (2020) demonstrated that the implementation of state-level policies that increased minimum wage or the Earned Income Tax Credit lowered nondrug suicide rates for adults with a HS diploma or less (e.g., increasing minimum wage by 10% reduced nondrug suicides by 2.7%). Similarly, controlling for state social capital, increasing state spending on transfer payments, medical benefits, and family assistance is associated with decreased state-level adult suicide rates (Flavin & Radcliff, 2009). For adolescents, parental education (Chen et al., 2022) and socioeconomic status (Farrell et al., 2019) are inversely associated with suicidal ideation and attempts, but not deaths by suicide (Benny et al., 2023; Braudt et al., 2019). Correlational evidence on the role of income inequality in adolescent suicide deaths is also mixed (Benny et al., 2023; Wadsworth et al., 2014). While labor market policies may be promising, there is no causal evidence yet that such policies impact adolescent suicide outcomes. Additional experimental and quasi-experimental research is needed.

Strategies to prevent suicide by creating protective environments

A key suicide prevention strategy is *reducing access to the means* (i.e., methods) by which someone can take their life. Reducing access to a "preferred" method for suicide can reduce attempts and deaths for many, but not all, suicidal individuals (Hawton, 2007; Yip et al., 2012). Common individual-based approaches include safety planning with counseling for lethal means restriction (Stanley & Brown, 2012) and counseling with firearm safety devices on safe practices (Rowhani-Rahbar et al., 2016). We focus here on U.S. population-based approaches, but refer readers to research on pesticide restrictions in Sri Lanka (Gunnell et al., 2017; Knipe et al., 2017; Mann et al., 2021) and limits to the size of packets for analgesic medication in the U.K. (Hawton et al., 2004).

A commonly argued approach to lethal means restriction is reducing access to firearms, given that suicide attempts via firearms result in death 90% of the time, substantially higher than fatality rates using other methods (Conner et al., 2019; Shenassa, 2003). Adolescent suicide rates are higher in states with higher gun ownership, even after controlling for prior

suicide rates (Knopov et al., 2019), but data on the causal impact of firearm safety programs (e.g., safe storage programs) is more limited. Yet, some studies show promise of gun regulations: the implementation of restrictive licensing laws in D.C. resulted in reduction in suicide (2.6 per month before the legislation to 2.0 per month following), with no similar reduction in neighboring counties (Loftin et al., 1991) and firearm seizure laws in Connecticut and Indiana resulted in reductions in firearm suicide rates compared to matched control states (7.5% reduction in Indiana; 1.6% reduction in Connecticut immediately following the law but 13.7% after the Virginia Tech shooting when enforcement was increased; Kivisto & Phalen, 2018). Other countries have more compelling research, such as Switzerland's efforts to reduce the size of its army; doing so removed firearms from homes and resulted in reductions in suicide deaths among young men using a comparative interrupted time series design (Reisch et al., 2013). Notably, a partial substitution effect is often detected in which other means replace firearms. For example, Kivisto & Phalen (2018) find that suicide reductions in Connecticut (but not Indiana) are offset by nonfirearm suicides; Reisch et al. (2013) find that 22% of the reduction in firearm suicides were substituted. Even so, reforms have typically been found to result in a net decrease in suicides, and thus we recommend legislation for their implementation.

Two other approaches demonstrate the power of public health approaches that guide our recommendations. First, careful trend analysis finds that the Clean Air Act was associated with reductions in adult and adolescent suicide deaths from the mid-1970s to the 1990s, likely because the Act required the installation of catalytic converters in cars, reducing carbon emissions. By the early 1990s when most cars met new emission standards, there were fewer deaths by suicide via carbon monoxide poisoning (Mott et al., 2002). Second, improvements in barriers and the installation of nettings in places known for suicide deaths by jumping has proved effective (see Pirkis et al., 2013 for a review of nine such pre–post studies, showing an 86% reduction in jumping suicides per year at sites in which a barrier or netting was installed). There is a modest increase in deaths by suicide at nearby sites but not enough to offset the overall benefits (that is, there is a modest "substitution" effect resulting in a net 28% reduction in studied cities; see Pirkis et al., 2013).

Strategies to prevent suicide by creating accepting environments

Discrimination due to race/ethnicity, language, gender identity, and sexual orientation may be associated with increased risk of suicide for minoritized groups

(Alvarez et al., 2022; Bailey et al., 2017; Hatzenbuehler, 2018; Wexler et al., 2009). While policies and practices that support more accepting and inclusive environments (e.g., diversity, equity, inclusion, and belonging efforts) might mitigate these risks, research is lacking on the impact of such policies on the suicidal thoughts and behaviors of racial/ethnic minoritized adolescents. By contrast, extensive research on policies and practices for LGBTQ+ adolescents has been conducted, summarized below.

Implementation of policies and practices to promote protective school climates for LGBTQ+ youth are associated with decreased odds of LGB youth reporting suicidal ideation and attempts (Hatzenbuehler et al., 2014; Hatzenbuehler & Keyes, 2013; Meyer et al., 2019). These include enumerated anti-bullying policies that name protections based on sexual orientation and gender identity; professional development for school staff that address LGBTQ+ student issues; LGBTQ+ designated safe spaces (e.g., Gender and Sexuality Alliances); and LGBTQ+ topics included in the curriculum (Russell et al., 2010). Laws at the state level also matter: quasi-experimental evidence using state-level difference-in-difference models (that control for other state-level differences) demonstrates that when states passed laws to permit same-sex marriage (before federal protections), there was a 7% reduction in the proportion of all high school students reporting suicide attempts within the past year, and a 14% reduction for LGB youth (Raifman et al., 2017). State-level anti-LGBTQ+ legislation from 2015–2019 was associated with a small but statistically significant increase in texts by adolescent LGBTQ+ youth to suicide support lines in the weeks after such legislation was proposed (Parris et al., 2021), although there is no research on the impact of such legislation on suicide rates or the impact of the current wave of anti-LGBTQ+ legislation. In sum, policies at the school, school district, state, and federal level that signal affirmation and acceptance of minoritized LGBTQ+ adolescents mitigate suicide risk for LGBTQ+ and, sometimes even, for all students (Baams & Russell, 2021; Poteat et al., 2020; Raifman et al., 2017; Walls et al., 2013) and thus we recommend them as part of an adolescent suicide prevention strategy.

Strategies to prevent suicide by improving access to suicide care

Ensuring mental health insurance parity and availability of mental health care

Key to treatment access is health insurance coverage for mental health/suicide care. Research finds that state-level variation in the 1990s and early 2000s in the passage of mental health parity laws that require health insurance offer mental health benefits at parity with physical health benefits resulted in reduced adult suicide rates in those states (this was prior to the passage of the Mental Health Parity and Addiction Equity Act [MHPAEA] in 2008; Lang, 2013). Additionally, the passage of MHPAEA resulted in a 2.8 percentage point increase in mental health care utilization and a 1.2 percentage point increase in diagnoses of anxiety for nonpoor adolescents (comparing adolescents in states without such laws prior to MHPAEA with those in states with such laws using difference in difference models; Li & Ma, 2020).

Barriers to mental health care are extensive and include the stigma of help-seeking, the high cost of treatment, the scarcity of treatment relative to need, and the lack of culturally-competent services (Clement et al., 2015; Gulliver et al., 2010). Yet, research on the causal impact of care access on adolescent suicide rates is limited. State-level reductions in community mental health services have been found to be associated with increases in overall suicide rates controlling for other state-level characteristics (Hung et al., 2020), but analyses are not youth-specific. In a cross-sectional analysis of US mortality data from 2015–2016, youth suicide rates were associated with county-level mental health shortages, after adjusting for county-level characteristics, and this trend was stronger in counties with higher proportions of uninsured youth and youth living in households below the poverty line (Hoffmann et al., 2023). The impact of increasing mental health care, making such care more affordable, and/or increasing the number of culturally-competent providers on adolescent suicide outcomes has not been examined in experimental or quasi-experimental designs, and thus is among our research recommendations. Even so, suicide prevention experts and medical professionals support increasing the number, affordability, and cultural competence of mental health care providers in the service of addressing adolescent suicide (AAP/AFSP Blueprint, 2023).

Providing rapid and remote access to help

Crisis lines are designed to reduce current distress or suicidal thinking and provide referrals to mental health services (Gould et al., 2012). Crisis lines are an important component of a comprehensive suicide prevention strategy and are universally accessible, available on a 24/7 basis, anonymous, and free (Mathieu et al., 2021). In the United States, the National Suicide Hotline Designation Act of 2020 established 988 as a 3-digit number for the National Suicide Prevention Lifeline in 2022 (now known as the 988 Suicide & Crisis Lifeline). The Lifeline is accessible via call, text, or online chat 24/7 and comprises a network of over 200 crisis centers across the country. Callers, texters, and chatters are connected to a local

crisis center with knowledge of mental health services in the community or to another resource if a local center is not available. Other crisis lines include: Crisis Text Line (24/7 national support via text); Teen Line (support from trained teenagers during evening via phone, text, or email); The Trevor Project (24/7 call, text, and chat services for LGBTQ+ youth); and Trans Lifeline (24/7 support via phone for trans and questioning individuals of all ages, provided by trans peers). Crisis lines are also available internationally.

Despite a strong rationale for crisis lines, a 2003 review concluded that research was lacking on the efficacy of crisis lines for youth (Gould et al., 2003). Researchers made similar conclusions in recent systematic reviews of suicide prevention lines for adults and youth (Hoffberg et al., 2020) and crisis lines for youth (including but not limited to suicide prevention lines; Mathieu et al., 2021). Existing studies are generally descriptive rather than experimental, the anonymous nature of calls makes it difficult to conduct follow-up, and only a small proportion of crisis line users agree to complete surveys (e.g., 22%–35% [Gould et al., 2006, 2022]). And, studies from the early 2000s were conducted before text and chat services became more widely available. Given the national implementation of crisis lines, we recommend quasi-experimental research to guide best practices and identify gaps in design and delivery.

Studies of awareness of lines are inconsistent, but usage rates relative to need are low. The proportion of adolescents aware of crisis lines can range widely (e.g., from 98% of high school students in New York [Gould et al., 2006] to 30% of adolescents in a clinical setting in Maryland [Crosby Budinger et al., 2015]). Studies consistently show utilization rates only in the 2%–5% range (Crosby Budinger et al., 2015; Freedenthal, 2010; Gould et al., 2006), but there is evidence that media campaigns can increase utilization (Freedenthal, 2010; Jenner et al., 2010). Adolescent and adult crisis line users typically identify as female (Gould et al., 2006; Mathieu et al., 2021; Pisani et al., 2022), and rates appear lower among rural versus urban populations (Mathieu et al., 2021; Thompson et al., 2018). Text and chat, relative to phone, may be especially appealing to adolescents (Haner & Pepler, 2016; Mokkenstorm et al., 2017). One study of Crisis Text Line users documented that 76% of texters were under 25, nearly 80% were female, 8% identified as a gender minority, and 48% identified as a sexual minority (Pisani et al., 2022). These rates of sexual minority use of the Crisis Text Line are high given adolescents calling a LGBTQ+-specific line have reported they were unlikely to call a general line if the LGBTQ+-specific line was not available (Goldbach et al., 2019). Texters were racially and ethnically diverse, with about half identifying as Black, Indigenous, Latino/a/x/e, Asian, or multiracial. However, the proportion of Black, Latino/a/x/e, and Asian texters were lower than national figures, while the proportion of multiracial texters were higher than national figures,

suggesting lines are an important resource for this latter group. About 77% of texters were not receiving help from a therapist or healthcare provider related to their current crisis, and this was magnified among racial/ethnic minority adolescents, suggesting that Crisis Text Line reaches an otherwise underserved population. Key barriers to utilization include shame, stigma, and lack of knowledge about them (Gould et al., 2006; Mathieu et al., 2021).

Research documenting the effectiveness of crisis lines examines change in distress or suicidal ideation from the beginning to the end of the call as reported by callers, counselors, or research staff or caller-reported outcomes a few weeks following the call (Hoffberg et al., 2020; Mathieu et al., 2021). A study of adolescents in Australia found that ratings of imminent risk made by raters listening to call recordings decreased from 48% to 7% from the start to the end of the call (King et al., 2003). Studies of crisis text and chat conversations in predominantly adolescent samples have shown decreases in suicidal ideation and distress over the course of a call, with approximately 45% of suicidal texters/chatters reporting feeling less suicidal, indicating that conversations were helpful for many but not all users (Gould et al., 2021, 2022). A small minority of texters/chatters (5%–7%) experience worsening distress, and this proportion is slightly higher among Black texters (Gould et al., 2022).

Although not specific to youth, studies have documented the importance of counselor training, experience, and employment status for better outcomes of crisis calls, texts, or chats. One randomized controlled trial with 18 call centers tested the impact of Applied Suicide Intervention Skills Training (ASIST), a training that focuses on connecting about suicide, understanding choices, and developing a safety plan. Callers who spoke with counselors trained in ASIST reported feeling significantly less depressed, less suicidal, less overwhelmed, and more hopeful compared to callers who spoke with counselors who were not ASIST-trained (Gould et al., 2013). Descriptive studies have documented that callers who speak with more experienced counselors show greater reductions in suicidal thinking during a call (Mishara et al., 2016), and that calls with paid counselors are more likely to be collaborative and less likely to result in noncollaborative active rescues (i.e., where the counselor calls 911 without consent from the caller; Gould et al., 2016).

Strategies to prevent suicide by identifying and supporting young people at risk

Identifying adolescents at suicidal risk

Key to prevention is identifying those at risk for suicide. Suicide risk screening through health care systems

was identified a decade ago as part of the National Strategy for Suicide Prevention's Comprehensive Approach (Office of the Surgeon General & National Action Alliance for Suicide Prevention, 2012) and in February of 2016, The Joint Commission published Sentinel Event Alert 56 that required accredited hospitals to screen patients for suicide (Horowitz et al., 2020; Patient Safety Advisory Group, 2016). In 2019, a National Patient Safety Goal was issued to screen patients for suicide ideation, but only for those treated for behavioral health conditions (The Joint Commission, 2019). While a majority of adolescents who die by suicide were seen in the previous year by a medical professional (77% based on 10 years of data in hospitals across eight states), only 38% were specifically seen for mental-health specific complaints (Ahmedani et al., 2014). While many health care providers screen for mental health concerns, nonsuicide specific tools (e.g., those for depression) appear to miss some adolescents with suicidal thoughts (Kemper et al., 2021; Lanzillo et al., 2017) and adolescents do not appear to reveal suicidal thoughts and behaviors unless asked about it directly (Patel et al., 2018). Perhaps the most compelling case for screening in nonpsychiatric contexts comes from "psychological autopsy studies," where records are reviewed and interviews are conducted with families, friends, teachers, and health care professionals of adolescents who died by suicide. One study found less than half of 53 adolescents who died by suicide ever had contact with psychiatric care (Marttunen et al., 1992); another found only one-fifth of 120 adolescents were evaluated by a mental health professional in the three months prior to their suicide (Shaffer, 1996).

Screening for suicide risk and asking about suicide does not result in iatrogenic effects (i.e., asking about suicide does not "put the idea in a child's head"). Gould et al. (2005) have demonstrated via an experimental design that asking adolescents about suicidal thinking does *not* make them more suicidal, with findings confirmed in a later meta-analysis across studies of adolescents and adults (DeCou & Schumann, 2018). On the contrary, youth with higher levels of depression and with prior suicide attempts saw a modest *reduction* in distress as a result of being screened for suicide risk (Gould et al., 2005).

Researchers have validated a number of suicide risk screening tools for adolescents (SAMHSA, 2020). The Ask Suicide-Screening Questions toolkit, publicly available at the National Institute of Mental Health, is a four-item screen with questions about past week suicidal ideation and lifetime suicidal behavior and has been shown to identify suicidal adolescents (Horowitz et al., 2012). The Columbia-Suicide Severity Rating Scale (C-SSRS) assesses suicidal ideation and behavior and has been shown to predict short-term suicidal behavior within high-risk youth samples (Conway et al., 2017; Gipson et al., 2015); a screening tool has been developed from the research-based assessment (Posner et al., 2011; available at https://cssrs.columbia.edu/). The Computerized Adaptive Screen for Suicidal Youth (CASSY) uses an algorithm to personalize screening using 24 clinical/psychosocial "risk" questions while keeping administration time brief (King et al., 2021). In pediatrician's offices and emergency departments, studies have demonstrated the feasibility and acceptability of implementing suicide risk screens, irrespective of presenting complaint (Ballard et al., 2012; Horowitz et al., 2022; O'Mara et al., 2012; Roaten et al., 2021).

Leading organizations now recommend suicide risk screening starting at age 12 (see, e.g., AAP/AFSP Blueprint, 2023 and the AAP Bright Futures Periodicity Schedule for Preventive Care, 2022; note that the US Preventive Services Task Force does not). Given the evidence, we too recommend universal screening and call on The Joint Commission and the Centers for Medicare & Medicaid Services (CMS) to require universal screening and health care providers to implement it. We are not aware of any randomized studies of screening alone on adolescent suicidal behaviors. But according to a grade-randomized trial across 14 Pennsylvania schools, screening with a depression tool with a single suicide item resulted in greater identification of and treatment initiation for youth at risk of suicide than the usual practice of targeted referral for "suicide-concerning" behavior (Sekhar et al., 2022). And, suicide risk-specific screening combined with brief interventions of risk assessment, safety planning, and phone follow-up was associated with fewer suicide attempts in a phased treatment study of adults in eight emergency departments (Horowitz et al., 2020; Miller et al., 2017).

Investing in suicide prevention efforts in schools and youth-serving organizations

At the federal level, President Bush signed into law the Garrett Lee Smith Memorial Act (GLSMA) in 2004, which continues today. The law provides federal funding to states, tribes, and colleges for youth and young adult suicide prevention activities across the country on the largest scale to date. For adolescents, it supports the implementation of suicide prevention and early intervention strategies in schools, juvenile justice systems, mental health programs, foster care systems, and other youth-serving organizations (Garrett Lee Smith Memorial Act, 2003). The GLSMA distributes funding for increased development and implementation of community-based suicide prevention programs; improvement in access to substance use and mental health services; expansion of surveillance of suicide-related outcomes; increased awareness of suicide as a

public health problem; and development and implementation of strategies for reducing stigma associated with services for mental health and suicide (Center for Mental Health Services, & Office of the Surgeon General, 2001). The GLSMA also mandates data collection to monitor effectiveness, facilitates efforts at quality assurance and policy development, and provides a basis to modify programs (Goldston et al., 2010). Two quasi-experimental studies have demonstrated that GLSMA reduced attempts and suicide mortality in the counties where programs were implemented (Godoy Garraza et al., 2015; Walrath et al., 2015) and benefits persisted up to two years after (Godoy Garraza et al., 2019). As such, we recommend increased funding and implementation.

More recently, President Biden signed into law the Suicide Training and Awareness Nationally Delivered for Universal Prevention (STANDUP) Act of 2021 (STANDUP Act of 2021, 2021). STANDUP provides federal funding and requires the Department of Health and Human Services to give preference when awarding grants to state, tribal, and local educational agencies that plan to implement evidence-based suicide awareness and prevention training policies and to coordinate with the Department of Education and the Department of the Interior to provide educational agencies with best practices for these policies. A recent study aligned research on school-based prevention programs with STANDUP requirements to guide implementation (Krantz et al., 2023). Given the efficacy of some school-based programs (see below), we recommend increased funding for STANDUP.

At the state level, there is considerable variation in suicide prevention-related laws and recommendations for school districts. These include training recommendations or mandates for school staff; student education regarding suicide; suicide hotline numbers printed on ID cards; suicide prevention liaisons in schools; required mental health training for parents by schools; and other prevention, intervention, and postvention recommendations (AFSP, 2020; The Trevor Project, personal communication, January 17, 2023). Even when states mandate suicide prevention policies, only two-thirds of districts within those states also mandate policies (Piekarz-Porter et al., 2019), and principals and school psychologists report low awareness of their state's mandates (Lieberman & Poland, 2017; Smith-Millman & Flaspohler, 2019). Legislative advocacy and dissemination efforts are needed at the state and district level to ensure suicide prevention practices are implemented.

Training adult gatekeepers

Gatekeeper programs train adults in schools or other community settings to identify the signs of suicide, ask adolescents directly about their suicidal thoughts and behaviors, and refer adolescents to formal care when needed (Mo et al., 2018; Singer et al., 2019). Most school personnel are not mental health providers (Scott et al., 2021) and teachers are not trained to provide mental health treatments. However, teachers and other school staff *are* positioned to identify warning signs and encourage adolescents to seek care because they interact regularly with adolescents, and a majority of struggling adolescents are not yet in mental health care (Hom et al., 2015).

Gatekeeper programs are one of the most common programs funded through the GLSMA. Also, as of October 2023, 21 states have passed The Jason Flatt Act, which requires teacher suicide awareness and prevention training (The Jason Foundation, 2023). One common gatekeeper program, Question, Persuade, Refer (QPR), involves 1–2 hours of online or in-person training on rates of suicide, risk factors, warning signs, and protocols for how to ask a student about suicide, persuade a student to get help, and refer a student for help. Kognito offers a 1-hour online simulation in which adults learn about signs of distress, motivational interviewing techniques to approach adolescents, and how to refer adolescents to mental health support. Applied Suicide Intervention Skills Training (ASIST) is a 2-day training for adults in three phases: connecting with suicide (i.e., asking about suicide); understanding choices (i.e., asking about reasons for dying, ambivalence about dying, reasons for living); and assisting life (i.e., developing a safety plan).

Gatekeeper programs have been shown to build awareness of suicide, knowledge, and self-efficacy to intervene with suicidal adolescents, but they have not consistently led to changes in adults' behaviors or referrals, or adolescents' suicidal thoughts and behaviors (Mo et al., 2018). For example, a randomized controlled trial of QPR in 32 Georgia middle and high schools found moderate to large positive effects on knowledge and efficacy, but no impact on identification of suicidal students or referrals (Wyman et al., 2008). QPR increased teachers' asking about suicide, but only among teachers who were already having conversations with adolescents about suicide prior to the training (Wyman et al., 2008). A quasi-experimental study of ASIST with approximately 150 K-12 school staff found that the program increased knowledge about suicide and skills, as well as comfort and confidence responding to adolescents at risk of suicide (Shannonhouse et al., 2017). However, the study did not examine effects on adults' actual behavior, referrals, or adolescents' suicidal thoughts and attempts. A pre/post study of 781 K-12 teachers who completed the Kognito gatekeeper training found improvements in self-efficacy and likelihood of intervening with at-risk adolescents, but no effect on referrals (Robinson-Link et al., 2020).

Given limited evidence that gatekeeper programs increase referrals and reduce suicidal thoughts and behaviors, these programs may be most effective when combined with programs involving adolescents directly (Mo et al., 2018; Wyman et al., 2008). Indeed, one program that has been shown to reduce adolescents′ suicidal thoughts and behavior, Signs of Suicide (SOS), combines adult gatekeeper training with screening and youth-focused training (see longer discussion below; Aseltine & DeMartino, 2004; Schilling et al., 2016). Further evidence comes from quasi-experimental studies documenting reductions in suicide rates in counties implementing GLSMA programs, which commonly included gatekeeper trainings as one component strategy (Godoy Garraza et al., 2019; Walrath et al., 2015). Research has not examined gatekeeper programs across settings or subgroups, and questions remain about the cultural relevance for some groups (e.g., Indigenous populations; Wexler et al., 2015).

Training peer gatekeepers and changing norms

Student-facing school-based suicide prevention models build from developmental research on peer influence in adolescence (Nelson et al., 2005; Steinberg, 2015) and peers′ role as trusted confidantes and as key sources of norm-setting (Kallgren et al., 2000; Lapinski & Rimal, 2005). Adolescents are often the first to learn of a peer′s suicidal thinking (Klimes-Dougan et al., 2013; Ross, 1985), and thus are "first lines of defense" in connecting adolescents to care and preventing suicide deaths.

Between 2000 and 2020, "skill-based" programs emerged in schools that teach adolescents how to recognize warning signs, talk to a peer about mental health and help-seeking, and tell a responsible adult. SOS (Aseltine & DeMartino, 2004; Aseltine et al., 2007; Schilling et al., 2016) offers awareness training for staff and students using school-based mental health professionals and health teachers trained by program experts, combined with screening for suicide and depression, and trains students to seek adult help for themselves or a friend. SOS (Aseltine et al., 2007; Aseltine & DeMartino, 2004; Schilling et al., 2016) increases knowledge, changes attitudes about suicide, and reduces suicide attempts at 3 months, but has no effect on suicidal ideation or help-seeking for oneself or a friend (and there is no study of longer-term follow-up on attempts). Youth Aware of Mental Health (YAM; Wasserman et al., 2015) trains 14–16-year-old students with role-play and interactive lectures about how to handle conflict; address feelings, stress, and crisis; and manage depression and suicidal thoughts (Wasserman et al., 2010). YAM was shown to reduce suicide attempts and severe suicidal ideation at 12 but

not 3 months follow-up across 10 European countries (Wasserman et al., 2015). The program has demonstrated initial feasibility and acceptability in the United States (Lindow et al., 2020) and shows promise in changing student help-seeking behaviors, mental health literacy, mental health stigma, anxiety, and depressive symptoms in a pre-post study in Montana and Texas (Lindow et al., 2020; Trivedi et al., 2022). Other programs improve knowledge and awareness about suicide, with some also improving adolescents' comfort and ability in intervening with a suicidal peer (Hart et al., 2020; Katz et al., 2013; Singer et al., 2019; Surgenor et al., 2016). But, some programs remain untested (Singer et al., 2019), impacts on helping skills and suicide attempts are rare, and information on impacts on racial/ethnic and LGBTQ+ youth is nonexistent.

Given the role peer networks play in shaping health behaviors, there has been an interest in "social network interventions" that utilize peer networks to change norms (Hunter et al., 2019; Shelton et al., 2019; Valente, 2012; Valente et al., 2015). Norms may facilitate or discourage help-seeking behaviors (Kallgren et al., 2000; Lapinski & Rimal, 2005). Social network interventions focusing on shifting norms have shown promise in improving social-emotional and health outcomes for young adults and adolescents (Amirkhanian et al., 2003; Kelly, 2004; Paluck et al., 2016), and is an area in which we recommend program development.

The most promising programs that leverage social networks to change norms are Sources of Strength (SoS; Wyman et al., 2010) and Directing Change (Ghirardelli & Bye, 2016; Morris-Perez & Abenavoli, 2022), albeit only SoS has substantial evidence of efficacy to date. SoS trains adult advisors and peer leaders to promote coping and connectedness via student-designed messaging activities. SoS has been found to improve (a) peer leaders′ suicide perceptions, expectations that adults would help suicidal peers, and support for suicidal peers, and (b) all students′ help for suicidal peers and their own help-seeking (Wyman et al., 2010). In Directing Change, students create 30- or 60-second films on mental health/suicide prevention. Directing Change is implemented through a statewide film contest for California youth, as well as a school-based "mini-grant" program where classes or clubs create films and host a screening event for the school community. In a matched-comparison study, the statewide film contest increased knowledge and skills and changed attitudes and behaviors related to mental health and suicide (Ghirardelli & Bye, 2016). A cluster randomized controlled trial to evaluate the mini-grant program is ongoing (Morris-Perez & Abenavoli, 2022) and will test impacts on Latino/a/x/e and LGBTQ+ youth for whom information is lacking about youth-focused prevention.

Given the strength of the evidence, we recommend funding and implementation of efficacious youth-focused programs, in tandem with school staff training programs. We also recommend program development and research of such programs on minoritized racial/ethnic and LGBTQ+ youth.

Strategies to prevent suicide by lessening harms and preventing future risk

Reporting and messaging about suicide safely and for prevention

Extensive research has identified iatrogenic effects of media reporting about suicide, with a meta-analysis of such studies showing a modest increase in suicide rates following the reporting of celebrity deaths (Niederkrotenthaler et al., 2020). Effects are strongest among people with identities akin to the person who died by suicide, and it is not clear if effects are youth-specific. There is also some data on increasing suicides following fictional portrayals using interrupted time series designs (e.g., *13 Reasons Why*; Bridge et al., 2019; Niederkrotenthaler et al., 2019). These observations led to guidelines for suicide reporting to avoid the so-called "Werther"[11] effect. The US guidelines, initially released a decade ago (National Action Alliance for Suicide Prevention, 2022) and similarly put forth by the World Health Organization & International Association for Suicide Prevention (2017), make concrete recommendations regarding suicide reporting, including (a) not using the term "committed;" (b) not detailing suicide methods; (c) not sensationalizing events around suicides; and (d) not placing suicide stories prominently. While U.S. data is scarce, these guidelines have led to more responsible reporting of suicides internationally and, in Austria, have resulted in reduced suicides (Niederkrotenthaler & Sonneck, 2007). In Australia, #chatsafe was co-developed with youth (Robinson et al., 2018), offering social media guidelines about how to share suicidal thoughts, communicate with someone struggling, and develop and share memorial websites.

Less attention has been paid to the benefits of media reporting when combined with messages of successful coping (the "Papageno"[12] effect; Niederkrotenthaler et al., 2010). Randomized trials demonstrate that exposure to positive coping messages through films and media can reduce suicidal ideation and increase protective factors (Arendt et al., 2016; Till et al., 2015, 2017). Media stories of hope and recovery pooled across randomized studies have been found to causally reduce suicidal ideation for individuals at risk, but not increase help-seeking intentions (Niederkrotenthaler et al., 2022). Studies of youth are less common, but in a randomized classroom design in schools implementing Sources of Strength, positive-themed communications by peer leaders about their own healthy coping improved classroom-wide help-seeking, rejecting codes of silence, and perceptions the school has adults to help suicidal students (Petrova et al., 2015). These findings are consistent with recommendations to include "positive, action-oriented messages" in media messaging (National Action Alliance for Suicide Prevention, 2022). Guidelines also recommend the inclusion of information about crisis resources.

Intervening after a suicide (postvention)

For every suicide death, approximately 135 people are exposed (Cerel et al., 2019). To address the needs of these "suicide loss survivors," national guidelines for postvention were developed by the Survivors of Suicide Task Force (2015), and put forth by the National Action Alliance in 2015. These were developed out of expert consensus by field leaders and provide guidance for responding to individuals after a suicide death, given the risks associated with losing someone to suicide (Jordan & McIntosh, 2011; Pittman et al., 2014). For adolescents, there has been a particular concern of "clustering" of suicides through "social transmission" (Abrutyn & Mueller, 2014; Gould et al., 1989; Randall et al., 2015), when a greater than expected number of suicides occur in a closed community. As a result, guidelines in schools for "postvention best practices" were created by AFSP and the Suicide Prevention Resource Center (AFSP and SPRC, 2018), offering recommendations for communicating and supporting students who lose a fellow student to suicide, including how to speak with students and handle memorials. While based on extensive practice experience, guidelines are based on very few studies (Williams et al., 2022) and focus on "crisis" intervention rather than longer-term grief support. Research is needed to strengthen these guidelines and extend them to longer-term postvention; program development in this area is also needed.

Data infrastructure

Publicly available, suicide-related surveillance data are collected from two sources: (a) the CDC Web-based Injury Statistics Query and Reporting System (WISQARS) for annual fatality data, often with 1–2-year delays (CDC, 2023a); and (b) the Youth Risk Behavior Surveillance System (YRBSS) for nationally representative information on suicidal thoughts, plans, and attempts self-reported by high-school aged adolescents biannually (CDC, 2023b). See Appendix A for a descriptive analysis of these data.

Suicide-related mortality data is affected by the lack of universal burden of proof standards that result in underreporting. Underreporting of suicide deaths can occur due to the lack of consistency in statewide: (a) burden of proof standards and definitions of suicide; (b) training of death scene investigators, coroners, and medical examiners; and (c) resource and infrastructure constraints in the completion of autopsies and review of available evidence (Stone et al., 2017). Underreporting is especially an issue for minoritized individuals (Rockett, 2010; Rockett et al., 2010) and LGBTQ+ identity is not routinely recorded (see Appendix A). Needed are national standards for burden of proof and training of the workforce to reduce variation across geography and to address bias in the underreporting of suicide deaths among racial/ethnic and LGBTQ+ minoritized groups.

To date, analyses of youth suicide trends have focused on individual-level characteristics (e.g., race/ethnicity) with less attention to the context and policy landscapes in which youth develop. Approaches which bring together real-time publicly-available administrative data at national, state, and district levels to better identify trends in adolescent suicidality, place-based factors that contribute to these trends, and policy levers for altering them have the potential to offer new solutions for adolescent suicide prevention.

Recommendations for policymakers, practitioners, program developers, and researchers

We offer recommendations for: (a) policymakers and practitioners, (b) program developers, and (c) researchers. We note that reducing adolescent suicide at the population level will likely require a layering of the strategies below.

For policymakers and practitioners

Given the strength of the research evidence, we recommend the following for federal, state, and local policymakers and practitioners:

- *We recommend that state-level policymakers restrict access to firearms via regulations and safe storage; public health officials implement firearm safe storage programs and build barriers on buildings/bridges; public health officials and health care providers distribute lockboxes for medications; and the Consumer Product Safety commission enact regulations that restrict the size of bottles for lethal over-the-counter medications.* Research has demonstrated the power of restricting access to the methods by which someone can attempt suicide. Restricting

licensing of firearms and firearm seizure laws have been shown to reduce suicide rates (Kivisto & Phalen, 2018; Loftin et al., 1991; Reisch et al., 2013); safe storage of firearms may be similarly effective (although research is limited). Barriers and netting on buildings and bridges reduce deaths by suicide in places that are known for suicide attempts, despite modest substitution effects (Pirkis et al., 2013). Reducing pill packaging for lethal analgesic medications has been shown to be effective in the U.K. (Hawton et al., 2004) and likely would be similarly effective in the U.S.

- *We recommend that state-level policymakers protect and implement strategies that treat LGBTQ+ youth equally and affirm LGBTQ+ identities (e.g., maintain same-sex marriage laws, protect affirming school environments/safe spaces for LGBTQ+ youth); state policymakers and school district/school leaders fight anti-LGBTQ+ legislation, policy, and practices that limit access to medical care, sports, representation in classroom conversations; and school leaders support LGBTQ+ affirming spaces (e.g., GSAs).* Research has shown that LGBTQ+ accepting policies reduce adolescent suicide rates (Hatzenbuehler et al., 2014; Hatzenbuehler & Keyes, 2013; Meyer et al., 2019; Raifman et al., 2017); these efforts should be protected and implemented across states and the federal government. Bills targeting access to gender-affirming care and participation in sports have been introduced and, in some cases, passed, as have curricular bans limiting conversations and books about sexual orientation and gender identity (GLAAD, 2023), contributing to structural stigma (Hatzenbuehler, 2016, 2018) and, in turn, suicide risk among LGBTQ+ adolescents.

- *We recommend that The Joint Commission update its recommendations to include universal suicide risk screening for adolescents; the Centers for Medicare & Medicaid Services (CMS) at the Department of Health and Human Services require screening for suicide risk in pediatrics and emergency departments as part of routine care; and health care providers implement such screening practices.* The AAP recommends that pediatricians screen for suicidal ideation and planning for adolescents beginning at age 12 (AAP/AFSP Blueprint, n.d.; the AAP Bright Futures Periodicity Schedule for Preventive Care, 2022; Foy et al., 2019). Screening adolescents for suicide risk directly (and not simply for mental illness) identifies youth who would otherwise not be identified (Kemper et al., 2021; Lanzillo et al., 2017). There are a number of brief tools for screening for suicide risk and suicide risk screening in medical settings has been found to be acceptable by parents and youth alike (Ballard et al., 2012; Bradley-Ewing et al., 2022; Horowitz et al., 2022). Adolescents who screen positive can be referred for

evaluation and, if warranted, connected to mental health care (thus, clinical care pathways should be articulated as part of risk screening implementation; AAP/AFSP Blueprint, nd).

- *We recommend that the federal government increase funding for the Garrett Lee Smith Memorial Grants that provide funding to communities for suicide prevention activities in youth-serving organizations and the Suicide Training and Awareness Nationally Delivered for Universal Prevention (STANDUP) Act of 2021 that offers suicide prevention funding to schools to implement effective programs. We also recommend that public health and school district leaders apply for such funding and implement evidence-based practices.* The Garrett Lee Smith grants have been shown to be effective in reducing suicide rates by providing resources for a range of youth suicide prevention activities in communities (Godoy Garraza et al., 2015, 2019; Walrath et al., 2015). Increasing investment in these grants and in STANDUP funding (given efficacious school-based youth-focused programs) is likely to result in reduced suicide rates.

- *We recommend that state and local policymakers fund and monitor school district- and school-level implementation of state-wide suicide prevention laws and that school district/school leaders ensure implementation of such laws.* The majority of states have laws that require districts and/or schools to adopt policies mandating that some or all school staff members receive suicide prevention training (AFSP, 2020; The Trevor Project, personal communication, January 17, 2023). Even so, districts and schools need funding in order to effectively implement these policies. Given that many principals are unaware of suicide prevention policies on the books (Lieberman & Poland, 2017; Smith-Millman & Flaspohler, 2019), policymakers need to fund these laws, communicate about them, and monitor their implementation. School leaders need to ensure their implementation.

- *We recommend that the state and federal Departments of Education fund and encourage implementation of evidence-based school youth-focused programs, in tandem with school staff training programs, and that school district/school leaders implement such programs.* Most commonly, schools train staff in suicide prevention, a strategy shown to be effective at increasing adult knowledge but insufficient for changing adolescent help-seeking (Mo et al., 2018). Training youth in schools is effective, when aimed at recognizing signs and helping friends seek support (Schilling et al., 2016; Wasserman et al., 2015). Effective programs also leverage friend networks (Wyman et al., 2010). State and federal Departments of Education should increase funding and encourage

implementation of these youth-focused suicide prevention programs in order to reduce adolescent suicide rates; school leaders should implement these strategies.

- *We recommend that the National Committee on Vital and Health Statistics (NCVHS) create national standards for suicide death classifications and require workforce training to reduce variation across place and persons that can lead to underreporting for minoritized racial/ethnic and LGBTQ+ groups. We also recommend that public health officials ensure that coroners and medical examiners receive such training.* Suicide-related mortality data is affected by lack of universal burden of proof standards (Stone et al., 2017) and LGBTQ+ identity is not routinely recorded. The standardization of suicide death reporting and workforce training that reduces bias in the reporting of suicide deaths would allow for a greater understanding of adolescent suicide fatalities.

For program developers

Given gaps in programming, we recommend that those who develop programs:

- *Engage peer leaders to spread messages of help-seeking as normative in schools, in youth-serving organizations, and on social media.* By acknowledging the power of peer influence (Nelson et al., 2005; Steinberg, 2015), program developers can extend the reach of suicide prevention programs and messages. Peer leaders can model help-seeking as normative.

- *Develop programs that address unique needs of groups at high risk (e.g., Indigenous, multi-racial, LGBTQ+, and rural adolescents). Also develop programs for racial/ethnic minority youth for whom there is limited programming.* There is very limited research to guide practice for groups at high risk (e.g., Indigenous, multi-racial, LGBTQ+, and rural adolescents) and for racial/ethnic minority adolescents (for whom rates are rising and there is a relative dearth of programming; Miranda & Jeglic, 2022). Activities in which students can find solidarity in sharing experiences of hardship and oppression may prove fruitful (Wexler et al., 2009), but are not yet well tested.

- *Develop programs that support adolescent needs for identity, meaning-making, belonging/connectedness, and hope for the future.* Existing youth-focused strategies focus on recognizing suicidal signs and connecting youth to care, without attention to adolescent needs for identity, hope, meaning-making, and "finding a life worth living." These are key tasks of adolescence (Erikson, 1968). After school activities and affinity groups can nurture a sense of identity and

belonging that can be protective in mitigating stigma and increasing help-seeking (Areba et al., 2021; Day et al., 2019; Whitaker et al., 2016).

- *Involve youth directly in the design of programs, amplifying youth voices and giving youth opportunities to take (positive) risks.* Youth-driven programs draw naturally from adolescent experiences navigating identity, authority, or resistance (Ginwright & Cammarota, 2006). Exemplified in a few promising programs (Ghirardelli & Bye, 2016; Robinson, Hill et al., 2018; Wyman et al., 2010), such programs offer youth autonomy in the design and content of prevention activities. More such programming is needed.

- *Develop postvention strategies that support the long-term resilience of adolescents who have experienced the loss of a peer or family member to suicide.* The AFSP and the Suicide Prevention Resource Center have developed postvention best practices to support students who have lost a fellow student to suicide (AFSP and SPRC, 2018). Program developers can build on these guidelines to create programs that also provide longer-term grief support.

For researchers

Given gaps in research evidence, we recommend greater federal funding for research in adolescent suicide, and that researchers:

- *Conduct experimental and quasi-experimental research on the impact of economic policies to reduce poverty on adolescent suicide death and attempt rates.* Research has shown that strengthening financial security through strategies like the Earned Income Tax Credit and the minimum wage reduce overall (adult) suicide rates (Dow et al., 2020; Flavin & Radcligg, 2009), but these have not been tested for adolescents. Evidence for adolescence is descriptive and mixed (Benny et al., 2023; Braudt et al., 2019; Farrell et al., 2019)

- *Conduct research on inclusive policies and practices (i.e., diversity, equity, inclusion, and belonging initiatives) for minoritized racial/ethnic groups (Black, Latino/a/x/e, Indigenous, and Asian/Pacific Islander adolescents).* While research has shown that LGBTQ+ accepting policies reduce suicide rates among young people (Hatzenbuehler et al., 2014; Hatzenbuehler & Keyes, 2013; Meyer et al., 2019; Raifman et al., 2017), we do not know the same about inclusive policies (e.g., diversity, equity, inclusion and belonging initiatives) for racial/ethnic minority adolescents (Lindsey, personal communication, August 3, 2023).

- *Conduct experimental and quasi-experimental studies on the impact of increasing mental health care on adolescent suicide rates.* Barriers to mental health care (Clement et al., 2015; Gulliver et al., 2010) are extensive, and there is widespread support for increasing access to care and culturally-competent care, specifically (AAP/AFSP Blueprint, n.d.). Yet, research on the causal impact of care access on adolescent suicide rates is limited; experimental and quasi-experimental studies can provide information about which aspects of care access make the greatest difference for adolescent suicide rates.

- *Conduct quasi-experimental studies on the roll-out of crisis services across states. Study differences in implementation across states and localities to guide recommendations for best practices and identify gaps in program design and delivery.* Phone and text crisis services have been shown to be associated with reductions in distress among callers who agree to be surveyed (Gould et al., 2021, 2022; King et al., 2003), but there is little by way of causal evidence on the impact of crisis services. Variation in the timing, extent, and features of crisis services across states could offer information about key aspects of crisis services. State-level variation in implementation approach, quality, and reach could guide implementation.

- *Test the impact of effective peer gatekeeper programs on minoritized racial/ethnic and LGBTQ+ adolescents and in a wider set of school and neighborhood contexts.* There are only a few programs with evidence of efficacy (Schilling et al., 2016; Wasserman et al., 2015; Wyman et al., 2010) and these programs have not examined how impacts differ across racial/ethnic groups or for LGBTQ+ vs. non-LGBTQ+ adolescents. It is critical to understand whether these programs are effective for these minoritized groups and how these programs should be adapted to best serve them.

- *Study promising postvention efforts to refine existing guidelines.* Postvention guidelines exist (AFSP & SPRC, 2018), but these are grounded in practice experience rather than empirical evidence. Quantitative and qualitative research is needed to test the short- and long-term impacts of postvention programs on adolescents.

- *Build data systems for real-time analysis of suicide fatalities and thoughts and behaviors, and that permit examination of person, place, and policy characteristics in tandem.* A data system would permit identification of the places where progress has been made. State suicide prevention centers could find communities that "looked like theirs" in terms of racial/ethnic demographics and geography, to try new ideas locally. Administrative data across national, state, and school-district levels could allow identification of trends in suicidal behaviors, place-based factors like income inequality or school characteristics that contribute to these trends, and policy levers for altering them, offering new solutions for adolescent suicide prevention.

BOX 2 Resources for further information

AAP/AFSP Blueprint (2023). *Suicide: Blueprint for Youth Suicide Prevention*. https://www.aap.org/en/patient-care/blueprint-for-youth-suicide-prevention/

Ackerman, J. P., & Horowitz, L. M. (2022). *Youth Suicide Prevention and Intervention*. Cham, Switzerland: Springer Nature. https://doi.org/10.1007/978-3-031-06127-1

American Foundation for Suicide Prevention (AFSP): A national organization that supports those affected by suicide, educates the public about suicide, and funds research on suicide. www.AFSP.org

American Foundation for Suicide Prevention, & Suicide Prevention Resource Center. (2018). After a suicide: A toolkit for schools (2nd ed.). Waltham, MA: Education Development Center.

Centers for Disease Control and Prevention (CDC): A national public health organization, supports states, tribes, territories, and other organizations in using data and science to implement effective suicide prevention strategies. www.cdc.gov/suicide

Erbacher, T. A., Singer, J. B., & Poland, S. (2014). *Suicide in schools: A practitioner's guide to multi-level prevention, assessment, intervention, and postvention*. New York: Routledge.

Miranda, R., & Jeglic, E. L. (2022). *Handbook of Youth Suicide Prevention*. Cham, Switzerland: Springer Nature. https://doi.org/10.1007/978-3-030-82465-5

National Action Alliance: National Action Alliance for Suicide Prevention offers guidelines for reporting on suicide. https://theactionalliance.org/resource/recommendations-reporting-suicide

National Institute of Mental Health (NIMH): Supports research on adolescent suicide, suicide prevention, and intervention. www.nimh.nih.gov/health/topics/suicide-prevention

Suicide Prevention Resource Center (SPRC): The federally supported resource center devoted to advancing the implementation of the National Strategy for Suicide Prevention. States Suicide Prevention Centers submit their suicide prevention plans to SPRC and program developers submit programs for "evidence-based" practice. www.SPRC.org

Survivors of Suicide Loss Task Force. (2015). Responding to grief, trauma, and distress after a suicide: U.S. National Guidelines. National Action Alliance for Suicide Prevention. https://www.sprc.org/resources-programs/responding

The Trevor Project A nonprofit whose mission is to "end suicide among lesbian, gay, bisexual, transgender, queer, and questioning young people." They provide crisis resources, information, and conduct research. www.thetrevorproject.org

Zero Suicide: An approach to improve suicide care within health and behavioral health systems through a system-wide, organizational commitment to safer suicide care. https://zerosuicide.edc.org/

CONCLUSION

The high rates of suicidal thoughts and attempts among adolescents are undeniable markers of adolescents′ psychological distress. With the information in this *Social Policy Report*, we present policymakers, practitioners, program developers, and researchers with information about what is known about adolescent suicide prevention, where gaps exist, and strategies for forging a path forward in the service of reducing rates of adolescent suicide (See Box 2 for further resources on this topic). In short, we offer a strategic vision for adolescent suicide prevention.

ENDNOTES

[1] The Joint Commission is a not-for-profit organization that accredits and certifies health care organizations and sets standards for health care. See www.jointcommission.org.

[2] To date, youth-focused programs with the strongest evidence of efficacy are: Signs of Suicide, Sources of Strength, and Youth

Aware of Mental Health. Research on other programs (e.g., Directing Change) is ongoing. See section on "Training Peer Gatekeepers and Changing Norms."

[3] We focus on suicide, rather than a larger set of mental health conditions and behaviors, recognizing that many of those who die by suicide have co-occurring mental health conditions (Arsenault-Lapierre et al., 2004).

[4] We provide detail on study designs in our review. Given the difficulty of randomized designs for population-based strategies, we base policy and practice recommendations also on comparative difference-in-difference/interrupted time series designs that compare changes in outcomes over time between a group subject to a policy/practice change and those that are not (Hallberg et al., 2018; Wing et al., 2018). These designs control for differences across place, but do not account for policy/practice changes that occur simultaneously with the studied policy/ practice change.

[5] Sometimes referred to as primary prevention or Tier 1, to support the full population of adolescents, rather than *selected or indicated prevention approaches* (secondary or Tier 2 and tertiary or Tier 3) to support adolescents at risk of suicide, or with suicidal thoughts or behavior, respectively (Miller et al., 2009; Singer et al., 2019). As a result, we do not address family-focused approaches here that are typically selected or indicated approaches.

[6] This attention has led to a number of mental health treatment strategies with some evidence of efficacy for youth (e.g., DBT-A: McCauley et al., 2018; CBT-SP: Stanley et al., 2009; SAFETY: Asarnow et al., 2017; YST-II: King et al., 2009; for a review see Busby et al., 2020; Itzhaky et al., 2022; SAMHSA, 2020; Witt et al., 2021).

[7] Focusing on universal prevention is also in line with the "prevention paradox", that recognizes that a large number of people at low risk can later result in more cases of a "disease" than a small number of people at high risk (Greenberg & Abenavoli, 2017; Rose, 1992).

[8] For other reviews that aggregate effects and/or focus on specific contexts (schools), see Brann et al., 2021; Krantz et al., 2023; Robinson et al., 2018; Singer et al., 2019.

[9] In our taxonomy, we distinguish between strategies that "create accepting environments" from those that "create protective environments" given separate literatures on each. Also, all school-based suicide prevention programs are discussed in a single category of "identify and support young people at risk," to facilitate comparisons between them (although we do discuss the ways in which these programs also "promote healthy connections" and "teach coping and problem-solving skills," separate categories in CDC, 2022b). Finally, we supplement the CDC taxonomy with a category on data infrastructure.

[10] Consistent with notions of system-wide risk and protection (a "swiss cheese model") as developed by Reason (1990, 2000) to study defenses, barriers, and safeguards in "error management" of organizations (e.g., nuclear aircraft carriers and power plants, air traffic control centers).

[11] The "Werther" effect is named for the finding that a number of young men of similar age to the protagonist in Goethe's novel *The Sorrow of Young Goethe* took their life following the publication of the book in 1774.

[12] The "Papageno" effect is named after Mozart's *Magic Flute*.

[13] The YRBSS was established by the CDC to monitor health behaviors among adolescents nationally that contribute to the leading causes of morbidity and mortality (Underwood et al., 2020). The YRBSS monitors adolescent suicidality using biennial surveys in public and private high schools across the United States and has results that are representative of students in grades 9–12 (Underwood et al., 2020).

[14] Notably, the YRBSS does not include adolescents who do not attend school regularly or who drop out (Underwood et al., 2020), a group that historically faces a range of negative health and social inequities (Lee et al., 2016), including suicidality (Castellví et al., 2020).

[15] In 2021, homicides increased more so than suicides, making suicide the third leading cause of death that year.

REFERENCES

AAP-AACAP-CHA (2021). *Declaration of a national emergency in child and adolescent mental health*. https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/

AAP/AFSP Blueprint. (2023). *Suicide: Blueprint for youth suicide prevention*. https://www.aap.org/en/patient-care/blueprint-for-youth-suicide-prevention/

Abrutyn, S., & Mueller, A. S. (2014). Are suicidal behaviors contagious in adolescence? Using longitudinal data to examine suicide suggestion. *American Sociological Review*, 79(2), 211–227. https://doi.org/10.1177/0003122413519445

Ahmedani, B. K., Simon, G. E., Stewart, C., Beck, A., Waitzfelder, B. E., Rossom, R., Lynch, F., Owen-Smith, A., Hunkeler, E. M., Whiteside, U., Operskalski, B. H., Coffey, M. J., & Solberg, L. I. (2014). Health care contacts in the year before suicide death. *Journal of General Internal Medicine*, 29, 870–877. https://doi.org/10.1007/s11606-014-2767-3

Alvarez, K., Polanco-Roman, L., Samuel Breslow, A., & Molock, S. (2022). Structural racism and suicide prevention for ethnoracially minoritized youth: A conceptual framework and illustration across systems. *American Journal of Psychiatry*, 179(6), Article 6. https://doi.org/10.1176/appi.ajp.21101001

American Foundation for Suicide Prevention. (2020). *Policy priority: Suicide prevention in schools (K-12)*. https://www.datocms-assets.com/12810/1650599253-afsp-k-12-schools-issue-brief.pdf

American Foundation for Suicide Prevention, & Suicide Prevention Resource Center. (2018). *After a suicide: A toolkit for schools* (2nd ed). Education Development Center. https://sprc.org/wp-content/uploads/2022/12/AfteraSuicideToolkitforSchools-3.pdf

Amirkhanian, Y. A., Kelly, J. A., Kabakchieva, E., McAuliffe, T. L., & Vassileva, S. (2003). Evaluation of a social network HIV prevention intervention program for young men who have sex with men in Russia and Bulgaria. *AIDS Education and Prevention*, 15(3), 205–220. https://doi.org/10.1521/aeap.15.4.205.23832

Areba, E. M., Taliaferro, L. A., Forster, M., McMorris, B. J., Mathiason, M. A., & Eisenberg, M. E. (2021). Adverse childhood experiences and suicidality: School connectedness as a protective factor for ethnic minority adolescents. *Children and Youth Services Review*, 120, Article 105637. https://doi.org/10.1016/j.childyouth.2020.105637

Arendt, F., Till, B., & Niederkrotenthaler, T. (2016). Effects of suicide awareness material on implicit suicide cognition: A laboratory experiment. *Health Communication*, 31(6), 718–726. https://doi.org/10.1080/10410236.2014.993495

Arsenault-Lapierre, G., Kim, C., & Turecki, G. (2004). Psychiatric diagnoses in 3275 suicides: A meta-analysis. *BMC Psychiatry*, 4(1), 37. https://doi.org/10.1186/1471-244X-4-37

Asarnow, J. R., Hughes, J. L., Babeva, K. N., & Sugar, C. A. (2017). Cognitive-behavioral family treatment for suicide attempt prevention: A randomized controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry*, 56(6), 506–514. https://doi.org/10.1016/j.jaac.2017.03.015

Aseltine, R. H., & DeMartino, R. (2004). An outcome evaluation of the SOS suicide prevention program. *American Journal of Public Health*, 94(3), 446–451. https://doi.org/10.2105/AJPH.94.3.446

Aseltine, R. H., James, A., Schilling, E. A., & Glanovsky, J. (2007). Evaluating the SOS suicide prevention program: A replication and extension. *BMC Public Health*, 7(1), Article 161. https://doi.org/10.1186/1471-2458-7-161

Baams, L., & Russell, S. T. (2021). Gay-straight alliances, school functioning, and mental health: Associations for students of color and LGBTQ students. *Youth and Society*, 53(2), 211–229. https://doi.org/10.1177/0044118X20951045

Bailey, Z. D., Krieger, N., Agénor, M., Graves, J., Linos, N., & Bassett, M. T. (2017). Structural racism and health inequities in the USA: Evidence and interventions. *The Lancet*, 389(10077), 1453–1463. https://doi.org/10.1016/S0140-6736(17)30569-X

Ballard, E. D., Bosk, A., Snyder, D., Pao, M., Bridge, J. A., Wharff, E. A., Teach, S. J., & Horowitz, L. (2012). Patients' opinions about suicide screening in a pediatric emergency department. *Pediatric Emergency Care*, 28(1), 34–38. https://doi.org/10.1097/PEC.0b013e31823f2315

Benny, C., Smith, B. T., Hyshka, E., Senthilselvan, A., Veugelers, P. J., & Pabayo, R. (2023). Investigating the association between income inequality in youth and deaths of despair in Canada: A population-based cohort study from 2006 to 2019. *Journal of Epidemiology and Community Health*, 77(1), 26–33. https://doi.org/10.1136/jech-2022-219630

Bradley-Ewing, A., Sullivant, S. A., Williams, D. D., Lanzillo, E., Aguinaldo, L., Wharff, E., Horowitz, L. M., & Goggin, K. (2022). Parent and adolescent thoughts about suicide risk screening in pediatric outpatient settings. *Archives of Suicide Research*, 26(3), 1173–1185. https://doi.org/10.1080/13811118.2020.1864536

Brann, K. L., Baker, D., Smith-Millman, M. K., Watt, S. J., & DiOrio, C. (2021). A meta-analysis of suicide prevention programs for school-aged youth. *Children and Youth Services Review*, 121, Article 105826. https://doi.org/10.1016/j.childyouth.2020.105826

Braudt, D. B., Lawrence, E. M., Tilstra, A. M., Rogers, R. G., & Hummer, R. A. (2019). Family socioeconomic status and early life mortality risk in the United States. *Maternal and Child Health Journal*, 23(10), 1382–1391. https://doi.org/10.1007/s10995-019-02799-0

Bridge, J. A., Greenhouse, J. B., Ruch, D., Stevens, J., Ackerman, J., Sheftall, A. H., Horowitz, L. M., Kelleher, K. J., & Campo, J. V. (2019). Association between the release of Netflix's 13 Reasons Why and suicide rates in the United States: An interrupted time series analysis. *Journal of the American Academy of Child and Adolescent Psychiatry*, 59(2), 236–243. https://doi.org/10.1016/j.jaac.2019.04.020

Busby, D. R., Hatkevich, C., McGuire, T. C., & King, C. A. (2020). Evidence-based interventions for youth suicide risk. *Current Psychiatry Reports*, 22, Article 2. https://doi.org/10.1007/s11920-020-1129-6

Cascio, C. N., Carp, J., O'Donnell, M. B., Tinney, F. J., Bingham, C. R., Shope, J. T., Ouimet, M. C., Pradhan, A. K., Simons-Morton, B. G., & Falk, E. B. (2015). Buffering social influence: Neural correlates of response inhibition predict driving safety in the presence of a peer. *Journal of Cognitive Neuroscience*, 27(1), 83–95. https://doi.org/10.1162/jocna00693

Castellví, P., Miranda-Mendizábal, A., Alayo, I., Parés-Badell, O., Almenara, J., Alonso, I., Blasco, M. J., Cebrià, A., Gabilondo, A., Gili, M., Lagares, C., Piqueras, J. A., Roca, M., Rodríguez-Marín, J., Rodríguez-Jimenez, T., Soto-Sanz, V., & Alonso, J. (2020). Assessing the relationship between school failure and suicidal behavior in adolescents and young adults: A systematic review and meta-analysis of longitudinal studies. *School Mental Health*, 12, 429–441. https://doi.org/10.1007/s12310-020-09363-0

Centers for Disease Control and Prevention. (2022). *Suicide prevention resource for action: A compilation of the best available evidence*. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Centers for Disease Control and Prevention. (2023a). *WISQARS fatal and nonfatal injury reports*. WISQARS. https://wisqars.cdc.gov/reports/

Centers for Disease Control and Prevention. (2023b). *Youth risk behavior surveillance system (YRBSS)*. https://www.cdc.gov/healthyyouth/data/yrbs/index.htm

Center for Mental Health Services, & Office of the Surgeon General. (2001). *National strategy for suicide prevention: Goals and objectives for action*. US Public Health Service. http://www.ncbi.nlm.nih.gov/books/NBK44281/

Cerel, J., Brown, M. M., Maple, M., Singleton, M., van de Venne, J., Moore, M., & Flaherty, C. (2019). How many people are exposed to suicide? Not six. *Suicide and Life-Threatening Behavior*, 49(2), 529–534. https://doi.org/10.1111/sltb.12450

Chen, P. J., Mackes, N., Sacchi, C., Lawrence, A. J., Ma, X., Pollard, R., Matter, M., Morgan, C., Harding, S., Schumann, G., Pariante, C., Mehta, M. A., Montana, G., Nosarti, C., & Dazzan, P. (2022). Parental education and youth suicidal behaviours: A systematic review and meta-analysis. *Epidemiology and Psychiatric Sciences*, 31, Article e19. https://doi.org/10.1017/S204579602200004X

Clement, S., Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., Morgan, C., Rüsch, N., Brown, J. S. L., & Thornicroft, G. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychological Medicine*, 45(1), 11–27. https://doi.org/10.1017/S0033291714000129

Conner, A., Azrael, D., & Miller, M. (2019). Suicide case-fatality rates in the United States, 2007 to 2014: A nationwide population-based study. *Annals of Internal Medicine*, 171(12), Article 12. https://doi.org/10.7326/M19-1324

Conway, P. M., Erlangsen, A., Teasdale, T. W., Jakobsen, I. S., & Larsen, K. J. (2017). Predictive validity of the Columbia-suicide severity rating scale for short-term suicidal behavior: A Danish study of adolescents at a high risk of suicide. *Archives of Suicide Research*, 21(3), 455–469. https://doi.org/10.1080/13811118.2016.1222318

Crosby Budinger, M., Cwik, M. F., & Riddle, M. A. (2015). Awareness, attitudes, and use of crisis hotlines among youth at-risk for suicide. *Suicide and Life-Threatening Behavior*, 45(2), 192–198. https://doi.org/10.1111/sltb.12112

Day, J. K., Ioverno, S., & Russell, S. T. (2019). Safe and supportive schools for LGBT youth: Addressing educational inequities through inclusive policies and practices. *Journal of School Psychology*, 74, 29–43. https://doi.org/10.1016/j.jsp.2019.05.007

DeCou, C. R., & Schumann, M. E. (2018). On the iatrogenic risk of assessing suicidality: A meta-analysis. *Suicide and Life-Threatening Behavior*, 48(5), 531–543. https://doi.org/10.1111/sltb.12368

Dimock, M. (2019). *Defining generations: Where Millennials end and Generation Z begins*. Pew Research Center. https://www.pewresearch.org/short-reads/2019/01/17/where-millennials-end-and-generation-z-begins/

Dow, W. H., Godøy, A., Lowenstein, C., & Reich, M. (2020). Can labor market policies reduce deaths of despair? *Journal of*

Health Economics, *74*, Article 102372. https://doi.org/10.1016/j.jhealeco.2020.102372

Duncan, G. J., & Brooks-Gunn, J. (1997). The effects of poverty on children. *The Future of Children*, *7*(2), 55–71. https://doi.org/10.2307/1602387

Duncan, G. J., Morris, P. A., & Rodrigues, C. (2011). Does money really matter? Estimating impacts of family income on young children's achievement with data from random-assignment experiments. *Developmental Psychology*, *47*(5), 1263–1279. https://doi.org/10.1037/a0023875

Duncan, G. J., Yeung, J., Brooks-Gunn, J., & Smith, J. R. (1998). How much does childhood poverty affect the life chances of children? *American Sociological Review*, *63*(3), 406–423. https://doi.org/10.2307/2657556

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions: Social and emotional learning. *Child Development*, *82*(1), Article 1. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Erikson, E. H. (1968). *Identity: Youth and crisis*. Norton & Co.

Ernst, M. (2014). The triadic model perspective for the study of adolescent motivated behavior. *Brain and Cognition*, *89*, 104–111. https://doi.org/10.1016/j.bandc.2014.01.00

Farrell, C. T., Moledina, Z., & Katta, M. (2019). Suicidal thoughts in low-income adolescents: A longitudinal analysis. *International Journal of Public Health*, *64*, 285–292. https://doi.org/10.1007/s00038-019-01201-8

Flavin, P., & Radcliff, B. (2009). Public policies and suicide rates in the American states. *Social Indicators Research*, *90*(2), 195–209. https://doi.org/10.1007/s11205-008-9252-5

Fontanella, C. A., Hiance-Steelesmith, D. L., Phillips, G. S., Bridge, J. A., Lester, N., Sweeney, H. A., & Campo, J. V. (2015). Widening rural-urban disparities in youth suicides, United States, 1996-2010. *JAMA Pediatrics*, *169*(5), 466–473. https://doi.org/10.1001/jamapediatrics.2014.3561

Foy, J. M., Green, C. M., Earls, M. F., Committee on Psychosocial Aspects of Child and Family Health, Mental Health Leadership Work Group, Lavin, A., Askew, G. L., Baum, R., Berger-Jenkins, E., Gambon, T. B., Nasir, A. A., Wissow, L. S., & Joffe, A. (2019). Mental health competencies for pediatric practice. *Pediatrics*, *144*(5), Article e20192757. https://doi.org/10.1542/peds.2019-2757

Freedenthal, S. (2010). Adolescent help-seeking and the yellow ribbon suicide prevention program: An evaluation. *Suicide and Life-Threatening Behavior*, *40*(6), 628–639. https://doi.org/10.1521/suli.2010.40.6.628

Garrett Lee Smith Memorial Act, no. S.2634, 108th Congress. (2003). https://www.alverno.edu/media/alvernocollege/library/pdfs/apa7bill.pdf

Ghirardelli, A., & Bye, L. (2016). *California mental health services authority Directing Change film contest and program evaluation*. NORC at the University of Chicago. https://doi.org/10.3928/19382359-20190610-02

Ginwright, S., & Cammarota, J. (2006). Introduction, *Beyond resistance! Youth activism and community change: New democratic possibilities for practice and policy for America's youth*. Routledge.

Gipson, P. Y., Agarwala, P., Opperman, K. J., Horwitz, A., & King, C. A. (2015). Columbia-suicide severity rating scale: Predictive validity with adolescent psychiatric emergency patients. *Pediatric Emergency Care*, *31*(2), 88–94. https://doi.org/10.1097/PEC.0000000000000225

Gislason, M. K., Kennedy, A. M., & Witham, S. M. (2021). The interplay between social and ecological determinants of mental health for children and youth in climate crisis. *International Journal of Environmental Research and Public Health*, *18*(9), Article 4573. https://doi.org/10.3390/ijerph18094573

GLAAD. (2023). *State Legislation about LGBTQ People*. GLAAD Media Guide. https://www.glaad.org/state-legislation?gclid=Cj0KCQjw_r6hBhDdARIsAMIDhV8Kp3cqCb_PgzfvfpuXlVjNLtmBXQ2Gqskl-afF80G7DI8fCx1F5h0aAnCBEALw_wcB

Godoy Garraza, L., Kuiper, N., Goldston, D., McKeon, R., & Walrath, C. (2019). Long-term impact of the Garrett Lee Smith youth suicide prevention program on youth suicide mortality, 2006–2015. *Journal of Child Psychology and Psychiatry*, *60*(10), 1142–1147. https://doi.org/10.1111/jcpp.13058

Godoy Garraza, L., Walrath, C., Goldston, D. B., Reid, H., & McKeon, R. (2015). Effect of the Garrett Lee Smith Memorial suicide prevention program on suicide attempts among youths. *JAMA Psychiatry*, *72*(11), 1143–1149. https://doi.org/10.1001/jamapsychiatry.2015.1933

Goldbach, J. T., Rhoades, H., Green, D., Fulginiti, A., & Marshal, M. P. (2019). Is there a need for LGBT-specific suicide crisis services? *Crisis*, *40*(3), 203–208. https://doi.org/10.1027/0227-5910/a000542

Goldston, D. B., Walrath, C. M., McKeon, R., Puddy, R. W., Lubell, K. M., Potter, L. B., & Rodi, M. S. (2010). The Garrett Lee Smith memorial suicide prevention program. *Suicide and Life-Threatening Behavior*, *40*(3), 245–256. https://doi.org/10.1521/suli.2010.40.3.245

Gould, M. S., Chowdhury, S., Lake, A. M., Galfalvy, H., Kleinman, M., Kuchuk, M., & McKeon, R. (2021). National Suicide Prevention Lifeline crisis chat interventions: Evaluation of chatters' perceptions of effectiveness. *Suicide and Life-Threatening Behavior*, *51*(6), 1126–1137. https://doi.org/10.1111/sltb.12795

Gould, M. S., Cross, W., Pisani, A. R., Munfakh, J. L., & Kleinman, M. (2013). Impact of applied suicide intervention skills training on the national suicide prevention lifeline. *Suicide and Life-Threatening Behavior*, *43*(6), 676–691. https://doi.org/10.1111/sltb.12049

Gould, M. S., Greenberg, T., Munfakh, J. L. H., Kleinman, M., & Lubell, K. (2006). Teenagers' attitudes about seeking help from telephone crisis services (hotlines). *Suicide and Life-Threatening Behavior*, *36*(6), 601–613. https://doi.org/10.1521/suli.2006.36.6.601

Gould, M. S., Greenberg, T., Velting, D. M., & Shaffer, D. (2003). Youth suicide risk and preventive interventions: A review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry*, *42*(4), 386–405. https://doi.org/10.1097/01.CHI.0000046821.95464.CF

Gould, M. S., Lake, A. M., Munfakh, J. L., Galfalvy, H., Kleinman, M., Williams, C., Glass, A., & McKeon, R. (2016). Helping callers to the National suicide prevention lifeline who are at imminent risk of suicide: Evaluation of caller risk profiles and interventions implemented. *Suicide and Life-Threatening Behavior*, *46*(2), 172–190. https://doi.org/10.1111/sltb.12182

Gould, M. S., Marrocco, F. A., Kleinman, M., Thomas, J. G., Mostkoff, K., Cote, J., & Davies, M. (2005). Evaluating iatrogenic risk of youth suicide screening programs a randomized controlled trial. *JAMA*, *293*(13), 1635–1643. https://doi.org/10.1001/jama.293.13.1635

Gould, M. S., Munfakh, J. L. H., Kleinman, M., & Lake, A. M. (2012). National suicide prevention lifeline: Enhancing mental health care for suicidal individuals and other people in crisis. *Suicide and Life-Threatening Behavior*, *42*(1), 22–35. https://doi.org/10.1111/j.1943-278X.2011.00068.x

Gould, M. S., Pisani, A., Gallo, C., Ertefaie, A., Harrington, D., Kelberman, C., & Green, S. (2022). Crisis text-line interventions: Evaluation of texters' perceptions of effectiveness. *Suicide and Life-Threatening Behavior*, *52*(3), 583–595. https://doi.org/10.1111/sltb.12873

Gould, M. S., Wallenstein, S., & Davidson, L. (1989). Suicide clusters: A critical review. *Suicide and Life-Threatening Behavior*, *19*(1), 17–29. https://doi.org/10.1111/j.1943-278X.1989.tb00363.x

Greenberg, M. T., & Abenavoli, R. (2017). Universal interventions: Fully exploring their impacts and potential to produce population-level impacts. *Journal of Research on Educational Effectiveness*, 10(1), 40–67. https://doi.org/10.1080/19345747.2016.1246632

Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: A systematic review. *BMC Psychiatry*, 10(1), Article 113. https://doi.org/10.1186/1471-244X-10-113

Gunnell, D., Knipe, D., Chang, S.-S., Pearson, M., Konradsen, F., Lee, W. J., & Eddleston, M. (2017). Prevention of suicide with regulations aimed at restricting access to highly hazardous pesticides: A systematic review of the international evidence. *The Lancet Global Health*, 5(10), 1026–1037. https://doi.org/10.1016/S2214-109X(17)30299-1

Hallberg, K., Williams, R., Swanlund, A., & Eno, J. (2018). Short comparative interrupted time series using aggregate school-level data in education research. *Educational Researcher*, 47(5), 295–306. https://doi.org/10.3102/0013189X18769302

Haner, D., & Pepler, D. (2016). "Live Chat" clients at kids help phone: Individual characteristics and problem topics. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 25(3), 138–144.

Hart, L. M., Cropper, P., Morgan, A. J., Kelly, C. M., & Jorm, A. F. (2020). Teen mental health first aid as a school-based intervention for improving peer support of adolescents at risk of suicide: Outcomes from a cluster randomised crossover trial. *Australian & New Zealand Journal of Psychiatry*, 54(4), 382–392. https://doi.org/10.1177/0004867419885450

Hatzenbuehler, M. L. (2016). Structural stigma: Research evidence and implications for psychological science. *The American Psychologist*, 71(8), 742–751. https://doi.org/10.1037/amp0000068

Hatzenbuehler, M. L. (2018). Structural stigma and health. In B. Major, J. F. Dovidio, & B. G. Link (Eds.), *The Oxford handbook of stigma, discrimination and health* (pp. 105–121). Oxford University Press.

Hatzenbuehler, M. L., Birkett, M., Van Wagenen, A., & Meyer, I. H. (2014). Protective school climates and reduced risk for suicide ideation in sexual minority youths. *American Journal of Public Health*, 104(2), Article 2. https://doi.org/10.2105/AJPH.2013.301508

Hatzenbuehler, M. L., & Keyes, K. M. (2013). Inclusive anti-bullying policies and reduced risk of suicide attempts in lesbian and gay youth. *Journal of Adolescent Health*, 53(1), 21–26. https://doi.org/10.1016/j.jadohealth.2012.08.010

Hawton, K. (2007). Restricting access to methods of suicide: Rationale and evaluation of this approach to suicide prevention. *The Journal of Crisis Intervention and Suicide Prevention*, 28(S1), 4–9. https://doi.org/10.1027/0227-5910.28.S1.4

Hawton, K., Simkin, S., Deeks, J., Cooper, J., Johnston, A., Waters, K., Arundel, M., Bernal, W., Gunson, B., Hudson, M., Suri, D., & Simpson, K. (2004). UK legislation on analgesic packs: Before and after study of long term effect on poisonings. *BMJ*, 329, Article 1076. https://doi.org/10.1136/bmj.38253.572581.7C

Hoffberg, A. S., Stearns-Yoder, K. A., & Brenner, L. A. (2020). The effectiveness of crisis line services: A systematic review. *Frontiers in Public Health*, 7, Article 399. https://doi.org/10.3389/fpubh.2019.00399

Hoffmann, J. A., Attridge, M. M., Carroll, M. S., Simon, N. J. E., Beck, A. F., & Alpern, E. R. (2023). Association of youth suicides and county-level mental health professional shortage areas in the US. *JAMA Pediatrics*, 177(1), 71–80. https://doi.org/10.1001/jamapediatrics.2022.4419

Hom, M. A., Stanley, I. H., & Joiner, T. E. (2015). Evaluating factors and interventions that influence help-seeking and mental health

service utilization among suicidal individuals: A review of the literature. *Clinical Psychology Review*, 40, 28–39. https://doi.org/10.1016/j.cpr.2015.05.006

Horowitz, L. M., Bridge, J. A., Teach, S. J., Ballard, E., Klima, J., Rosenstein, D. L., Wharff, E. A., Ginnis, K., Cannon, E., Joshi, P., & Pao, M. (2012). Ask suicide-screening questions (ASQ): A brief instrument for the pediatric emergency department. *Archives of Pediatrics and Adolescent Medicine*, 166(12), 1170–1176. https://doi.org/10.1001/archpediatrics.2012.1276

Horowitz, L. M., Bridge, J. A., Tipton, M. V., Abernathy, T., Mournet, A. M., Snyder, D. J., Lanzillo, E. C., Powell, D., Schoenbaum, M., Brahmbhatt, K., & Pao, M. (2022). Implementing suicide risk screening in a pediatric primary care setting: From research to practice. *Academic Pediatrics*, 22(2), 217–226. https://doi.org/10.1016/j.acap.2021.10.012

Horowitz, L. M., Roaten, K., Pao, M., & Bridge, J. A. (2020). Suicide prevention in medical settings: The case for universal screening. *General Hospital Psychiatry*, 63, 7–8. https://doi.org/10.1016/j.genhosppsych.2018.11.009

Hughes, J. L., Horowitz, L. M., Ackerman, J. P., Adrian, M. C., Campo, J. V., & Bridge, J. A. (2023). Suicide in young people: Screening, risk assessment, and intervention. *BMJ*, 381, Article e070630.

Hung, P., Busch, S. H., Shih, Y.-W., McGregor, A. J., & Wang, S. (2020). Changes in community mental health services availability and suicide mortality in the US: A retrospective study. *BMC Psychiatry*, 20, Article 188. https://doi.org/10.1186/s12888-020-02607-y

Hunter, R. F., de la Haye, K., Murray, J. M., Badham, J., Valente, T. W., Clarke, M., & Kee, F. (2019). Social network interventions for health behaviours and outcomes: A systematic review and meta-analysis. *PLOS Medicine*, 16(9), Article e1002890. https://doi.org/10.1371/journal.pmed.1002890

Itzhaky, L., Davaasambuu, S., Ellis, S. P., Cisneros-Trujillo, S., Hannett, K., Scolaro, K., Stanley, B. H., Mann, J. J., Wainberg, M. L., Oquendo, M. A., & Sublette, M. E. (2022). Twenty-six years of psychosocial interventions to reduce suicide risk in adolescents: Systematic review and metaanalysis. *Journal of Affective Disorders*, 300, 511–531. https://doi.org/10.1016/j.jad.2021.12.094

Jenner, E., Jenner, L. W., Matthews-Sterling, M., Butts, J. K., & Williams, T. E. (2010). Awareness effects of a youth suicide prevention media campaign in Louisiana. *Suicide and Life-Threatening Behavior*, 40(4), 394–406. https://doi.org/10.1521/suli.2010.40.4.394

Johns, M. M., Lowry, R., Andrzejewski, J., Barrios, L. C., Demissie, Z., McManus, T., Rasberry, C. N., Robin, L., & Underwood, J. M. (2019). Transgender identity and experiences of violence victimization, substance use, suicide risk, and sexual risk behaviors among high school students—19 states and large urban school districts, 2017. *Morbidity and Mortality Weekly Report*, 68(3), 67–71. https://doi.org/10.15585/mmwr.mm6803a3

Jordan, J. R., & McIntosh, J. L. (Eds.). (2011). *Grief after suicide: Understanding the consequences and caring for the survivors*. Routledge.

Kallgren, C. A., Reno, R. R., & Cialdini, R. B. (2000). A focus theory of normative conduct: When norms do and do not affect behavior. *Personality and Social Psychology Bulletin*, 26(8), 1002–1012. https://doi.org/10.1177/01461672002610009

Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Queen, B., Lowry, R., Chyen, D., Whittle, L., Thornton, J., Lim, C., Bradford, D., Yamakawa, Y., Leon, M., Brener, N., & Ethier, K. A. (2018). Youth risk behavior surveillance—United States, 2017. *Morbidity and Mortality Weekly Report*, 67(8),

1–114. https://www.cdc.gov/mmwr/volumes/67/ss/ss6708a1.htm

Katz, C., Bolton, S.-L., Katz, L. Y., Isaak, C., Tilston-Jones, T., & Sareen, J., Swampy Cree Suicide Prevention Team. (2013). A systematic review of school-based suicide prevention programs. *Depression and Anxiety*, 30, 1030–1045. https://doi.org/10.1002/da.22114

Kelly, J. A. (2004). Popular opinion leaders and HIV prevention peer education: Resolving discrepant findings, and implications for the development of effective community programmes. *AIDS Care*, 16(2), 139–150. https://doi.org/10.1080/09540120410001640986

Kemper, A. R., Hostutler, C. A., Beck, K., Fontanella, C. A., & Bridge, J. A. (2021). Depression and suicide-risk screening results in pediatric primary care. *Pediatrics*, 148(1), Article e2021049999. https://doi.org/10.1542/peds.2021-049999

King, C. A., Brent, D., Grupp-Phelan, J., Casper, T. C., Dean, J. M., Chernick, L. S., Fein, J. A., Mahabee-Gittens, E. M., Patel, S. J., Mistry, R. D., Duffy, S., Melzer-Lange, M., Rogers, A., Cohen, D. M., Keller, A., Shenoi, R., Hickey, R. W., Rea, M., & Cwik, M., Pediatric Emergency Care Applied Research Network. (2021). Prospective development and validation of the computerized adaptive screen for suicidal youth. *JAMA Psychiatry*, 78(5), 540–549. https://doi.org/10.1001/jamapsychiatry.2020.4576

King, C. A., Klaus, N., Kramer, A., Venkataraman, S., Quinlan, P., & Gillespie, B. (2009). The Youth-Nominated Support Team–Version II for suicidal adolescents: A randomized controlled intervention trial. *Journal of Consulting and Clinical Psychology*, 77(5), 880–893. https://doi.org/10.1037/a0016552

King, R., Nurcombe, B., Bickman, L., Hides, L., & Reid, W. (2003). Telephone counselling for adolescent suicide prevention: Changes in suicidality and mental state from beginning to end of a counselling session. *Suicide and Life-Threatening Behavior*, 33(4), 400–411. https://doi.org/10.1521/suli.33.4.400.25235

Kivisto, A. J., & Phalen, P. L. (2018). Effects of risk-based firearm seizure laws in Connecticut and Indiana on suicide rates, 1981–2015. *Psychiatric Services*, 69(8), 855–862. https://doi.org/10.1176/appi.ps.201700250

Klimes-Dougan, B., Klingbeil, D. A., & Meller, S. J. (2013). The impact of universal suicide-prevention programs on the help-seeking attitudes and behaviors of youths. *Crisis*, 34(2), 82–97. https://doi.org/10.1027/0227-5910/a000178

Knipe, D. W., Chang, S.-S., Dawson, A., Eddleston, M., Konradsen, F., Metcalfe, C., & Gunnell, D. (2017). Suicide prevention through means restriction: Impact of the 2008-2011 pesticide restrictions on suicide in Sri Lanka. *PLoS One*, 12(4), Article e0176750. https://doi.org/10.1371/journal.pone.0172893

Knopov, A., Sherman, R. J., Raifman, J. R., Larson, E., & Siegel, M. B. (2019). Household gun ownership and youth suicide rates at the state level, 2005–2015. *American Journal of Preventive Medicine*, 56(3), 335–342. https://doi.org/10.1016/j.amepre.2018.10.027

Krantz, L. B., Stanko-Lopp, D., Kuntz, M., & Wilcox, H. C. (2023). A guide for schools on student-directed suicide prevention programs eligible for implementation under the STANDUP Act, a rapid review and evidence synthesis. *Archives of Suicide Research*, 1–23. https://doi.org/10.1080/13811118.2023.2247033

Lang, M. (2013). The impact of mental health insurance laws on state suicide rates. *Health Economics*, 22(1), 73–88. https://doi.org/10.1002/hec.1816

Lanzillo, E. C., Powell, D., Bridge, J. A., Wharff, E. A., Ross, A., Solages, M., Nelson, S., Pao, M., & Horowitz, L. M. (2017). Detecting suicide risk on pediatric inpatient medical units: Is depression screening enough? *Journal of the American Academy of Child and Adolescent Psychiatry*, 56(10), Article S225. https://doi.org/10.1016/j.jaac.2017.09.209

Lapinski, M. K., & Rimal, R. N. (2005). An explication of social norms. *Communication Theory*, 15(2), 127–147. https://doi.org/10.1111/j.1468-2885.2005.tb00329.x

Lee, J. O., Kosterman, R., Jones, T. M., Herrenkohl, T. I., Rhew, I. C., Catalano, R. F., & Hawkins, J. D. (2016). Mechanisms linking high school graduation to health disparities in young adulthood: A longitudinal analysis of the role of health behaviours, psychosocial stressors, and health insurance. *Public Health*, 139, 61–69. https://doi.org/10.1016/j.puhe.2016.06.010

Li, X., & Ma, J. (2020). Does mental health parity encourage mental health utilization among children and adolescents? Evidence from the 2008 Mental Health Parity and Addiction Equity Act (MHPAEA. *The Journal of Behavioral Health Services and Research*, 47, 38–53. https://doi.org/10.1007/s11414-019-09660-w

Lieberman, R., & Poland, S. (2017). Suicide prevention legislation: What school psychologists need to know and do. *Communique*, 46(3), 1–8.

Lindow, J. C., Hughes, J. L., South, C., Gutierrez, L., Bannister, E., Trivedi, M. H., & Byerly, M. J. (2020). Feasibility and acceptability of the youth aware of mental health (YAM) intervention in US adolescents. *Archives of Suicide Research*, 24(2), 269–284. https://doi.org/10.1080/13811118.2019.1624667

Lindow, J. C., Hughes, J. L., South, C., Minhajuddin, A., Gutierrez, L., Bannister, E., Trivedi, M. H., & Byerly, M. J. (2020). The youth aware of mental health intervention: Impact on help seeking, mental health knowledge, and stigma in US adolescents. *Journal of Adolescent Health*, 67(1), 101–107. https://doi.org/10.1016/j.jadohealth.2020.01.006

Lindsey, M. A., Sheftall, A. H., Xiao, Y., & Joe, S. (2019). Trends of suicidal behaviors among high school students in the United States: 1991-2017. *Pediatrics*, 144(5), Article e20191187. https://doi.org/10.1542/peds.2019-1187

Loftin, C., McDowall, D., Wiersema, B., & Cottey, T. J. (1991). Effects of restrictive licensing of handguns on homicide and suicide in the district of Columbia. *New England Journal of Medicine*, 325(23), 1615–1620. https://doi.org/10.1056/NEJM199112053252305

Mann, J. J., Michel, C. A., & Auerbach, R. P. (2021). Improving suicide prevention through evidence-based strategies: A systematic review. *American Journal of Psychiatry*, 178(7), 611–624. https://doi.org/10.1176/appi.ajp.2020.20060864

Marttunen, M. J., Aro, H. M., & Lönnqvist, J. K. (1992). Adolescent suicide: Endpoint of long-term difficulties. *Journal of the American Academy of Child and Adolescent Psychiatry*, 31(4), 649–654. https://doi.org/10.1097/00004583-199207000-00011

Mathieu, S. L., Uddin, R., Brady, M., Batchelor, S., Ross, V., Spence, S. H., Watling, D., & Kõlves, K. (2021). Systematic review: The state of research into youth helplines. *Journal of the American Academy of Child & Adolescent Psychiatry*, 60(10), 1190–1233. https://doi.org/10.1016/j.jaac.2020.12.028

McCauley, E., Berk, M. S., Asarnow, J. R., Adrian, M., Cohen, J., Korslund, K., Avina, C., Hughes, J., Harned, M., Gallop, R., & Linehan, M. M. (2018). Efficacy of dialectical behavior therapy for adolescents at high risk for suicide: A randomized clinical trial. *JAMA Psychiatry*, 75(8), 777–785. https://doi.org/10.1001/jamapsychiatry.2018.1109

Meyer, I. H., Luo, F., Wilson, B. D. M., & Stone, D. M. (2019). Sexual orientation enumeration in state antibullying statutes in the United States: Associations with bullying, suicidal ideation, and suicide attempts among youth. *LGBT Health*, 6(1), 9–14. https://doi.org/10.1089/lgbt.2018.0194

Miller, A. B., & Prinstein, M. J. (2019). Adolescent suicide as a failure of acute stress-response systems. *Annual Review of Clinical*

Psychology, *15*, 425–450. https://doi.org/10.1146/annurev-clinpsy-050718-095625

Miller, D. N., Eckert, T. L., & Mazza, J. J. (2009). Suicide prevention programs in the schools: A review and public health perspective. *School Psychology Review*, *38*(2), 168–188. https://doi.org/10.1080/02796015.2009.12087830

Miller, I. W., Camargo, C. A., Arias, S. A., Sullivan, A. F., Allen, M. H., Goldstein, A. B., Manton, A. P., Espinola, J. A., Jones, R., Hasegawa, K., Boudreaux, E. D., & the ED-SAFE Investigators. (2017). Suicide prevention in an emergency department population: The ED-SAFE study. *JAMA Psychiatry*, *74*(6), 563–570. https://doi.org/10.1001/jamapsychiatry.2017.067

Miranda, R., & Jeglic, E. L. (2022). *Handbook of youth suicide prevention*. Springer. https://doi.org/10.1007/978-3-030-82465-5

Mishara, B. L., Daigle, M., Bardon, C., Chagnon, F., Balan, B., Raymond, S., & Campbell, J. (2016). Comparison of the effects of telephone suicide prevention help by volunteers and professional paid staff: Results from studies in the USA and Quebec, Canada. *Suicide and Life-Threatening Behavior*, *46*(5), 577–587. https://doi.org/10.1111/sltb.12238

Mo, P. K. H., Ko, T. T., & Xin, M. Q. (2018). School-based gatekeeper training programmes in enhancing gatekeepers' cognitions and behaviours for adolescent suicide prevention: A systematic review. *Child and Adolescent Psychiatry and Mental Health*, *12*(1), 29. https://doi.org/10.1186/s13034-018-0233-4

Mokkenstorm, J. K., Eikelenboom, M., Huisman, A., Wiebenga, J., Gilissen, R., Kerkhof, A. J. F. M., & Smit, J. H. (2017). Evaluation of the 113 online suicide prevention crisis chat service: Outcomes, helper behaviors and comparison to telephone hotlines. *Suicide and Life-Threatening Behavior*, *47*(3), 282–296. https://doi.org/10.1111/sltb.12286

Moore-Petinak, N., Waselewski, M., Patterson, B. A., & Chang, T. (2020). Active shooter drills in the United States: A national study of youth experiences and perceptions. *Journal of Adolescent Health*, *67*(4), 509–513. https://doi.org/10.1016/j.jadohealth.2020.06.015

Morris, P. (2021). *I don't want another family to lose a child the way we did*. New York Times Op-Ed. https://www.nytimes.com/2021/03/25/opinion/suicide-prevention.html?campaign_id=9&emc=edit_nn_20210325&instance_id=28461&nl=the-morning&regi_id=51262238&segment_id=54153&te=1&user_id=930376315161fd395d1ab10c5fdf14fa

Morris-Perez, P., & Abenavoli, R. (2022). *Report on preliminary findings of the Directing Change program 2020/2021*. New York University.

Mott, J. A., Wolfe, M. I., Alverson, C. J., Macdonald, S. C., Bailey, C. R., Ball, L. B., Moorman, J. E., Somers, J. H., Mannino, D. M., & Redd, S. C. (2002). National vehicle emissions policies and practices and declining US carbon monoxide–related mortality. *JAMA*, *288*(8), 988–995. https://doi.org/10.1001/jama.288.8.988

National Action Alliance for Suicide Prevention. (2022). *Best practices and recommendations for reporting on suicide*. https://reportingonsuicide.org/wp-content/uploads/2022/12/ROS-One-PagerUpdated2022.pdf

National Science and Technology Council. (2023). *Federal evidence agenda on LGBTQI+ equity: A report by the subcommittee on sexual orientation, gender identity, and variations in sex characteristics (SOGI) data*. https://www.whitehouse.gov/wp-content/uploads/2023/01/Federal-Evidence-Agenda-on-LGBTQI-Equity.pdf

Nelson, E. E., Leibenluft, E., McClure, E. B., & Pine, D. S. (2005). The social re-orientation of adolescence: A neuroscience perspective on the process and its relation to psychopathology. *Psychological Medicine*, *35*(2), 163–174. https://doi.org/10.1017/S0033291704003915

Niederkrotenthaler, T., Braun, M., Pirkis, J., Till, B., Stack, S., Sinyor, M., Tran, U. S., Voracek, M., Cheng, Q., Arendt, F., Scherr, S., Yip, P. S. F., & Spittal, M. J. (2020). Association between suicide reporting in the media and suicide: Systematic review and meta-analysis. *BMJ*, *368*, Article m575. https://doi.org/10.1136/bmj.m575

Niederkrotenthaler, T., & Sonneck, G. (2007). Assessing the impact of media guidelines for reporting on suicides in Austria: Interrupted time series analysis. *Australian & New Zealand Journal of Psychiatry*, *41*(5), 419–428. https://doi.org/10.1080/00048670701266680

Niederkrotenthaler, T., Stack, S., Till, B., Sinyor, M., Pirkis, J., Garcia, D., Rockett, I. R. H., & Tran, U. S. (2019). Association of increased youth suicides in the United States with the release of 13 Reasons Why. *JAMA Psychiatry*, *76*(9), 933–940. https://doi.org/10.1001/jamapsychiatry.2019.0922

Niederkrotenthaler, T., Till, B., Kirchner, S., Sinyor, M., Braun, M., Pirkis, J., Tran, U. S., Voracek, M., Arendt, F., Ftanou, M., Kovacs, R., King, K., Schlichthorst, M., Stack, S., & Spittal, M. J. (2022). Effects of media stories of hope and recovery on suicidal ideation and help-seeking attitudes and intentions: Systematic review and meta-analysis. *The Lancet Public Health*, *7*(2), Article e156–e168. https://doi.org/10.1016/S2468-2667(21)00274-7

Niederkrotenthaler, T., Voracek, M., Herberth, A., Till, B., Strauss, M., Etzersdorfer, E., Eisenwort, B., & Sonneck, G. (2010). Role of media reports in completed and prevented suicide: Werther v. Papageno effects. *British Journal of Psychiatry*, *197*(3), 234–243. https://doi.org/10.1192/bjp.bp.109.074633

Nishina, A., & Witkow, M. R. (2020). Why developmental researchers should care about biracial, multiracial, and multiethnic youth. *Child Development Perspectives*, *14*(1), 21–27. https://doi.org/10.1111/cdep.12350

Nock, M. K., Borges, G., Bromet, E. J., Cha, C. B., Kessler, R. C., & Lee, S. (2008). Suicide and suicidal behavior. *Epidemiologic Reviews*, *30*(1), 133–154. https://doi.org/10.1093/epirev/mxn002

Office of the Surgeon General. (1999). *The Surgeon General's call to action to prevent suicide*. U.S. Department of Health and Human Services. https://profiles.nlm.nih.gov/spotlight/nn/catalog/nlm:nlmuid-101584932X6-doc

Office of the Surgeon General. (2021). *Protecting youth mental health: The Surgeon General's Advisory*. U.S. Department of Health and Human Services. https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf

Office of the Surgeon General, & National Action Alliance for Suicide Prevention. (2012). *2012 national strategy for suicide prevention: Goals and objectives for action: A report of the U.S. Surgeon General and of the National Action Alliance for Suicide Prevention*. U.S. Department of Health & Human Services. http://www.ncbi.nlm.nih.gov/books/NBK109917/

O'Mara, R. M., Hill, R. M., Cunningham, R. M., & King, C. A. (2012). Adolescent and parent attitudes toward screening for suicide risk and mental health problems in the pediatric emergency department. *Pediatric Emergency Care*, *28*(7), 626–632. https://doi.org/10.1097/PEC.0b013e31825cfb10

Paluck, E. L., Shepherd, H., & Aronow, P. M. (2016). Changing climates of conflict: A social network experiment in 56 schools. *Proceedings of the National Academy of Sciences of the United States of America*, *113*(3), 566–571. https://doi.org/10.1073/pnas.1514483113

Parris, D., Fulks, E., & Kelley, C. (2021). *Anti-LGBTQ policy proposals can harm youth mental health*. Child Trends. https://www.childtrends.org/publications/anti-lgbtq-policy-proposals-can-harm-youth-mental-health

Patel, A., Watts, C., Shiddell, S., Couch, K., Smith, A. M., Moran, M. J., & Conners, G. P. (2018). Universal adolescent

suicide screening in a pediatric urgent care center. *Archives of Suicide Research*, *22*(1), 118–127. https://doi.org/10.1080/13811118.2017.1304303

Patient Safety Advisory Group. (2016). *Sentinel alert event 56: Detecting and treating suicide ideation in all settings*. https://www.jointcommission.org/resources/sentinel-event/sentinel-event-alert-newsletters/sentinel-event-alert-56-detecting-and-treating-suicide-ideation-in-all-settings/#.Y9xBxOzMLjA

Petrova, M., Wyman, P. A., Schmeelk-Cone, K., & Pisani, A. R. (2015). Positive-themed suicide prevention messages delivered by adolescent peer leaders: Proximal impact on classmates' coping attitudes and perceptions of adult support. *Suicide and Life-Threatening Behavior*, *45*(6), 651–663. https://doi.org/10.1111/sltb.12156

Piekarz-Porter, E., Schermback, R. M., Leider, J., Temkin, D., Belford, J., & Chriqui, J. F. (2019). *The current landscape of school district and charter policies that support healthy schools: School Year 2017-18*. The Institute of Health Research and Policy. https://www.childtrends.org/wp-content/uploads/2019/10/SchoolDistrictCharterPoliciesHealthySchools_ChildTrends_November2019.pdf

Pirkis, J., Spittal, M. J., Cox, G., Robinson, J., Cheung, Y. T. D., & Studdert, D. (2013). The effectiveness of structural interventions at suicide hotspots: A meta-analysis. *International Journal of Epidemiology*, *42*(2), 541–548. https://doi.org/10.1093/ije/dyt021

Pisani, A. R., Gould, M. S., Gallo, C., Ertefaie, A., Kelberman, C., Harrington, D., Weller, D., & Green, S. (2022). Individuals who text crisis text line: Key characteristics and opportunities for suicide prevention. *Suicide and Life-Threatening Behavior*, *52*(3), 567–582. https://doi.org/10.1111/sltb.12872

Pittman, A., Osborn, D., King, M., & Erlangsen, A. (2014). Effects of suicide bereavement on mental health and suicide risk. *Lancet Psychiatry*, *1*(1), 86–94. https://doi.org/10.1016/S2215-0366(14)70224-X

Posner, K., Brown, G. K., Stanley, B., Brent, D. A., Yershova, K. V., Oquendo, M. A., Currier, G. W., Melvin, G. A., Greenhill, L., Shen, S., & Mann, J. J. (2011). The Columbia-Suicide severity rating scale: Initial validity and internal consistency findings from three multisite studies with adolescents and adults. *American Journal of Psychiatry*, *168*(12), 1266–1277. https://doi.org/10.1176/appi.ajp.2011.10111704

Poteat, V. P., Calzo, J. P., Yoshikawa, H., Lipkin, A., Ceccolini, C. J., Rosenbach, S. B., O'Brien, M. D., Marx, R. A., Murchison, G. R., & Burson, E. (2020). Greater engagement in gender-sexuality alliances (GSAs) and GSA characteristics predict youth empowerment and reduced mental health concerns. *Child Development*, *91*(5), 1509–1528. https://doi.org/10.1111/cdev.13345

Raifman, J., Charlton, B. M., Arrington-Sanders, R., Chan, P. A., Rusley, J., Mayer, K. H., Stein, M. D., Austin, S. B., & McConnell, M. (2020). Sexual orientation and suicide attempt disparities among us adolescents: 2009–2017. *Pediatrics*, *145*(3), Article e20191658. https://doi.org/10.1542/peds.2019-1658

Raifman, J., Moscoe, E., Austin, S. B., & McConnell, M. (2017). Difference-in-differences analysis of the association between state same-sex marriage policies and adolescent suicide attempts. *JAMA Pediatrics*, *171*(4), 350–356. https://doi.org/10.1001/jamapediatrics.2016.4529

Randall, J. R., Nickel, N. C., & Colman, I. (2015). Contagion from peer suicidal behavior in a representative sample of American adolescents. *Journal of Affective Disorders*, *186*, 219–225. https://doi.org/10.1016/j.jad.2015.07.001

Ream, G. L. (2019). What's unique about lesbian, gay, bisexual, and transgender (LGBT) youth and young adult suicides? Findings from the national violent death reporting system. *Journal of Adolescent Health*, *64*(5), 602–607. https://doi.org/10.1016/j.jadohealth.2018.10.303

Reason, J. (1990). The contribution of latent human failures to the breakdown of complex systems. *Philosophical Transactions of the Royal Society of London. B, Biological Sciences*, *327*(1241), Article 1241. https://doi.org/10.1098/rstb.1990.0090

Reason, J. (2000). Human error: Models and management. *BMJ*, *320*, Article 7237. https://doi.org/10.1136/bmj.320.7237.768

Reisch, T., Steffen, T., Habenstein, A., & Tschacher, W. (2013). Change in suicide rates in Switzerland before and after firearm restriction resulting from the 2003 "Army XXI" reform. *American Journal of Psychiatry*, *170*(9), 977–984. https://doi.org/10.1176/appi.ajp.2013.12091256

Roaten, K., Horowitz, L. M., Bridge, J. A., Goans, C. R. R., McKintosh, C., Genzel, R., Johnson, C., & North, C. S. (2021). Universal pediatric suicide risk screening in a health care system: 90,000 patient encounters. *Journal of the Academy of Consultation-Liaison Psychiatry*, *62*(4), 421–429. https://doi.org/10.1016/j.jaclp.2020.12.002

Robinson, J., Bailey, E., Witt, K., Stefanac, N., Milner, A., Currier, D., Pirkis, J., Condron, P., & Hetrick, S. (2018). What works in youth suicide prevention? A systematic review and meta-analysis. *EClinicalMedicine*, *4–5*, 52–91. https://doi.org/10.1016/j.eclinm.2018.10.004

Robinson, J., Hill, N. T. M., Thorn, P., Battersby, R., Teh, Z., Reavley, N. J., Pirkis, J., Lamblin, M., Rice, S., & Skehan, J. (2018). The #chatsafe project. Developing guidelines to help young people communicate safely about suicide on social media: A Delphi study. *PLOS ONE*, *13*(11), Article e0206584. https://doi.org/10.1371/journal.pone.0206584

Robinson-Link, N., Hoover, S., Bernstein, L., Lever, N., Maton, K., & Wilcox, H. (2020). Is gatekeeper training enough for suicide prevention? *School Mental Health*, *12*(2), 239–249. https://doi.org/10.1007/s12310-019-09345-x

Rockett, I. R., Wang, S., Stack, S., De Leo, D., Frost, J. L., Ducatman, A. M., Walker, R. L., & Kapusta, N. D. (2010). Race/ethnicity and potential suicide misclassification: Window on a minority suicide paradox. *BMC Psychiatry*, *10*(1), Article 35. https://doi.org/10.1186/1471-244X-10-35

Rockett, I. R. H. (2010). Counting suicides and making suicide count as a public health problem. *Crisis*, *31*(5), 227–230. https://doi.org/10.1027/0227-5910/a000071

Rose, G. (1992). *The strategy of preventive medicine (Reprort)*. Oxford University Press.

Ross, C. (1985). In M. Peck (Ed.), *Teaching children the facts of life and death: Suicide prevention in the schools*. APA.

Rowhani-Rahbar, A., Simonetti, J. A., & Rivara, F. P. (2016). Effectiveness of interventions to promote safe firearm storage. *Epidemiologic Reviews*, *38*(1), 111–124. https://doi.org/10.1093/epirev/mxv006

Runkle, J. R., Harden, S., Hart, L., Moreno, C., Michael, K., & Sugg, M. M. (2022). Socioenvironmental drivers of adolescent suicide in the United States: A scoping review. *Journal of Rural Mental Health*, *47*(2), 65–80. https://doi.org/10.1037/rmh0000208

Russell, S. T., Horn, S., Kosciw, J., & Saewyc, E. (2010). Safe schools policy for LGBTQ students and commentaries. *Social Policy Report*, *24*(4), 1–25. https://doi.org/10.1002/j.2379-3988.2010.tb00065.x

Substance Abuse and Mental Health Services Administration (SAMHSA). (2020). *Treatment for suicidal ideation, self-harm, and suicide attempts among youth. Publication No. PEP20-06-01-002*. National Mental Health and Substance Use Policy Laboratory. Substance Abuse and Mental Health Services Administration.

Schilling, E. A., Aseltine, R. H., & James, A. (2016). The SOS suicide prevention program: Further evidence of efficacy and effectiveness. *Prevention Science*, *17*(2), 157–166. https://doi.org/10.1007/s11121-015-0594-3

Scott, M., Singer, J. B., & Hughes, J. (2021). Preventing youth suicide in the school community: Strategies for postvention, intervention, and prevention. In R. Miranda & E. L. Jeglic (Eds.), *Handbook of youth suicide prevention* (pp. 371–389). Springer International Publishing. https://doi.org/10.1007/978-3-030-82465-5_21

Sekhar, D. L., Batra, E., Schaefer, E. W., Walker-Harding, L. R., Pattison, K. L., Molinari, A., Rosen, P., Kraschnewski, J. L., & Waxmonsky, J. G. (2022). Adolescent suicide risk screening: A secondary analysis of the shield randomized clinical trial. *The Journal of Pediatrics*, *251*, 172–177. https://doi.org/10.1016/j.jpeds.2022.07.036

Shaffer, D. (1996). Psychiatric diagnosis in child and adolescent suicide. *Archives of General Psychiatry*, *53*(4), 339. https://doi.org/10.1001/archpsyc.1996.01830040075012

Shannonhouse, L., Lin, Y.-W. D., Shaw, K., & Porter, M. (2017). Suicide intervention training for K-12 schools: A quasi-experimental study on ASIST. *Journal of Counseling and Development*, *95*(1), 3–13. https://doi.org/10.1002/jcad.12112

Shelton, R. C., Lee, M., Brotzman, L. E., Crookes, D. M., Jandorf, L., Erwin, D., & Gage-Bouchard, E. A. (2019). Use of social network analysis in the development, dissemination, implementation, and sustainability of health behavior interventions for adults: A systematic review. *Social Science and Medicine*, *220*, 81–101. https://doi.org/10.1016/j.socscimed.2018.10.013

Shenassa, E. D. (2003). Lethality of firearms relative to other suicide methods: A population based study. *Journal of Epidemiology and Community Health*, *57*(2), 120–124. https://doi.org/10.1136/jech.57.2.120

Singer, J. B., Erbacher, T. A., & Rosen, P. (2019). School-based suicide prevention: A framework for evidence-based practice. *School Mental Health*, *11*(1), 54–71. https://doi.org/10.1007/s12310-018-9245-8

Smith-Millman, M. K., & Flaspohler, P. D. (2019). School-based suicide prevention laws in action: A nationwide investigation of principals' knowledge of and adherence to state school-based suicide prevention laws. *School Mental Health*, *11*(2), 321–334. https://doi.org/10.1007/s12310-018-9287-y

Solmi, M., Radua, J., Olivola, M., Croce, E., Soardo, L., Salazar de Pablo, G., Il Shin, J., Kirkbride, J. B., Jones, P., Kim, J. H., Kim, J. Y., Carvalho, A. F., Seeman, M. V., Correll, C. U., & Fusar-Poli, P. (2022). Age at onset of mental disorders worldwide: Large-scale meta-analysis of 192 epidemiological studies. *Molecular Psychiatry*, *27*(1), 281–295. https://doi.org/10.1038/s41380-021-01161-7

STANDUP Act of 2021, no. S.1543, 117th Cong. (2021). https://www.congress.gov/bill/117th-congress/senate-bill/1543

Stanley, B., Brown, G., Brent, D. A., Wells, K., Poling, K., Curry, J., Kennard, B. D., Wagner, A., Cwik, M. F., Klomek, A. B., Goldstein, T., Vitiello, B., Barnett, S., Daniel, S., & Hughes, J. (2009). Cognitive-behavioral therapy for suicide prevention (CBT-SP): Treatment model, feasibility, and acceptability. *Journal of the American Academy of Child and Adolescent Psychiatry*, *48*(10), 1005–1013. https://doi.org/10.1097/CHI.0b013e3181b5dbfe

Stanley, B., & Brown, G. K. (2012). Safety planning intervention: A brief intervention to mitigate suicide risk. *Cognitive and Behavioral Practice*, *19*(2), 256–264. https://doi.org/10.1016/j.cbpra.2011.01.001

Steinberg, L. (2008). A social neuroscience perspective on adolescent risk-taking. *Developmental Review*, *28*(1), 78–106. https://doi.org/10.1016/j.dr.2007.08.002

Steinberg, L. (2014). *Age of opportunity: Lessons from the new science of adolescence* (p. 264). Houghton Mifflin Harcourt.

Steinberg, L. (2015). The neural underpinnings of adolescent risk-taking: The roles of reward-seeking, impulse control, and peers. In G. Oettingen & P. M. Gollwitzer (Eds.), *Self-regulation in adolescence* (1st ed., pp. 173–192). Cambridge University Press. https://doi.org/10.1017/CBO9781139565790.009

Stone, D. M., Holland, K. M., Bartholow, B., E. Logan, J., LiKamWa McIntosh, W., Trudeau, A., & Rockett, I. R. H. (2017). Deciphering suicide and other manners of death associated with drug intoxication: A centers for disease control and prevention consultation meeting summary. *American Journal of Public Health*, *107*(8), 1233–1239. https://doi.org/10.2105/AJPH.2017.303863

Surgenor, P. W. G., Quinn, P., & Hughes, C. (2016). Ten recommendations for effective school-based, adolescent, suicide prevention programs. *School Mental Health*, *8*(4), 413–424. https://doi.org/10.1007/s12310-016-9189-9

Survivors of Suicide Loss Task Force. (2015). *Responding to grief, trauma, and distress after a suicide: U.S. National Guidelines*. National Action Alliance for Suicide Prevention. http://www.sprc.org/resources-programs/responding

Telzer, E. H. (2016). Dopaminergic reward sensitivity can promote adolescent health: A new perspective on the mechanism of ventral striatum activation. *Developmental Cognitive Neuroscience*, *17*, 57–67. https://doi.org/10.1016/j.dcn.2015.10.010

Telzer, E. H., van Hoorn, J., Rogers, C. R., & Do, K. T. (2018). Social influence on positive youth development: A developmental neuroscience perspective, *Advances in child development and behavior* (Vol. 54, pp. 215–258). Elsevier. https://doi.org/10.1016/bs.acdb.2017.10.003

The Jason Foundation. (2023). *Jason Flatt Act*. https://jasonfoundation.com/about-us/jason-flatt-act/

The Joint Commission. (2019). *R3 Report: Requirement, rationale, reference, national patient safety goal for suicide prevention*. The Joint Commission. https://www.jointcommission.org/-/media/tjc/documents/standards/r3-reports/r3_18_suicide_prevention_hap_bhc_cah_11_4_19_final1.pdf

The National Institutes of Health. (2023). *Search results for youth suicide*. RePORTER. https://reporter.nih.gov/search/W50O-XKkI0m0G2P_GP_oNA/projects/charts

Thompson, L. K., Sugg, M. M., & Runkle, J. R. (2018). Adolescents in crisis: A geographic exploration of help-seeking behavior using data from crisis text line. *Social Science and Medicine*, *215*, 69–79. https://doi.org/10.1016/j.socscimed.2018.08.025

Till, B., Strauss, M., Sonneck, G., & Niederkrotenthaler, T. (2015). Determining the effects of films with suicidal content: A laboratory experiment. *British Journal of Psychiatry*, *207*(1), 72–78. https://doi.org/10.1192/bjp.bp.114.152827

Till, B., Tran, U. S., Voracek, M., & Niederkrotenthaler, T. (2017). Beneficial and harmful effects of educative suicide prevention websites: Randomised controlled trial exploring Papageno. Werther effects. *British Journal of Psychiatry*, *211*(2), 109–115. https://doi.org/10.1192/bjp.bp.115.177394

Trivedi, M. H., Nandy, K., Mayes, T. L., Wang, T., Forbes, K., Anderson, J. R., Fuller, A., & Hughes, J. L. (2022). Youth Aware of Mental Health (YAM) program with Texas adolescents: Depression, anxiety, and substance use outcomes. *The Journal of Clinical Psychiatry*, *83*(4), 41081. https://doi.org/10.4088/JCP.21m14221

Twenge, J. M., Haidt, J., Lozano, J., & Cummins, K. M. (2022). Specification curve analysis shows that social media use is linked to poor mental health, especially among girls. *Acta Psychologica*, *224*, Article 103512. https://doi.org/10.1016/j.actpsy.2022.103512

Underwood, J. M., Brener, N., Thornton, J., Harris, W. A., Bryan, L. N., Shanklin, S. L., Deputy, N., Roberts, A. M., Queen, B., Chyen, D., Whittle, L., Lim, C., Yamakawa, Y., Leon-Nguyen, M., Kilmer, G., Smith-Grant, J., Demissie, Z., Jones, S. E., Clayton, H., & Dittus, P. (2020). Overview and methods for the youth risk behavior surveillance system—United States, 2019. *Morbidity and Mortality Weekly Report Supplements*, *69*(1), 1–10. https://doi.org/10.15585/mmwr.su6901a1

United States Census Bureau. (2022). *Age and Sex*. https://www.census.gov/topics/population/age-and-sex.html

Valente, T. W. (2012). Network interventions. *Science*, *337*(6090), 49–53. https://doi.org/10.1126/science.1217330

Valente, T. W., Palinkas, L. A., Czaja, S., Chu, K.-H., & Brown, C. H. (2015). Social network analysis for program implementation. *PLoS One*, *10*(6), Article e0131712. https://doi.org/10.1371/journal.pone.0131712

Van Hoorn, J., Van Dijk, E., Güroğlu, B., & Crone, E. A. (2016). Neural correlates of prosocial peer influence on public goods game donations during adolescence. *Social Cognitive and Affective Neuroscience*, 11(6), 923–933. https://doi.org/10.1093/scan/nsw013

Wadsworth, T., Kubrin, C. E., & Herting, J. R. (2014). Investigating the rise (and fall) of young Black male suicide in the United States, 1982–2001. *Journal of African American Studies*, 18(1), 72–91. https://doi.org/10.1007/s12111-013-9256-3

Walrath, C., Garraza, L. G., Reid, H., Goldston, D. B., & McKeon, R. (2015). Impact of the Garrett Lee Smith youth suicide prevention program on suicide mortality. *American Journal of Public Health*, 105(5), 986–993. https://doi.org/10.2105/AJPH.2014.302496

Walls, N. E., Wisneski, H., & Kane, S. (2013). School climate, individual support, or both? Gay-straight alliances and the mental health of sexual minority youth. *School Social Work Journal*, 37, 88–112.

Wasserman, D., Carli, V., Wasserman, C., Apter, A., Balazs, J., Bobes, J., Bracale, R., Brunner, R., Bursztein-Lipsicas, C., Corcoran, P., Cosman, D., Durkee, T., Feldman, D., Gadoros, J., Guillemin, F., Haring, C., Kahn, J.-P., Kaess, M., Keeley, H., & Hoven, C. W. (2010). Saving and empowering young lives in Europe (SEYLE): A randomized controlled trial. *BMC Public Health*, 10(1), Article 192. https://doi.org/10.1186/1471-2458-10-192

Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., Kelleher, I., Sarchiapone, M., Apter, A., Balazs, J., Bobes, J., Brunner, R., Corcoran, P., Cosman, D., Guillemin, F., Haring, C., Iosue, M., Kaess, M., Kahn, J.-P., & Carli, V. (2015). School-based suicide prevention programmes: The SEYLE cluster-randomised, controlled trial. *The Lancet*, 385(9977), 1536–1544. https://doi.org/10.1016/S0140-6736(14)61213-7

Wexler, L., White, J., & Trainor, B. (2015). Why an alternative to suicide prevention gatekeeper training is needed for rural Indigenous communities: Presenting an empowering community storytelling approach. *Critical Public Health*, 25(2), 205–217. https://doi.org/10.1080/09581596.2014.904039

Wexler, L. M., DiFluvio, G., & Burke, T. K. (2009). Resilience and marginalized youth: Making a case for personal and collective meaning-making as part of resilience research in public health. *Social Science and Medicine*, 69(4), 565–570. https://doi.org/10.1016/j.socscimed.2009.06.022

Whitaker, K., Shapiro, V. B., & Shields, J. P. (2016). School-based protective factors related to suicide for lesbian, gay, and bisexual adolescents. *Journal of Adolescent Health*, 58(1), 63–68. https://doi.org/10.1016/j.jadohealth.2015.09.008

Williams, A. (2015). *Move over, Millennials, here comes Generation Z*. The New York Times. https://www.nytimes.com/2015/09/20/fashion/move-over-millennials-here-comes-generation-z.html

Williams, D. Y., Wexler, L., & Mueller, A. S. (2022). Suicide postvention in schools: What evidence supports our current national recommendations? *School of Social Work Journal*, 46(2), 23–69.

Wing, C., Simon, K., & Bello-Gomez, R. A. (2018). Designing difference in difference studies: Best practices for public health policy research. *Annual Review in Public Health*, 39, 453–469. https://doi.org/10.1146/annurev-publhealth-040617-013507

Witt, K. G., Hetrick, S. E., Rajaram, G., Hazell, P., Taylor Salisbury, T. L., Townsend, E., & Hawton, K. (2021). Interventions for self-harm in children and adolescents. *The Cochrane Database of Systematic Reviews*, 3(3), Article CD013667. https://doi.org/10.1002/14651858.CD013667.pub2

World Health Organization. (2022). *World Health Statistics 2022: Monitoring health for the SDGs, sustainable development goals*. World Health Organization.

World Health Organization & International Association for Suicide Prevention. (2017). *Preventing suicide: A resource for media professionals, 2017 update*. World Health Organization. https://apps.who.int/iris/handle/10665/258814

Wyman, P. A., Brown, C. H., Inman, J., Cross, W., Schmeelk-Cone, K., Guo, J., & Pena, J. B. (2008). Randomized trial of a gatekeeper program for suicide prevention: 1-year impact on secondary school staff. *Journal of Consulting and Clinical Psychology*, 76(1), 104–115. https://doi.org/10.1037/0022-006X.76.1.104

Wyman, P. A., Brown, C. H., LoMurray, M., Schmeelk-Cone, K., Petrova, M., Yu, Q., Walsh, E., Tu, X., & Wang, W. (2010). An outcome evaluation of the sources of strength suicide prevention program delivered by adolescent peer leaders in high schools. *American Journal of Public Health*, 100(9), 1653–1661. https://doi.org/10.2105/AJPH.2009.190025

Yip, P. S., Caine, E., Yousuf, S., Chang, S.-S., Wu, K. C.-C., & Chen, Y.-Y. (2012). Means restriction for suicide prevention. *The Lancet*, 379(9834), 2393–2399. https://doi.org/10.1016/S0140-6736(12)60521-2

APPENDIX A: RATES AND TRENDS IN SUICIDE FATALITIES, AND SUICIDAL THOUGHTS AND BEHAVIORS

This appendix details rates and trends in suicide deaths, and suicidal thoughts and behaviors for adolescents between the ages of 10 and 19, who represent a priority population in the prevention of suicidality. Information comes from two sources: (a) the CDC (2023a) for suicide fatalities and a) the Youth Risk Behavior Surveillance System (YRBSS; CDC, 2023b),[13] that provides information on suicidal thoughts, plans, and attempts, as reported by youth in schools.[14]

Deaths by suicide account for one in every four deaths among adolescents or approximately 2900 deaths in 2021 (CDC, 2023a). For much of the past decade, suicide was the second leading cause of death for adolescents, with only deaths due to unintentional injury (e.g., motor vehicle and poisoning) higher than suicide.[15] Among adolescents who died by suicide, firearms (~48%) and suffocation (~37%) accounted for approximately eight in every ten deaths in 2021 (CDC, 2023a). Note that suicide deaths may be underreported (see Recommendations). Suicidal thoughts and behaviors are prevalent during adolescence with approximately one in five adolescents seriously considering suicide, one in six making a suicide plan, and 1 in 10 making at least one suicide attempt, in the past year (CDC, 2023b).

Secular trends

After declines through the 1990s, adolescent suicide fatality and suicidal thoughts and related behaviors have since increased (CDC, 2023a, 2023b). For deaths, the "inflection point" begins in 2007. From 2007 to 2021, the rate of fatalities due to suicide increased by 80%—compared to a 22% increase for nonadolescents
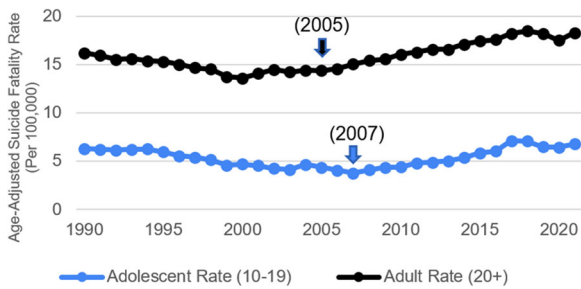
FIGURE A1 Age-adjusted suicide fatality rates (per 100,000), 1990–2021. *Source*: Centers for Disease Control and Prevention WISQARS (CDC, 2023a). Arrows indicate inflection points in which suicide fatality rates began to rise for adolescents (2007) and for adults (2005). Suicide deaths were identified using the International Classification of Diseases 10th Revision underlying cause-of-death codes U03, X60 - X84, and Y87.0. Age-adjusted suicide fatality rates were calculated using the 2000 US standard population.
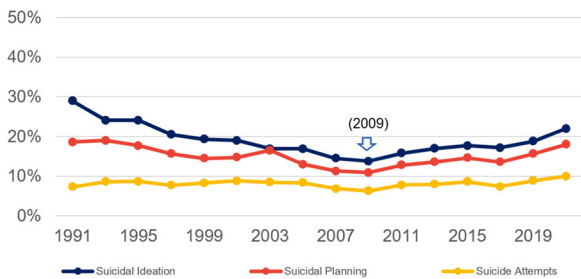

FIGURE A2 High-school-aged adolescent suicidal thoughts and behaviors, 1991–2021. *Source*: Centers for Disease Control and Prevention Youth Risk Behavior Surveillance System (CDC, 2023b); Centers for Disease Control and Prevention Youth Risk Behavior Survey (CDC, 2023b). Arrows indicate inflection points after which suicidal thoughts and behaviors began to increase for high-school aged adolescents (2009).

(CDC, 2023a), see Figure A1. Although this rise warrants attention, especially given adolescence represents a period of optimal health (CDC, 2023a), there are two important caveats: First, suicide fatality rates for adults are two to three times that for adolescents (CDC, 2023a). Second, the absolute number of adolescent deaths from suicide is relatively low: ~2900 in 2021 (CDC, 2023a). Like suicide deaths, suicidal thoughts and behaviors (ideation, plans, and attempts) among adolescents have been on the rise, since 2009. In 2021, the percentage of adolescents reporting at least one suicide attempt in the past year was at an all-time high, at 1 in every 10. From 2009 to 2021, adolescent report of suicidal ideation, making a plan, and at least one attempt in the past year have had relative increases of 59%, 65%, and 59%, respectively (CDC, 2023b), see Figure A2.

In the subsequent sections, we provide information on rates by demographic groups and geography across the past 5-10 years, depending on available data. (Note: although we report data by singular demographic groups, an intersectional approach would expand understanding and is warranted in future analyses; Hughes et al., 2023).

Variation by demographic groups

By age
The greatest increase in the incidence of suicidal thoughts and behaviors occur during adolescence (Miller & Prinstein, 2019; Nock et al., 2008), in tandem with the median onset of mental illness (Solmi et al., 2022). Fatality rates due to suicide rise until young adulthood and remain largely stable throughout much of adulthood (CDC, 2023a) with peaks at middle and older adulthood, see Figure A3. These data suggest that adolescence is an important time to intervene in the reduction of suicidality across the life course.
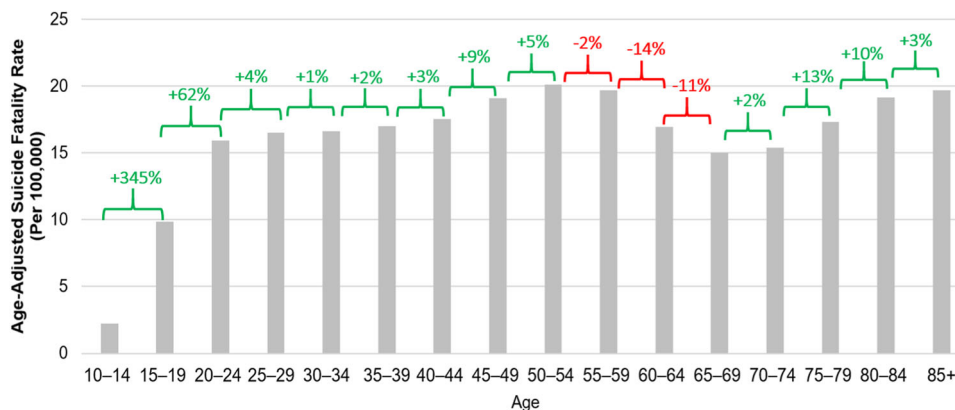

FIGURE A3 Age-adjusted suicide fatality rate (per 100,000) by age group, 2011–2021. *Source*: Centers for Disease Control and Prevention Web-based Injury Statistics Query and Reporting System (CDC, 2023a). Suicide deaths were identified using the International Classification of Diseases 10th Revision underlying cause-of-death codes U03, X60 - X84, and Y87.0. Age-adjusted suicide fatality rates were calculated using the 2000 US standard population.

By race/ethnicity

Historically, suicide had not been considered a racial/ethnic equity issue, given higher rates of reported suicide fatalities for white adolescents annually as compared to racial/ethnic minority adolescents. The exception is for Indigenous adolescents who historically have the highest rates of death due to suicide annually (CDC, 2023a), see Figure A4. However, the greatest *increases* in fatality rates due to suicide in the past decade were among minoritized racial/ethnic youth, including Black, Latino/a/x/e, Indigenous, and Asian/Pacific Islander adolescents, as compared to adolescents overall (CDC, 2023a). Relatedly, racially/ethnically minoritized adolescents accounted for more than 2 in every 5 (42%) deaths due to suicide among all adolescents in 2020, compared to only 32% in 2007 (CDC, 2023a), see Figure A5. Taken together, racially/ethnically minoritized adolescents represent an increasing
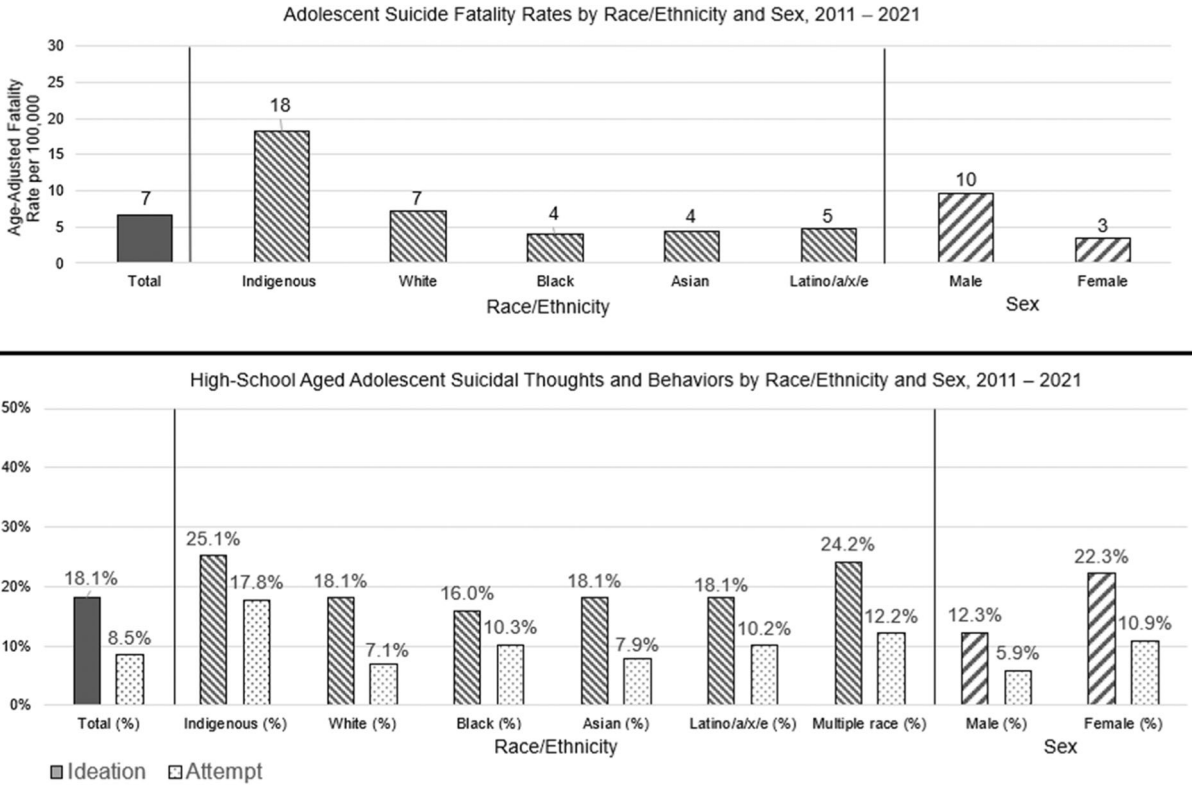

FIGURE A4 Adolescent suicide fatality rates (per 100,000), thoughts, and behaviors by race/ethnicity and sex. *Source*: Centers for Disease Control and Prevention Web-based Injury Statistics Query and Reporting System (CDC, 2023a); Centers for Disease Control and Prevention Youth Risk Behavior Surveillance System (CDC, 2023b). Suicide deaths were identified using the International Classification of Diseases 10th Revision underlying cause-of-death codes U03, X60 - X84, and Y87.0. Age-adjusted suicide fatality rates were calculated using the 2000 US standard population.
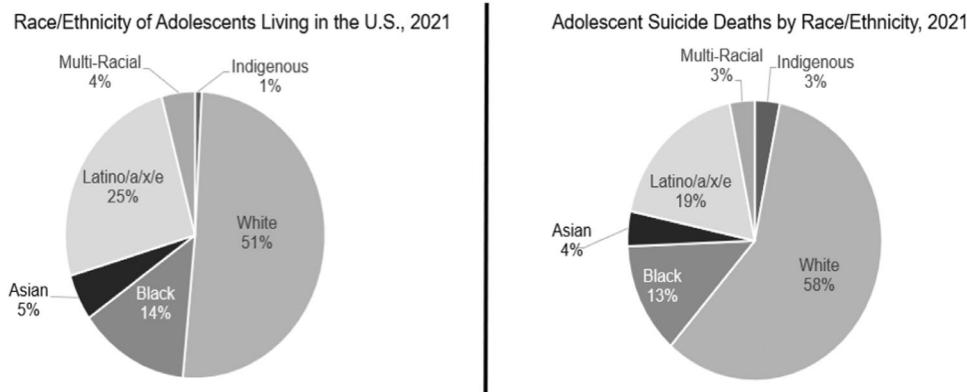

FIGURE A5 Adolescent population and suicide fatalities by race/ethnicity. *Sources*: Centers for Disease Control and Prevention Web-based Injury Statistics Query and Reporting System (CDC, 2023a); US Census Bureau (2023). Suicide deaths were identified using the International Classification of Diseases 10th Revision underlying cause-of-death codes U03, X60 - X84, and Y87.0.

proportion of suicide deaths among adolescents each year, which can be attributed to increasing suicidal rates *and* changing population demographics in the United States (CDC, 2023a; US Census Bureau, 2022).

For suicide ideation and attempts, rates for White, Black, Asian, and Latino/a/x/e adolescents are quite similar, while Indigenous and multi-racial adolescents are the most likely to report suicidal ideation [Indigenous (I) 25.1%, multiracial (MR): 24.2%, all youth: 18.1%] and at least one suicide attempt in the past year
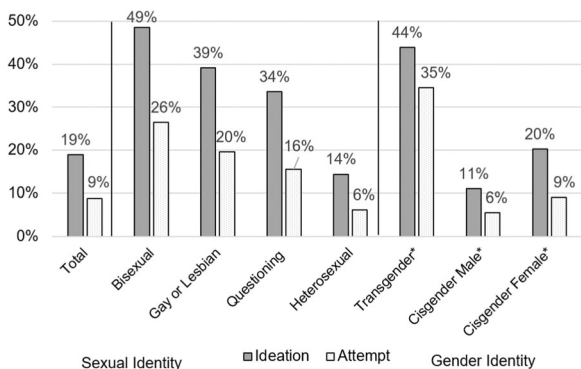

FIGURE A6 High-school-aged suicidal thoughts and behaviors by sexual and gender identity, 2015–2021. *Source*: Centers for Disease Control and Prevention Youth Risk Behavior Surveillance System (CDC, 2023b); Johns et al. (2019). Transgender identity and experiences of violence victimization, substance use, suicide risk, and sexual risk behaviors among high school students—19 states and large urban school districts, 2017. *Morbidity and Mortality Weekly Report, 68*(3), 67. *Gender identity data pulled from a Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report of pilot data collected from 10 states and nine large urban school districts in 2017. Pilot data did not include a breakdown of suicidal ideation and behavior by any other gender categories (e.g., nonbinary) and aggregated data for all transgender youth (e.g., transgender males, transgender females, etc.) into one category: Transgender.

[I: 17.8%, MR: 12.2%, all youth: 8.5%] from 2011 to 2021, see Figure A4. Black adolescent ideation and attempt rates have risen in the last 15 years (Lindsey et al., 2019).

By sex, gender identity, and sexual orientation

Although half (50.8%) of all individuals aged 10–19 are male, adolescent males accounted for three in every four deaths (72.6%) due to suicide among all adolescents in 2021 (CDC, 2023a). Interestingly, this sex inequity is reversed for suicidal thoughts and behaviors (in part because boys tend to use more lethal means than girls). On average over the last 5 years, a fifth (22%) of adolescents who report their sex as female seriously considered suicide and 1 in 10 (11%) reported at least one suicide attempt in the past year, higher than their male counterparts (12% and 6%, respectively). Importantly, response options for sex for both the YRBSS and CDC WISQARS are restricted to male and female. A select group of YRBSS states and local urban school districts piloted an additional question regarding transgender identity beginning in 2017. The findings indicate that approximately 44% of adolescents who identify as transgender reported seriously considering suicide and 35% reported attempting suicide at least once within the past year, two to three times the rates of their cisgender counterparts, see Figure A6 (Johns et al., 2019). As in other federal surveys, efforts to include more expansive measures of sexual orientation, gender identity, and sex characteristics are still needed (National Science and Technology Council, 2023).

Lesbian, gay, and bisexual adolescents are at exceptionally high suicide risk, with rates of suicide attempts 3–4 times higher than that of heterosexual adolescents (Kann et al., 2018; Raifman et al., 2020). An analysis of the National Violent Death Reporting System documented higher rates of death by suicide
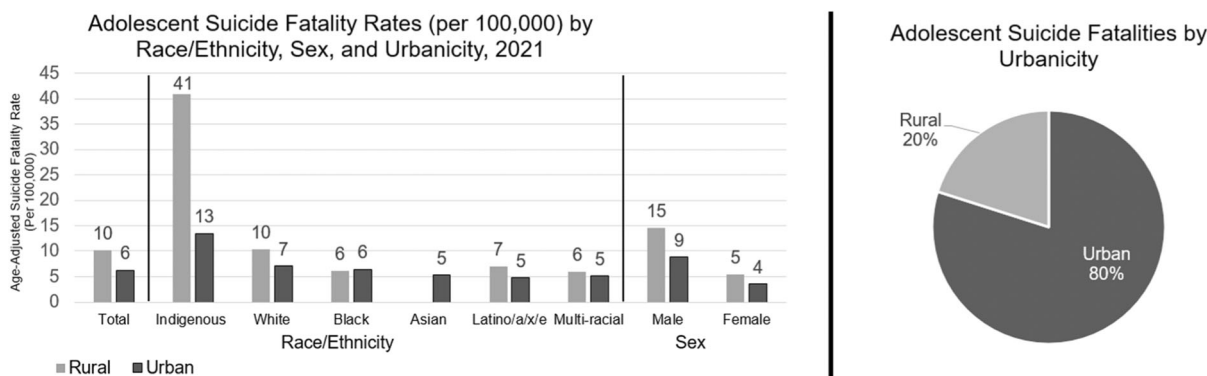

FIGURE A7 Adolescent suicide fatality rates (per 100,000) by urbanicity (i.e., urban vs. rural), 2021. *Source*: Centers for Disease Control and Prevention Web-based Injury Statistics Query and Reporting System (CDC, 2023a). Rural and urban rates were classified based on the 2013 National Center for Health Statistics (NCHS) urban–rural classification scheme for counties. Suicide deaths were identified using the International Classification of Diseases 10th Revision underlying cause-of-death codes U03, X60 - X84, and Y87.0. Age-adjusted suicide fatality rates were calculated using the 2000 US standard population.

for lesbian, gay, bisexual, and transgender adolescents (Ream, 2019). Similarly, according to YRBSS data (CDC, 2023b), one-third to one-half of adolescents who identify as questioning, gay/lesbian, or bisexual (34%, 39%, 49%, respectively) report seriously considering suicide in the past year, and nearly 1 in 4 or 5 (16%, 20%, and 26%, for questioning, gay/lesbian, or bisexual youth, respectively) report attempting suicide in the past year, dramatically higher than their heterosexual counterparts (14% and 6% for considering and attempting suicide, respectively). Note that bisexual adolescents are most likely to report suicidal ideation, planning, and attempt than any other demographic, see Figure A6. Notably, YRBSS sexual orientation data has only been collected since 2015 and is restricted to five categories: lesbian, gay, bisexual, heterosexual or questioning, reducing generalizability to the full spectrum of LGBTQ+ adolescents.

Variation by geography

By state, suicide rates among adolescents range from 3 to 19 per 100,000 adolescents. In the past decade, the three states with the highest rates of suicide among adolescents were Alaska, South Dakota, and Wyoming, while the three states with the lowest rates of suicide among adolescents were Rhode Island, New Jersey, New York (CDC, 2023a). Adolescents in rural areas have higher suicide fatality rates, as compared with adolescents who live in urban areas, and this rural/urban pattern is repeated for most racial/ethnic groups and for both boys and girls (although especially so for Indigenous adolescents and boys); see Figure A7 (Fontanella et al., 2015). This difference in suicide rates among adolescents within rural areas is associated with increased access to lethal means, primarily firearms (as we discuss above), and unmet need for mental health services (Runkle et al., 2022). However, while the rate of suicide death is higher for youth who live in rural areas, 8 in every 10 deaths due to suicide among adolescents occur among adolescents who live in urban areas, because more adolescents live in urban areas (CDC, 2023a).

AUTHOR BIOGRAPHIES

Pamela Morris-Perez PhD (she/her) is a professor of applied psychology at NYU Steinhardt. Trained in Developmental Psychology at Cornell University, Morris-Perez conducts research at the intersection of developmental psychology, suicidology, education, and policy. This Report is part of ARCADIA (A Research Center for ADolescent Interconnected Approaches) for Suicide Prevention) that was borne from the loss of her daughter Frankie and addresses adolescent suicide from a developmentally-informed, population-health perspective.

Rachel Abenavoli PhD (she/her) is a research assistant professor in the Institute of Human Development and Social Change at NYU Steinhardt. With a background in developmental, education, and prevention sciences, her research examines programs and practices implemented in the school context that support learning and social-emotional development among children and adolescents. She holds a PhD in Human Development and Family Studies from Penn State.

Adam Benzekri MS, MPH (he/him) is a PhD student in the Psychology and Social Intervention program at NYU Steinhardt. His research focuses on the development, evaluation, and dissemination of interventions designed to prevent suicide and promote behavioral health during adolescence. In particular, he is interested in how programming can help to support the ways in which adolescents find and make meaning of their life, mortality, and the contexts in which they are embedded.

Sarah Rosenbach-Jordan PhD (she/her) recently earned her PhD in Psychology and Social Intervention at NYU Steinhardt. Her research focused on the evidence-based ways in which schools and other youth-serving settings can support the healthy development of LGBTQ+ youth. She is currently a Project Director at Ward Research.

Gianna Rose Boccieri (she/her) is a student at NYU Steinhardt obtaining her MA in Counseling for Mental Health and Wellness. Her research interests focus on suicide stigma and dual stigma among LGBTQ+ people with mental health issues while applying research to practice.