ISSUE REPORT

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PAIN IN THE NATION SERIES:
Building a National Resilience Strategy

Addressing a Crisis:
Cross-Sector Strategies to Prevent Adolescent Substance Use and Suicide

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Introduction

Adolescence is a time of change; it's exciting, exhilarating, and often requires support. It's a period when youth are developing their capacity for self-direction.[1] For many young people, the transition from childhood to adulthood can be challenging, yet we know it is also a period full of promise and opportunity, when we can intervene to make sure kids are on the right path. This report highlights the increasing impact of drugs, alcohol, and suicide on adolescents—trends that are extremely concerning and problematic. Yet research and on-the-ground programs demonstrate that we can reduce adolescent substance use and suicide. Solutions are available, and communities are willing and able to take on these challenges. This report shines a light on the policies and programs that work and offers recommendations for meaningful action based on the following observations:

The United States has made significant progress in curbing adolescent substance misuse and related risk factors.[2] Illicit or injection and prescription drug use has declined or held steady among 12- to 17-year-olds since 2002.[3] Related risk factors, such as dating violence and bullying among high-schoolers, are declining.[4,5] And after years of increases, the rate of prescription overdose among 15- to 24-year-olds declined in 2017.[6] Alcohol use among adolescents has also declined over the past decades.[7,8,9]

But adolescent suicide and substance use rates are still too high and are endangering young lives. Suicide is the second leading cause of death among adolescents, and rates have been increasing since 2007.[10] While substance misuse has generally declined, deaths from overdose of prescription and illicit opioids increased 252.6 percent from 1999 to 2016, resulting in 7,921 deaths among 15-to 19-year-olds.[11] Vaping rates are climbing steeply, with 37.3 percent of 12th-graders reporting vaping over the last year, including substantial increases in marijuana vaping.[12]

There are staggering disparities in adolescent suicide and substance use rates. Gay, lesbian, and bisexual high school students have much higher rates of suicide-related behaviors compared with their heterosexual peers, and they are much more likely to binge drink and use other substances.[13] American Indian/Alaska Native (AI/AN) teens experience the highest rate of suicide of any population group in the United States and higher rates of alcohol and substance use.[14,15,16,17]

Adolescence marks a critical intervention point for reversing current trends related to these diseases of despair. Among adults ages 18 to 30 participating in substance use treatment 74 percent began using substances before age 17,[18,19] and half of all lifetime cases of mental illness begin by age 14, with three out of four cases by age 24.[20] Curbing the upward trends in adult overdoses and suicide requires early

intervention to prevent substance misuse before it starts and to promote positive mental health before problems develop.

The latest brain-science research proves that adolescence is a critical period for cognitive and behavioral development,[21] when intervening early to reduce risk factors and increase protective factors can prevent further, more significant problems.[21] As in early childhood, the adolescent brain rapidly forms new neural connections, particularly in the area of the brain responsible for reasoning, emotional regulation and impulse control. The areas of the brain responsible for sensation-seeking also grow faster and exert more influence, peaking around age 16, and are eventually balanced out by the impulse-control system in the early 20s.[22] In a process known as pruning, the adolescent brain solidifies neural pathways that are used and removes those that are not—a true use-it-or-lose-it scenario. These developmental changes—which are outlined in detail in the National Academies of Sciences, Engineering, and Medicine report *The Promise of Adolescence: Realizing Opportunity for all Youth* (see Chapter 2: Adolescent Development)[23]—hardwire the adolescent brain to experiment with risk.[24,25,26] Typically thought of through a negative lens, risk-taking is in fact both a normal and essential process in youth identity formation.

Despite the importance of promoting health during adolescence, the United States has not yet committed the resources and infrastructure to fully implement evidence-based programs to address mental and behavioral issues among adolescents. Overall trends for adolescent behaviors associated with mental health and suicide, such as feelings of hopelessness, suicide ideation, and suicide attempts, have stagnated or gotten worse in recent years.[27] And there

are growing inequities in adolescent risk-taking and mortality related to substance misuse and suicide; sexual minority youth in particular are increasingly and disproportionately impacted.[28]

To reverse these trends, the United States must adopt a prevention framework that aligns and harnesses the strengths of each sector to create a collective and more effective approach to reducing risk and promoting protective factors in adolescence.

The core tenets of an adolescent substance use and suicide prevention framework are to:

- **Support families in raising and nurturing their teenagers** through programs and policies, as well as material assistance—to combat the challenges facing today's families, including the economic pressure for all parents to work[29] and the absence of a "village" to help raise children.[30]
- **Better align interventions and investments across multiple sectors** to address common risk/protective factors for adolescent substance misuse and suicide. Often, efforts to address adolescent outcomes are siloed, with families sometimes operating alone and unaided, and youth-serving entities across health, justice, child welfare, youth development, education, and other sectors also operating separately from one another.
- **Adopt an explicit equity- and trauma-informed approach** that recognizes and addresses the social, economic, and psychological conditions that may elevate risk for substance misuse and suicide, and appropriately directs resources to reduce inequities.
- **Increase funding for efforts to *prevent* substance misuse and suicide,** particularly changes to social and environmental conditions, like access to good schools and housing. We can prevent risky behaviors before they start, yet historically, there has been an underinvestment in prevention, particularly primary prevention (that is, prevention before risky behaviors begin), as compared with treatment and recovery. Even when prevention efforts are in place, they tend to neglect adolescence, focusing more on early childhood.
- **Build the technical assistance and support infrastructure** needed to enable greater implementation and scaling of prevention strategies.
- **Invest in more prevention-related research,** particularly focused on cross-sector impacts and implementation science, as well as research in emerging areas, such as the impacts of social media.

Trends in Adolescent Substance Use and Suicide

The epidemic of deaths from drug overdoses, alcohol, and suicides—which is a key driver of the decline in American life expectancy for the third year in a row[31]—is taking the lives of thousands of adolescents annually.[32] We can reverse these trends.

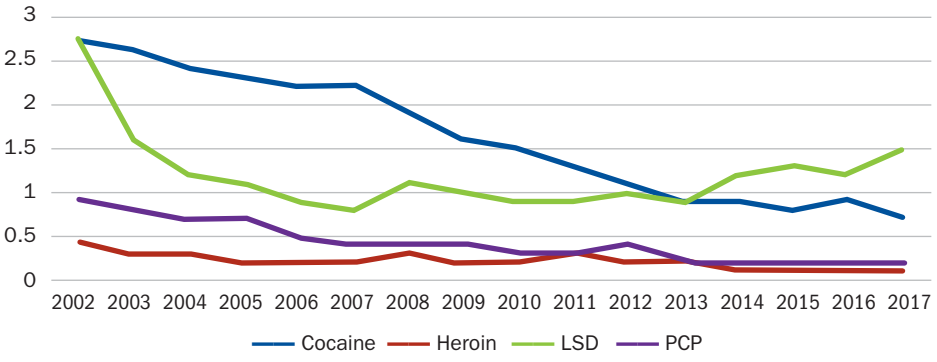
Positive trends in adolescent substance misuse and related risk factors underscore the value of prevention efforts and policies.

Declines in adolescent use of certain substances,[33] as well as related risk factors such as dating violence and bullying,[34,35] suggest that the prevention efforts and policies the country has invested in are making a difference.

Use of illicit substances and misuse of prescription drugs is declining among adolescents.

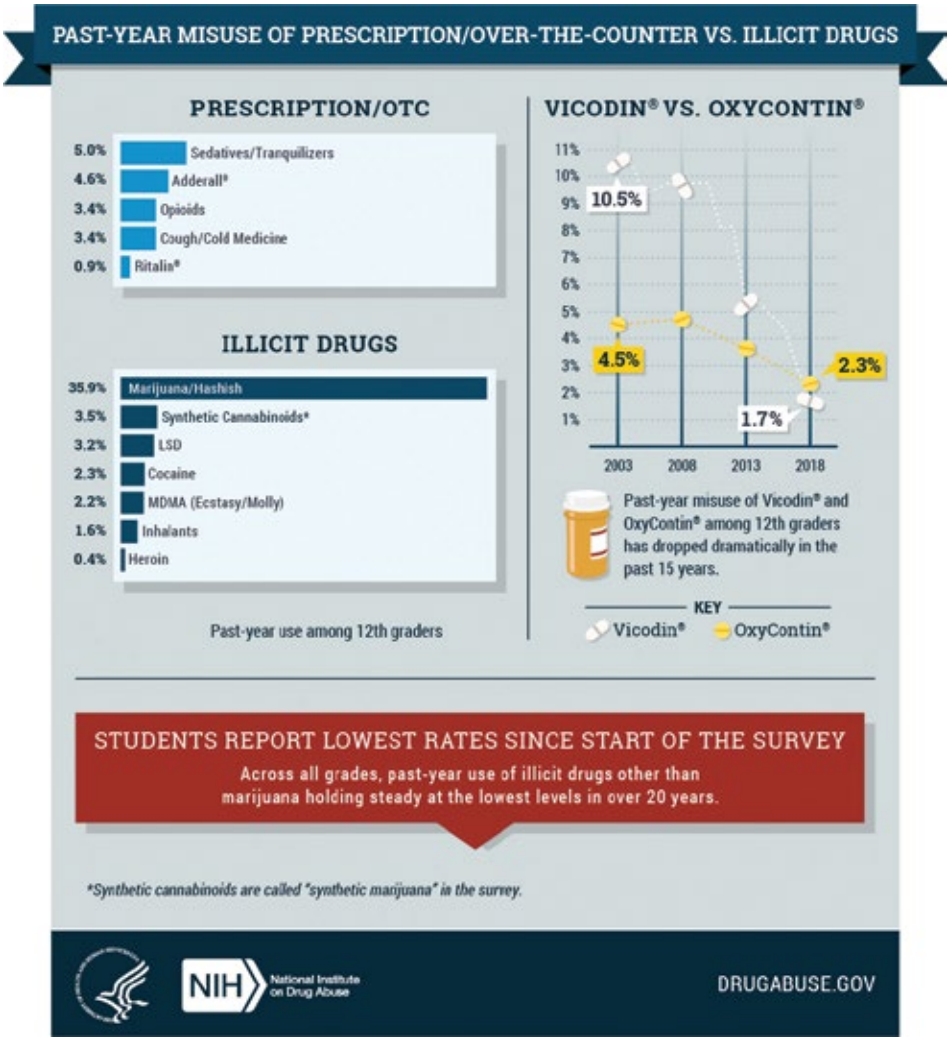
- Use of illicit or injection and prescription drugs among 12- to 17-year-olds has declined or held steady since 2002 (see Figure 1).[36]
- Students in 8th, 10th, and 12th grades have experienced a decline in past-year illicit drug use (other than marijuana), from 16 percent in 2001 to 9 percent in 2018.[37] This includes declines in the use of Vicodin, OxyContin, and pain medication (excluding heroin) (see Figure 2).
- The percentage of high school seniors who believe opioids are easily accessible declined significantly from 54 percent in 2010 to 36 percent in 2017.[38,39]

Figure 1: Selected types of lifetime illicit drug use in among 12- to 17-year-olds, 2002–2017 (National Survey on Drug Use and Health)[40]



These declines, combined with greater use of naloxone (an emergency medication to reverse opiate overdose), improved access to treatment, and the implementation of other prevention, treatment, and response efforts, may lead to a decline in narcotic overdose rates as this generation ages into adulthood. However, rising exposure to illicitly made fentanyl, a powerful synthetic opioid, has the potential to counteract this positive trend.

Figure 2: Past year use of illicit drugs and misuse of over-the-counter/ prescription drugs among 12th-graders (Monitoring the Future Survey, 2018)[41]

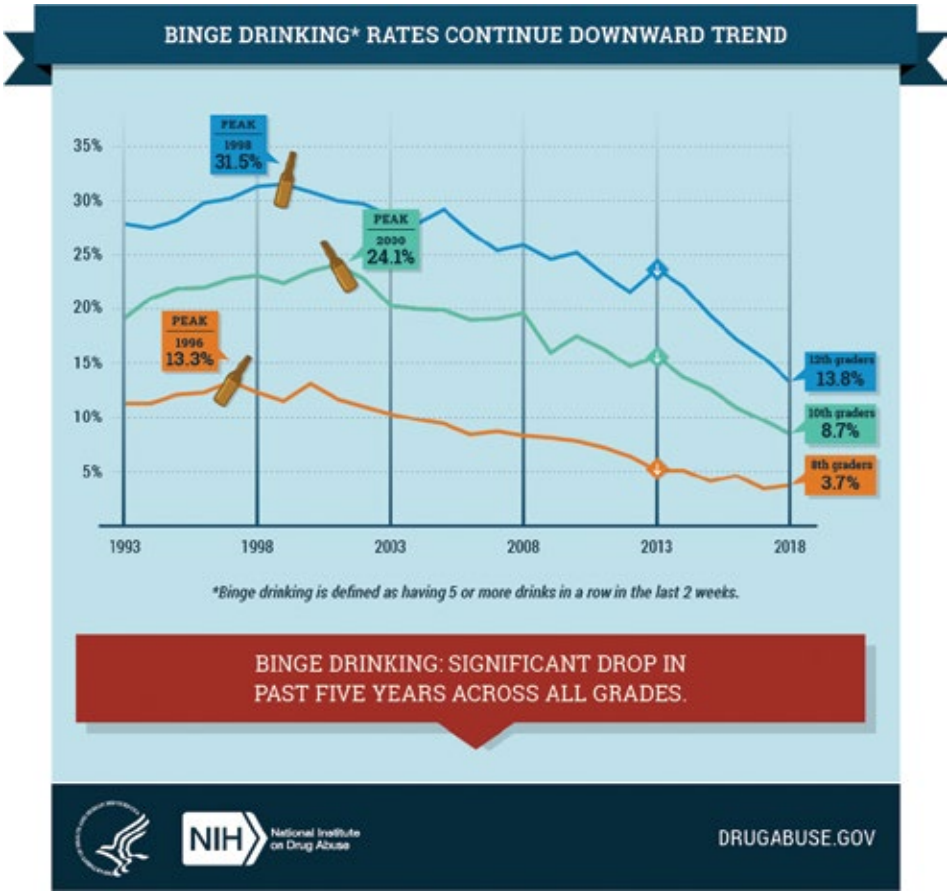


Declines in alcohol use among adolescents prove solutions exist.

- Alcohol use among adolescents has also declined significantly over the past decades.[42,43,44]
  - Lifetime alcohol use among high schoolers has declined sharply, from 82 percent in 1991 to 60 percent in 2017.[45]
  - Past-month alcohol use among 12- to 17-year-olds has declined, from 18 percent in 2002 to 10 percent in 2017.[46]
  - Among 8th-, 10th-, and 12th-graders, daily alcohol use is down by three-fourths, past-month use is down by one-half, and lifetime and annual use is down by 40 to 45 percent compared with the peak levels of use reached in the mid-1990s.[47]
- Underage alcohol use among adolescents is the lowest it has ever been.[48,49]
- Drunkenness and binge drinking among this age group have also declined (see Figure 3).[50,51]
- Peer disapproval of binge drinking has increased, and fewer young people are reporting that alcohol is easy for them to obtain.[52]

These declines may be in part driven by greater investments in education, outreach (such as drunk-driving campaigns), and legal efforts to reduce underage alcohol consumption, including stricter penalties for fake IDs, hosting parties where underage individuals are drinking, and drinking and driving, as well as policies such as alcohol outlet density regulations.[54]

Figure 3: Binge-drinking rates among 8th-, 10th-, and 12th-graders, 1993–2018
(National Vital Statistics Reports, 2017) [53]

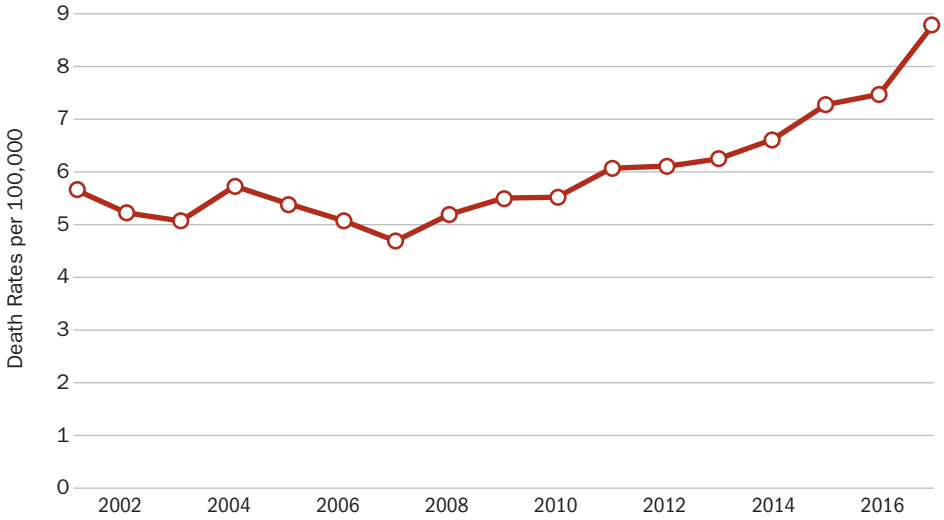


These areas of progress suggest that it is possible to reverse the upward trends in opioid overdoses and suicide with targeted policies and programs. This reversal is critical given the toll of adolescent substance misuse and suicide.

Suicide is the second leading cause of death among adolescents and is on the rise.

- Over one-fifth of deaths among 12- to 19-year-olds are suicides,[55] representing the second leading cause of death in this age group.
- Nearly 3,000 12- to 19-year-olds died by suicide in 2017.
- Suicide rates among this age group have been trending up since 2007, increasing by 87 percent between 2007 and 2017 (see Figure 4).[56]

Figure 4: Suicides among 12- to 19-year-olds (death rate per 100,000)
(National Vital Statistics Reports, 2017)[57]



Not surprisingly there is also an upward trend in suicide attempts.

- While the proportion of high schoolers seriously considering suicide decreased by more than 50 percent between 1991 and 2009,[58] these rates began increasing after 2009.
- In 2017, 7.4 percent of high schoolers had attempted suicide in the last 12 months (a 17 percent increase since 2009), and 2.4 percent had an attempt resulting in injury, poisoning, or overdose (a 26 percent increase since 2009).[59,60]

Too many adolescents are suffering and dying from substance misuse.

More young people are dying due to drug overdoses or drug-induced causes.

- In 2017, 5,455 young people ages 15 to 24 died due to drug overdose.[61]
- From 2012 to 2017, the percentage of 15- to 24-year-olds dying from drug overdose increased by 58 percent.[62]
- Deaths among 15- to 24-year-olds from overdose of synthetic opioids (other than methadone), including illicitly manufactured fentanyl, rose by 35.6 percent from 2016 to 2017 (1,958 deaths to 2,655 deaths).[63]

Young people are misusing prescribed pain medications.

- In 2017, 14 percent of high schoolers reported having taken prescription pain medicine without a doctor's prescription or differently than how a doctor told them to use it at least once in their lifetime.[64]
- Also in 2017, among 12- to 17-year-olds, 3.1 percent misused prescription pain relievers in the past year.[65]

Adolescent alcohol use has declined, but it is still too high.

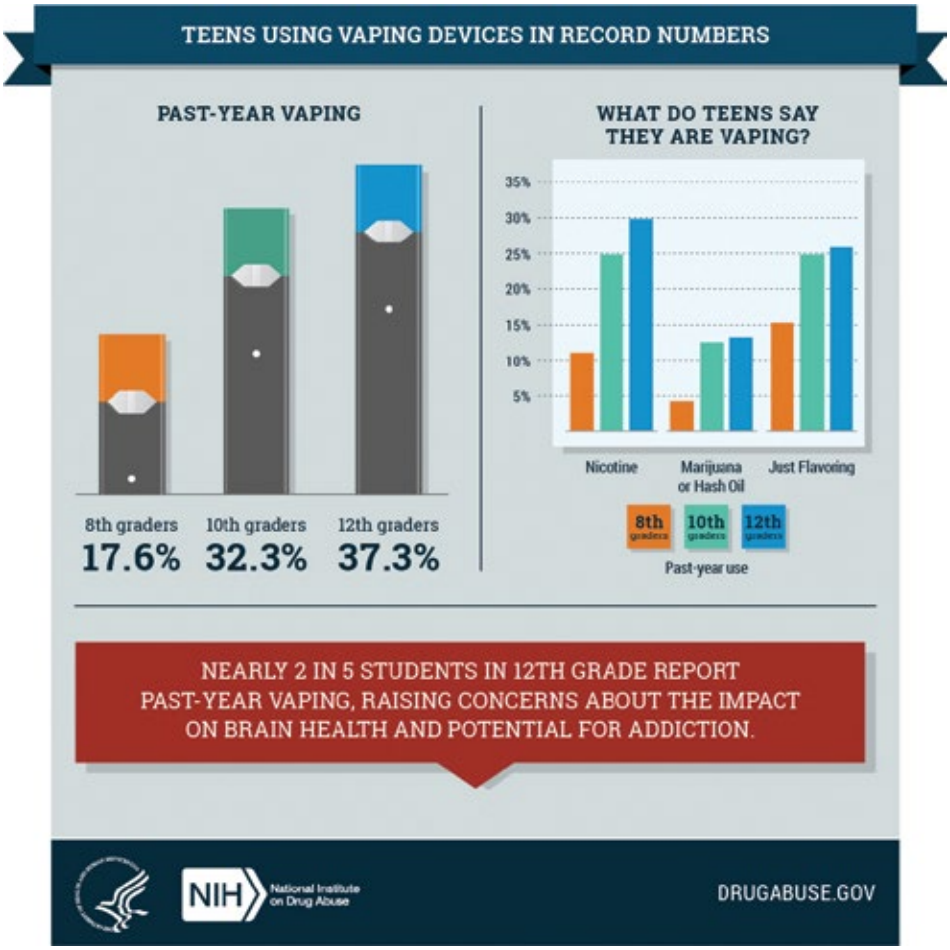
- One in five underage people ages 12 to 20 drank alcohol in the last month, and one in eight reported binge drinking in the same time frame.[66]
- 15.5 percent of students had their first drink of alcohol (other than a few sips) before age 13.[67]

Vaping rates are climbing dramatically among adolescents,

even as cigarette and other tobacco use continue to decline. Vaping can be particularly harmful during this stage of life because nicotine—which is in most e-cigarettes—is highly addictive and can harm adolescent brain development. Young people who use e-cigarettes may also be more likely to smoke cigarettes in the future.[68]

- From 2017 to 2018, e-cigarette use increased by 78 percent among high schoolers (to 20.8 percent) and 48 percent among middle schoolers (to 4.9 percent).[69]
- In 2018, the percentage of 8th-, 10th-, and 12th-graders vaping nicotine in the past 30 days doubled compared with 2017, representing the biggest one-year increase for any substance in the history of the Monitoring the Future survey.[70]

Figure 5: Teen vaping (Monitoring the Future Survey, 2018)[71]



More teenagers are also reporting vaping marijuana, which poses the risk of earlier and more frequent use, increasing the probability of problematic use or addiction to marijuana as teenagers enter adulthood.[72]

- Past-year marijuana vaping among 12th-graders rose from 9.5 percent in 2017 to 13.1 percent in 2018.[73]

Past-year marijuana use more broadly held fairly steady, yet legalization is changing the marijuana use landscape as well as risk perceptions.[74]

- Since around 2006, there has been a rapid decrease in the perception that marijuana is harmful among 8th-, 10th-, and 12th-graders, but there has been no concurrent increase in use.[75,76]
- In 2017, 12.4 percent of 12- to 17-year-olds and 34.9 percent of 18- to 25-year-olds used marijuana in the past year.[77]

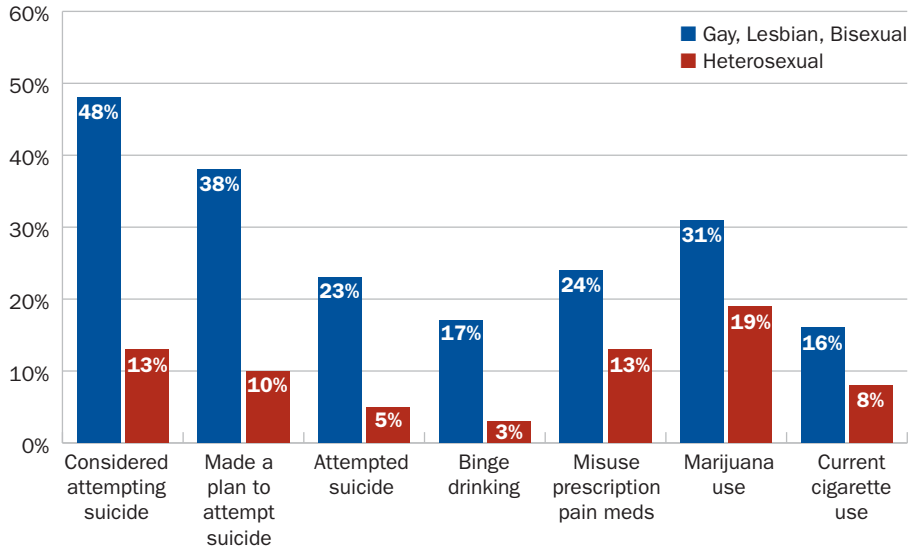
Data reveal staggering disparities in substance misuse and suicide rates.

Differences in adolescent substance misuse and suicide—by sexual orientation, race/ethnicity, socioeconomic status, geographic location, and other demographic factors—are often rooted in inequitable social, economic, and environmental conditions. Higher substance use and suicide among LGBT youth is likely due to stressors they experience, such as bias, discrimination, bullying, violence, and family rejection (see pages 17–21 for an in-depth discussion of these and other risk factors).[78]

Most striking is the high level of substance misuse and suicide-related behaviors among sexual minority adolescents (see Figure 6).

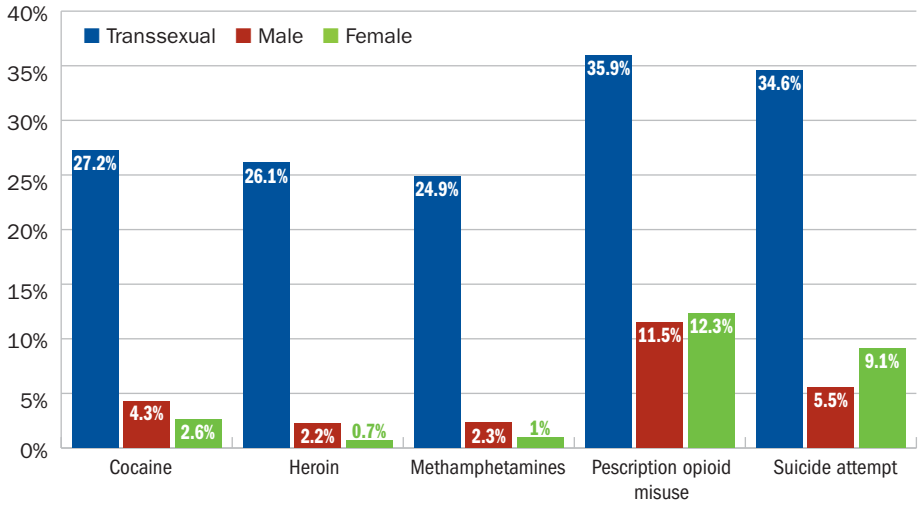
- Suicide-related behaviors are three to four times greater for gay, lesbian, and bisexual high school students compared with heterosexual high school students.[79]
- Binge drinking is five times greater among gay, lesbian, and bisexual high school students compared with heterosexual students.[79]
- Other substance use is one and a half to two times greater among gay, lesbian, and bisexual high school students compared with their heterosexual peers.[79]
- A markedly higher percentage of transgender students reported lifetime use of substances than their cisgender[a] peers in 2017 (see Figure 7).[80]

Figure 6: Suicide and substance misuse behaviors among adolescents by sexual orientation (National Youth Risk Behavior Survey, 2017)[81]



a "Cisgender" refers to a person whose sense of personal identity and gender corresponds with their birth sex.

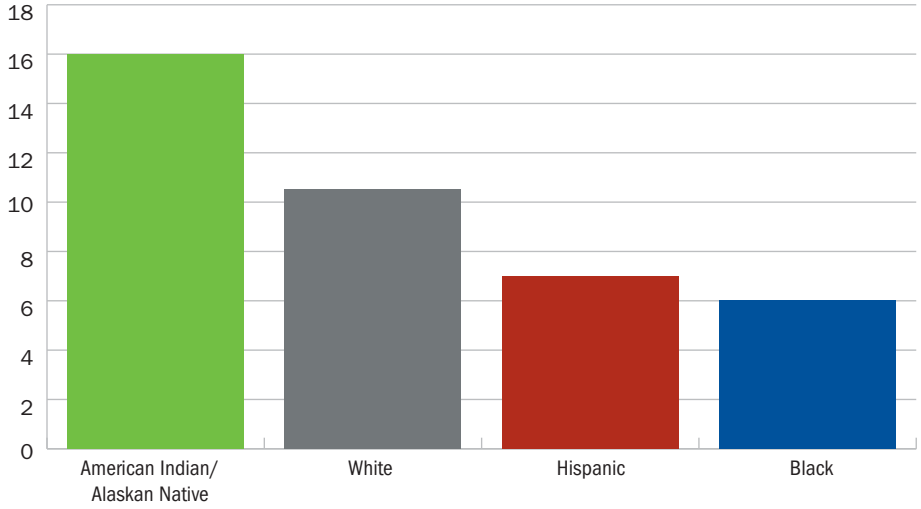
Figure 7: Lifetime substance use and suicide attempts among transgender and cisgender students, 2017 (Morbidity and Mortality Weekly Report, 68, (3))[82]



Substance misuse and suicide disproportionately affect adolescents from certain racial/ethnic groups.

- American Indian/Alaska Native (AI/AN) teens experience the highest rate of suicide among any population group in the United States: 16 suicides per 100,000 15- to 19-year-olds in 2016, 60 percent higher than the national average (see Figure 8).[83, 84, 85]
- Reservation-based American Indian 8th-graders reported substantially higher past-30-day alcohol, marijuana, cigarette, and illicit drug use than the U.S. average during the 2016–2017 school year. They had:
  - over twice the relative risk of using alcohol and illicit drugs,
  - over three times the relative risk of binge drinking, and
  - over four times the relative risk of tobacco and marijuana use.[87]

Figure 8: Suicide rate per 100,000 by race/ethnicity
(Youth Risk Behavior Survey, 2016)[86]



High prevalence of substance misuse and suicide among AI/AN populations may be a result of historical and intergenerational trauma, as ancestral land was forcefully taken and populations were relocated to reservations—with children shipped to boarding schools through a mid-19th-century federal assimilation program in which many of them were abused and lost their cultural identities.[88] In addition to intergenerational trauma and challenges with integrating into a different culture, youth risk may be elevated by high exposure to substance use within their families and communities.[89] Deep poverty, disproportionately high rates of incarceration, and lack of access to health care, especially mental health and substance use treatment services, exacerbates the problem for AI/AN teens and families both on and off reservations (see pages 17–21 for an in-depth discussion of these and other risk factors).[90,91]

- A higher percentage of Hispanic students in 8th and 12th grades used substances in 2018—including cocaine, crack, crystal methamphetamine, and sedatives—compared with White and African American students.[92]

Explanations for this high prevalence of substance use include challenges integrating into a new culture;[93] discrimination and language barriers; poor living conditions; and drug use and associated norms among family, peers, and the broader community (see pages 17–21 for an in-depth discussion of these and other risk factors).[94,95]

- Recent studies show that binge-drinking (consuming more than five drinks in a row two or more times in the past two weeks) frequency rates among African American adolescents are declining at a slower rate than those of other groups.[96]
- Suicide rates were roughly two times higher among African American children ages 5 to 12 than White children.[97,98]

There are many potential reasons for these disparities, including that Black children and adolescents are more likely to experience racism and discrimination, and they are more likely to live with cumulative worries about meeting basic needs, all of which negatively impact their mental and physical health.[99] Systematic inequities stemming from institutionalized bias, racial profiling, and unfair guidelines—including greater rates of school suspension and expulsion, disparities in sentencing and incarceration (especially for drug-related crimes), and residential segregation—contribute to Black children and adolescents having poorer educational opportunities, being more likely to live in poverty, being more exposed to toxic substances, and having more experience with the threats and realities of crime.[100] Mental health and related conditions among Black children and adolescents may be exacerbated by providers having greater trouble detecting depression among racial/ethnic minority patients,[101] lack of access to culturally acceptable behavioral health care,[102,103] and lack of research on effective depression interventions for this population.[104]

Substance use and suicide are complex health issues and thus the disparities can be difficult to unpack. For example, the trends can be complex and seemingly contradictory. **There is a need for additional research to better understand how substance use and suicide are affecting different populations.**

- A higher percentage of White students have misused prescription drugs than Hispanic students—particularly in upper grades.[105]
- A higher percentage of White students have misused prescription drugs than African American students; they are also more likely to misuse hallucinogens, synthetic marijuana, alcohol, and cigarettes.[106]
- From 2014 to 2016, a greater percentage of White youth ages 10 to 24 died from suicide and drug overdose than African American or Hispanics in that age range.[107,108]

Rates of adolescent substance misuse and suicide differ by socioeconomic status, education, and rural versus urban residence.

- Lower parental education has been associated with increased adolescent use of prescription drugs, as well as concurrent use of multiple substances.[109]
- Recent studies show that adolescents with lower socioeconomic status are more likely to engage in frequent binge drinking.[110]

There are many potential reasons for these links. Teens and parents who did not receive a high-quality education do not have the same opportunities to gain social and emotional skills or knowledge about substance use risks. They face increasing economic and employment challenges—which influence where they live and the quality of schools, neighborhood resources, and health care available to them—that contribute to psychological stress.[111,112]

Inequality affects substance use and suicide rates, too, likely because of the psychological consequences. Lower perceived social standing relative to peers at school is associated with increased substance misuse.[113] Income inequality has been found to predict a higher risk of dying from suicide.[114,115] For two individuals with the same income but living in different counties, the one who lives in the wealthier county (and thus experiences greater income inequality) is 4.5 percent more likely to die by suicide.[116]

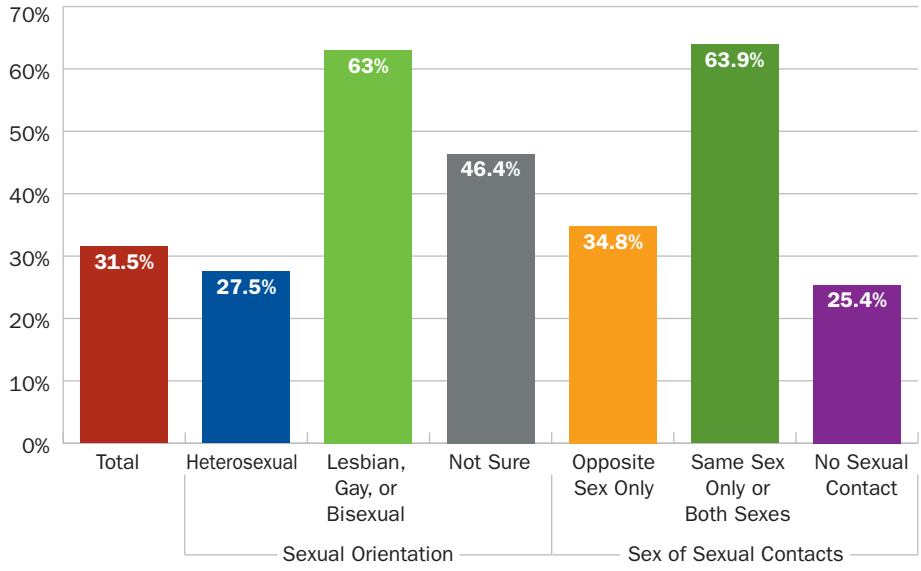
- Rural adolescents are more likely than urban adolescents to misuse prescription pain relievers and more likely to obtain the pills they misuse directly from physicians.[117]
- From 1996 to 2010, a higher percentage of rural 10- to 24-year-olds died from suicide than their urban peers, and rural-urban disparities in youth suicides have increased over time.[118]

One factor contributing to these disparities is access to firearms—in a study of more than 6,000 suicides between 2003 and 2015 in Maryland, the suicide rate by firearm was 66 percent higher in rural than in urban areas. Overall, the rate of suicides was 50 percent higher in rural than in urban areas, but when researchers took firearms out of the equation, suicide rates in rural and urban areas were comparable.[119] Isolation, high unemployment and poverty, fewer opportunities for high-quality education, and less access to health care in rural areas may also contribute to these rural-urban disparities. In particular, prevention programs and substance use treatment services may be spread sparsely over large rural geographic areas and thus less readily available.[120]

Poor mental health is a significant risk factor for both substance use and suicide—and trends appear to be worsening, especially among sexual minorities and girls. Individuals with a substance use disorder often also suffer from mental illness. Substance use and a known mental health condition are two key risk factors for suicide.[121]

- In 2017, 13 percent of 12- to 17-year-olds (3.2 million adolescents) had a major depressive episode (MDE) in the past year, up from 8.8 percent in 2005.[122]
- One-third of adolescents with a substance use disorder in 2017 also had an MDE.[123]
- Illicit drug use was nearly twice as high among those with an MDE in the past year in 2017.[124]
- Among high schoolers, the prevalence of having felt sad or hopeless daily for two or more weeks in a row increased from 26.1 percent in 2009 to 31.5 percent in 2017. Prevalence was substantially higher among gay, lesbian, and bisexual students (63 percent) than heterosexual students (28 percent) and higher among females (41 percent) than males (21 percent) (see Figure 9).[125]

Figure 9: Percentage of high school students who experience persistent feelings of sadness or hopelessness by sexual identity and sex of sexual contacts
(Youth Risk Behavior Survey, 2017)[126]



Oleg Elkov

Adolescents involved in the juvenile justice system have higher rates of substance use and suicide.

Not only do adolescents in the juvenile justice system have higher rates of risk factors for suicide and substance use—including mental health issues, trauma, and stressful life events—being in juvenile detention itself is highly stressful and characterized by environmental and social conditions that may increase the risk of substance use and suicide.[127]

- Seven out of 10 youth in the juvenile justice system have a mental health disorder.[128]
- Among youth in the juvenile justice system, 77 percent reported substance use in the previous six months, and nearly half had a substance use disorder.[129,130,131]
- The suicide rate among youth involved in the juvenile justice system is two to three times higher than that of the general youth population.[132,133]
- According to a 2004 report, although 1.9 million out of 2.4 million juvenile arrests involved substance use, only 68,600 juveniles received substance use treatment.[134]

Homeless youth are also at higher risk for substance misuse and suicide.

- Homeless youth are at higher risk for depression[135] and suicidal ideation.[136]
- Homeless youth have two to three times higher rates of substance use overall and three to five times higher rates of cocaine and amphetamine use.[137]
- Homeless youth are at higher risk of being victimized at school.[138]

Youth involved in child welfare and foster care are at higher risk for substance misuse and suicide.

- Adolescents involved in child welfare were 1.5 times more likely to experience suicidal ideation compared with adolescents from public high schools in 2013.[139]
- Teens with prior out-of-home placement had more than twice the odds of reporting substance use/misuse.[140]
- Half of children who are involved in the child welfare system have a diagnosable mental health disorder.[141]

The factors that can contribute to homelessness or involvement in the welfare system—such as family conflict including abuse or neglect and history of substance use or mental health problems—can contribute to this higher risk.[142,143,144] In addition, these youth often face additional stressors that exacerbate their risk—such as abuse and victimization among homeless and runaway youth living on the streets,[145] separation from families, maltreatment in care, and frequent moves among children in foster care.[146]

Military-related adolescents (those with a parent or sibling serving in the military) are more likely to experience suicidal thoughts and depressive symptoms.

- Adolescents with a parent or sibling in the military are more likely to experience depressive symptoms.[147]
- Adolescents reporting two or more family-member deployments are 34 percent more likely to have suicidal thoughts than those with no deployment experience.[148]

Potential reasons include separation from family members during regular deployments, frequent moves, and family members returning with post-traumatic stress or traumatic brain injuries.[149]

The intersectionality[b] of these high-risk groups can produce even greater inequities.[150]

- Among sexual minority youths in 2005 and 2007, Latino and Native American/Pacific Islander youth were 50 and 66 percent more likely, respectively, to attempt suicide than Whites.[151]
- LGB homeless youth were twice as likely to attempt suicide as heterosexual homeless youth in 2004.[152]
- Substance use is significantly higher within some subpopulations of LGB youth (340 percent higher for bisexual youth, 400 percent higher for females).[153]
- Substance use and suicide disparities have worsened over time for these female and bisexual youth, even as there have been improvements in disparities among male gay youth.[154,155,156]

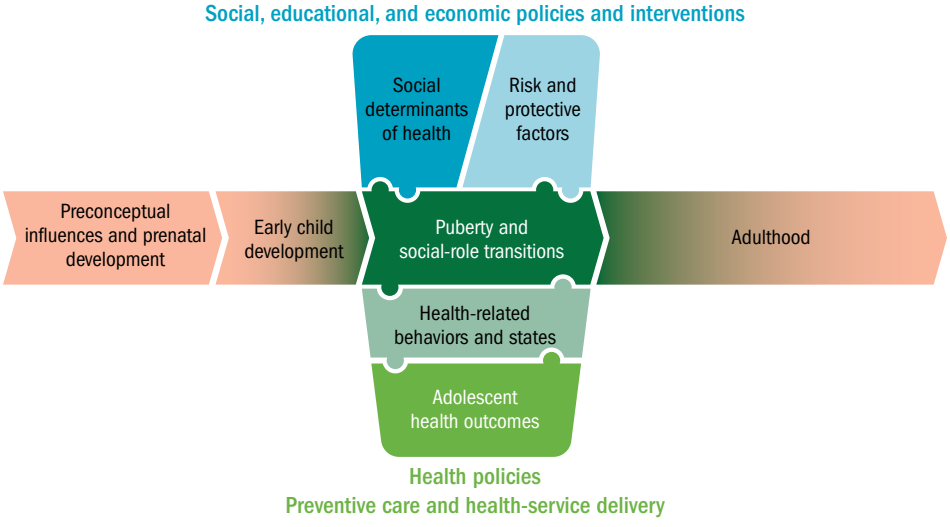
b Intersectionality refers to "the ways in which race, gender, class, sexual orientation, disability, and other axes of inequality constitute intersecting systems of oppression."

We Can Prevent Substance Use Before it Starts and Promote Mental Health Before Problems Develop.

Where one is born, lives, learns, plays, and worships can have profound effects on health and well-being. These conditions, known as the social determinants of health, contribute to inequities in health outcomes, including adolescent substance use and suicide. We know that social determinants, including supportive family relationships, stable housing, quality of schools, and safe neighborhoods, promote health, whereas other social determinants, such as poverty and racism, can have a negative effect on health.

In addition to these social, economic, and environmental conditions, there are risk and protective factors that can help predict whether a young person will experience an outcome like substance misuse or suicide. Risk factors increase an adolescent's chances of experiencing negative outcomes and include things like abusive family relationships; poor parenting behaviors; academic failure; and attitudes, community norms, or laws that are favorable to risky behaviors like substance misuse. Protective factors serve as a buffer, reducing an adolescent's chances for negative outcomes and include positive parenting, opportunities for positive social involvement, social and emotional competence, positive self-image, and belief in oneself (see Figure 10).

Figure 10: Effects of policies, risk/protective factors, developmental transitions, and behaviors across the life course[157]



Risk and protective factors co-occur, and the combination of these factors contributes to the likelihood of experiencing a particular outcome. While seemingly opposing terms, risk and protective factors do not necessarily operate on opposite ends of a single spectrum. Having a protective factor does not eliminate the possibility of also having a related risk factor. Rather, the presence of one or more protective factors helps buffer against or reduce the harmful effects of co-occurring risk factors. For example, an individual can have an abusive parental relationship (risk factor) and simultaneously have a positive relationship with another caring adult in their life (protective factor). Given their seeming dichotomy, there is a tendency to label risk and protective factors as either positive or negative. However, each factor is contextual. What serves as protective factor for one adolescent may act as a risk factor for another.

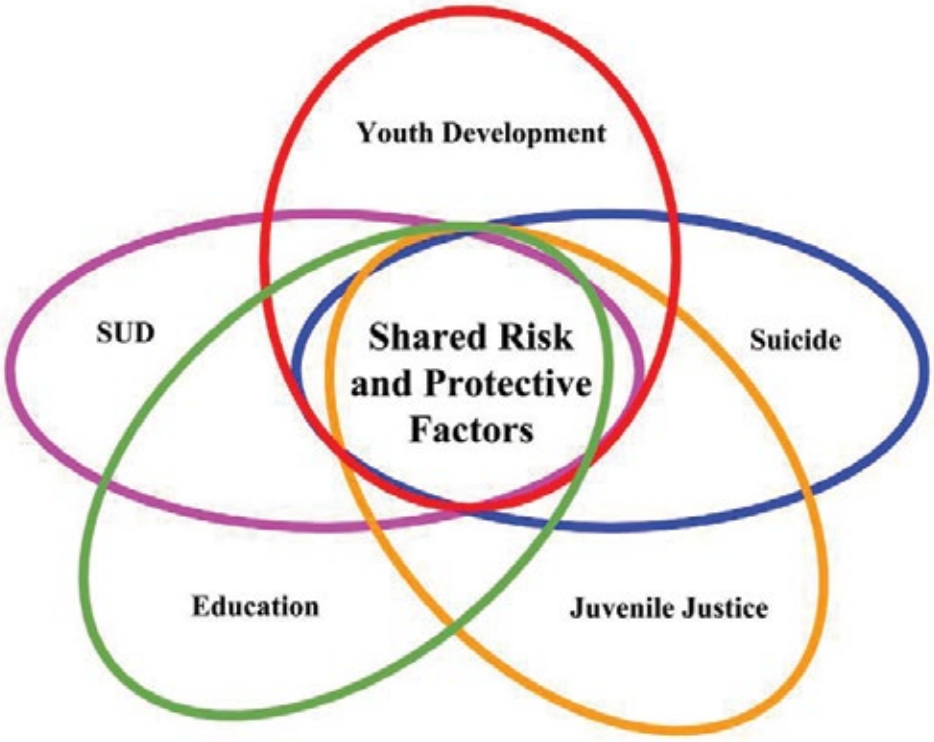
Supportive interventions can reduce the impact of some social determinants and risk factors, like an individual's poor academic performance or poor parenting behaviors; the broader impact of others, like systemic racism and poverty, are not as easily impacted but can be and should be addressed. For this reason, **approaches to improve adolescent outcomes should not focus exclusively on reducing risk factors; rather, an asset-based approach—one that emphasizes bolstering protective factors—is needed.**

There are shared risk and protective factors for multiple outcomes across various sectors. The risk and protective factors for suicide and substance misuse, for example, have significant overlap. And there are common risk and protective factors for outcomes like substance use and suicide, dropping out of high school, or being involved in the juvenile justice system. In fact, risk and protective factors for mental, emotional, and behavioral disorders in adolescence reveal significant overlap with outcomes from other youth-serving sectors—such as the juvenile justice, education, child welfare, and youth-development sectors (see Figure 12).[159,160,161]

The convergence of risk factors can help to determine an adolescent's risk for substance misuse and suicide.

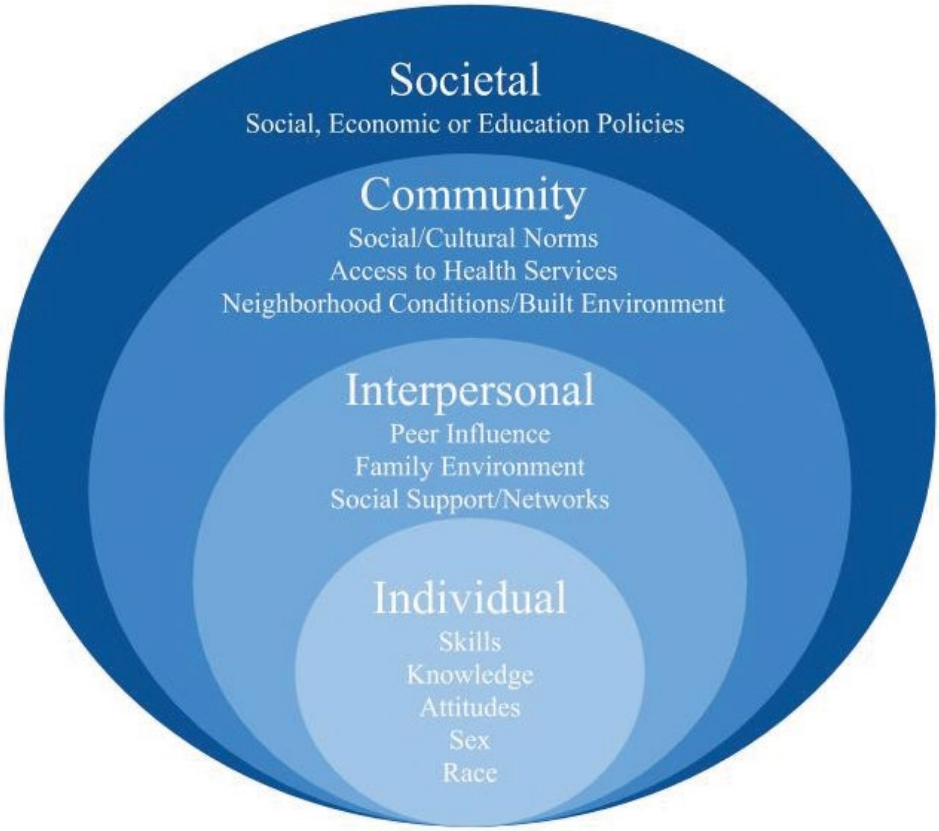
We must examine risk and protective factors from an intersectional perspective that considers how different risk and protective factors combine to create a certain level of risk. In general, the more risk factors for substance misuse and suicide an individual has, the greater their risk for experiencing a negative outcome (and vice versa for protective factors). Those experiencing some risk factors are often at greater risk of experiencing more risk factors.[162] However, risk factors do not always interact in an additive way; and the interactions among risk and protective factors becomes more complex as more factors are considered in combination.[163]

Figure 12: Shared risk and protective factors across sectors



Understanding the overlap between these cross-sector factors and conditions is crucial to reducing the chance of substance misuse or suicide over a person's lifetime. The social ecological framework—organized in four levels (individual, interpersonal, community, and societal)—is a useful model for integrating this multipronged approach. To reduce adolescent substance use and suicide (and address many other adolescent outcomes), we must reduce risk factors and enhance protective factors at the individual, interpersonal, and community levels while simultaneously tackling the policies and systems that operate at the community and societal levels that impact outcomes (see Figure 13). Influences at all these levels constantly interact with one another,[164] and given the developing nature of the adolescent brain, this means that influences and interventions during adolescence—both positive and negative—can alter developmental trajectories in the long term.[165]

Figure 13: Social ecological framework with examples



One critical influence for adolescents is their families, who shape their environment and life in many ways. These families, in turn, live in the broader context of societal policies and community environment and norms. These policies and systems shape risk and protective factors, health outcomes, and inequities at the individual, family, and neighborhood level. For instance, policies that disadvantage communities of color, along with bias and racism, have contributed to minority youth being more likely to live in segregated, isolated neighborhoods with concentrated poverty, high unemployment, low-quality schools, substandard housing, and poor health conditions.[166] A range of other influences at the individual, community, and population levels can contribute to disparities among adolescents with respect to substance misuse and suicide and related risk and protective factors. These conditions increase the risk of adolescents engaging in substance misuse or experiencing poor mental health.[167] Protective factors can also cluster in other communities where there are good schools, playing fields, mentoring programs, and opportunities for youth leadership.

Children and families also live within the context of societal norms and social systems, including social media. Public views about what society values include, in addition to honesty and morality, a focus on professional and financial success and physical attractiveness (especially for women).[168] These societal norms have a big influence on adolescents.

SECTION 3:

Cross-Sector Strategies to Prevent Adolescent Substance Misuse and Suicide

What Works to Decrease Risks and Build Protective Factors: Cross-Sector Strategies

Reducing adolescent substance misuse, suicide, and other negative outcomes will require an integrated, multi-sector approach grounded in prevention.

The cross-sector and interactive nature of risk and protective factors underscores the importance of multiple sectors collaborating to promote adolescent well-being—including the education, health, justice, youth development, and child welfare sectors. Adolescents, like other populations, do not live in a vacuum. Rather, they—and their families—are constantly interacting with different youth-serving agencies and programs that could be better aligned for more efficient and effective well-being outcomes.

The following sections describe risk and protective factors for substance misuse and suicide that span each level of the social ecological framework. The factors are presented in an integrated, non-sector-specific manner to promote a collective, multisector approach to reducing risk and bolstering protective factors, based on what we know works.

BUILDING SOCIAL AND EMOTIONAL SKILLS

Adolescence is a period of active social and emotional development.[169] As adolescents expand their social circles and social roles, they also shape their key social and emotional skills.[170] Examples of social and emotional skills include emotional regulation, impulse control, stress management, and positive relationship skills (see Figure 14). The environmental context surrounding an individual impacts social and emotional skill development—and in turn affects adolescent decision making.[171]

Figure 14: Social and emotional competencies wheel
(Collaborative for Academic, Social, and Emotional Learning)[172]

Social and emotional skills are key risk or protective factors for substance misuse and mental health disorders. **Adolescents with poor social, communication, and problem-solving skills are at increased risk for depression; and those with poor coping skills are at increased risk for substance misuse.**[173]

In contrast, studies closely link high levels of social and emotional skills to resiliency—or the ability to achieve or maintain positive outcomes in the face of adversity, such as poverty, discrimination, or trauma.[174] **Resilient adolescents are less likely to engage in risky behaviors—like substance misuse—and are better able to positively cope with stress.**[175]

WHAT WORKS

Universal promotion of social and emotional skills during adolescence positively affects all measures of adolescent well-being. While generally categorized as individual-level factors, social and emotional skills are highly interrelated with the other levels of the social ecological framework—providing multiple opportunities to promote social and emotional skills.[176]

Families, especially parents and caregivers, play a significant role in the development of social and emotional skills via positive parenting and mentoring. Constructive and positive parenting is a key to resilience building. Nurturing parenting can help children overcome stressors[177] and contribute to positive adjustments and behavioral control.[178]

Social and emotional learning programs (SEL) encourage the development of five core skills: (1) self-awareness, (2) self-management, (3) social awareness, (4) relationship skills, and (5) responsible decision-making. In addition to reducing negative behaviors, social and emotional programs can lead to improved educational attainment, employment, and earnings.[179] Effective SEL programs can be implemented in a variety of settings; however, they are most prominently featured in schools. Schools can promote social and emotional skill competencies by fostering supportive school climates and classrooms, adopting evidence-based SEL programs, elevating student voices, integrating SEL into instruction and student supports, ensuring that disciplinary policies promote SEL, and creating meaningful partnerships and two-way communication with families.[180]

SEL programs implemented in early and middle childhood often directly teach skills and provide opportunities to practice them throughout the school day. For adolescents—who strive to gain status and admiration from their peers, whom they value the most—the programs that target adolescent mind-sets, motivations, and climates, rather than direct skill rehearsal, are most effective.[181] These SEL programs, which are less skill driven and more grounded in the positive youth development approach, encourage authentic youth engagement, choice, and a greater orientation to adolescent values (peer acceptance, rather than parental acceptance).[182]

LifeSkills Training program, a three-year prevention curriculum for middle school students, promotes healthy alternatives to risky behaviors through activities that teach students the skills to resist peer pressure to smoke, drink, or use drugs; help students develop greater self-esteem and self-confidence; help students cope with anxiety; increase student knowledge of the consequences of substance misuse; and enhance decision-making and problem-solving skills.[183] Evaluations over the past 20 years have found the program reduces the prevalence of tobacco, alcohol, and illicit drug use by 50 to 87 percent, and when combined with booster sessions, reduces long-term substance misuse by as much as 66 percent, with effects lasting beyond the high school years.[184] According to a Washington State Institute for Public Policy cost-benefit analysis, every dollar invested in LifeSkills Training returns $7.88 in societal benefits.

Positive Behavioral Interventions and Supports (PBIS) models rely on positive approaches to student misbehavior and allow for flexibility in the design of school interventions based on a school's needs and resources. Implementing PBIS involves explicitly prompting, modeling, practicing, and encouraging positive social skills to improve the social, emotional, and behavioral competence of students and ultimately promote positive, predictable, and safe school environments that foster strong interpersonal relationships.[185] Research indicates the PBIS approach contributes to reduced problem behavior, decreased bullying, less illegal substance use, and increased graduation rates.[186] According to a Washington State Institute for Public Policy cost-benefit analysis, for every dollar spent on PBIS, there is a return of $13.61 in societal benefits.[187] The U.S. Department of Education's Office of Special Education Programs and the Office of Elementary and Secondary Education fund the Technical Assistance Center on PBIS, which supports school districts and state education agencies implementing PBIS.

WHERE IT'S WORKING

Family Check Up offers parents simple, practical parenting skills, helping parents address the challenges of parenting before problems develop. Family Check Up has been shown to reduce the risk for future youth substance use and to improve parental monitoring.[188] The program can be provided in community mental health, primary care, and school settings.[189]

Oregon Health Plan offers Family Check Up to its members with children ages 2 to 18 through a collaboration with Lane County Prevention (public health), Trillium Community Health Plan, and Family Mediation Services, a division of Lane County Health and Human Services. Trillium provided funding to train and support staff as part of their commitment to prevention. They set aside $1.33 for every Oregon Health Plan member in order to fund prevention programs for a total investment of $6 million since 2012. Parents or guardians attend a series of three appointments with a mediator from Lane County Mediation, sharing information about the challenges they face—like unstable housing, family conflict, or income loss—and identifying goals. The second appointment includes a videotaped session for parents to work on age-appropriate tasks with their children, which improves their relationships, and to learn to set healthy limits. At the third appointment, parents meet with staff to review the video and to identify strengths and areas for improvement. Among participants, 99 percent reported that the program helped them see their strengths as parents, and 91 percent said the program gave them realistic ideas for making changes in their families.[190]

PROMOTING CONNECTEDNESS AND PROVIDING SOCIAL SUPPORT

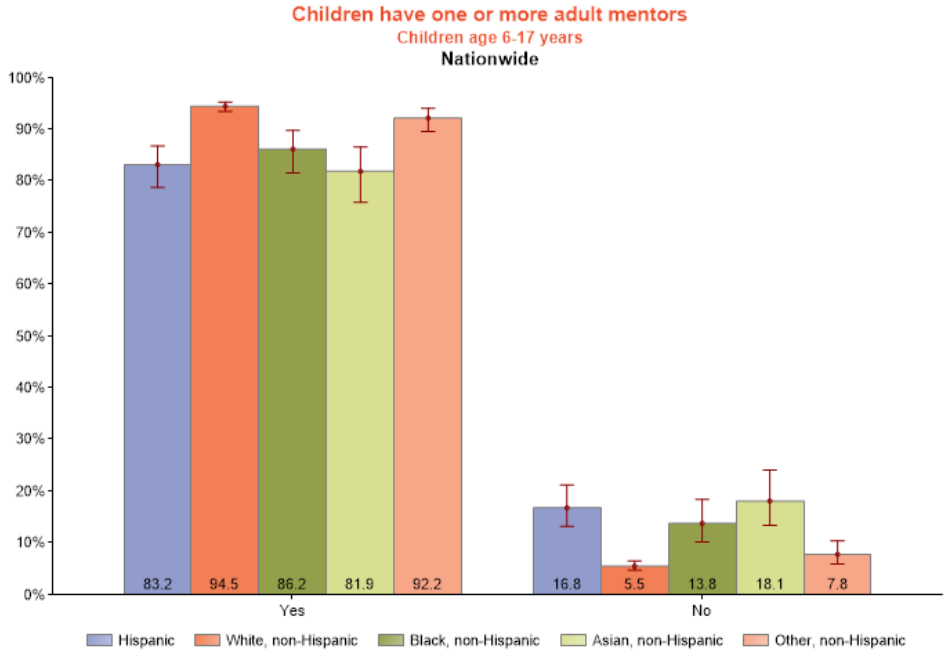
Adolescents experience shifting relationships with their peers, school, family, and community as they develop new social roles and identities. Their feelings of connectedness, defined by their sense of caring, support, and belonging, can impact their risks for substance misuse or suicide.[191] **Feeling more connected to schools and families during adolescence has been shown to improve mental health and reduce substance misuse in later life.** Adolescents who felt more connected to their schools and communities had a 65 percent lower risk of lifetime prescription drug misuse and other illicit drug use.[192]

Like social and emotional skills, connectedness spans multiple levels of the social ecological framework—from peer to family and from school to community. Social connectedness includes relationships with other groups and individuals, like peers, families, or caring adults in an adolescent's life. Connectedness can also include relationships with larger structures—like schools or communities. School connectedness refers to the degree to which an adolescent feels supported by the adults and peers in their school—including a belief that these groups care for not only their learning, but also their broader well-being.[193] Community connectedness encompasses broader elements, such as social cohesion, collective efficacy, social capital, and social support—including the ability to share resources between community members.[194]

Parent-child connectedness increases self-esteem and decreases depression[195] and suicidality.[196] The presence of caregivers who monitor adolescent behaviors and set clear expectations is associated with decreased risk of substance misuse, as well as decreased risk for dropping out of school.[197] Perceptions of low family support, in contrast, are related to greater levels of hopelessness, depressive symptoms, suicidal ideation,[198] suicidal attempts, low self-esteem,[199] greater externalizing behavior problems, and alcohol and substance use.[200]

Adolescents who have at least one positive adult mentor are less likely to experience substance misuse or suicide—as well as other poor adolescent outcomes. Adolescents who have positive relationships with adults outside their families, such as teachers, administrators, coaches, and mentors are less likely to be depressed or use alcohol or drugs.[201,202] The presence of at least one positive relationship with a caring adult is also linked to increased school attendance, academic achievement and engagement, heightened psychosocial functioning, improved capacity to navigate peer relationships and friendships, greater peer acceptance, and improved employment outcomes.[203,204] According to data from the National Survey of Children's Health, 89 percent of 12- to 17-year-olds have at least one adult mentor, while 11 percent do not.[205] Notably, children from minority racial/ethnic backgrounds are much less likely to have an adult mentor (see Figure 15).[206]

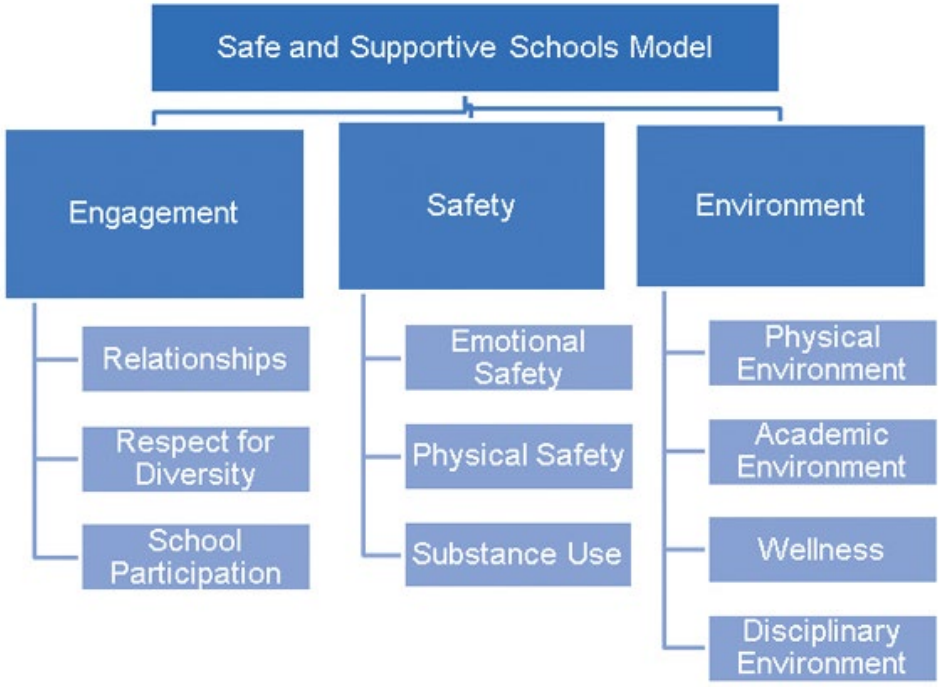
Figure 15: Children ages 6 to 17 who have one or more adult mentors, by race/ethnicity (National Survey of Children's Health, 2017)[207]



During adolescence, teens begin to spend more time with peers, rather than with their families—making peers a critical source of social support and influence.[208] Teens who perceive their peers as supportive report fewer school-related and psychological problems and less loneliness.[209] A high level of social support from friends has also been shown to protect against suicidality among highly depressed high school adolescents.[210] Peers can also contribute to increased risk factors. Antisocial peer behavior and peer approval of delinquent behaviors is associated with increased risk for juvenile delinquency, substance use, and other problematic and antisocial behaviors.[211]

Schools are key environments that contribute to a sense of connectedness and impact risk and protective factors for substance misuse and suicide.[212] Safe and supportive learning environments prioritize student engagement and connectedness, safety, and a healthy environment (see Figure 16). A positive school climate can help adolescents develop a sense of belonging and participate in meaningful engagement within their community.[213] Creating a positive school environment can moderate against many of the risk factors for substance misuse or suicide and can contribute to improved outcomes, such as higher academic achievement and engagement and social-emotional health, as well as lower absenteeism, fewer suspensions and expulsions, lower levels of substance use, less engagement in deviant behaviors, and fewer dropouts.[214,215]

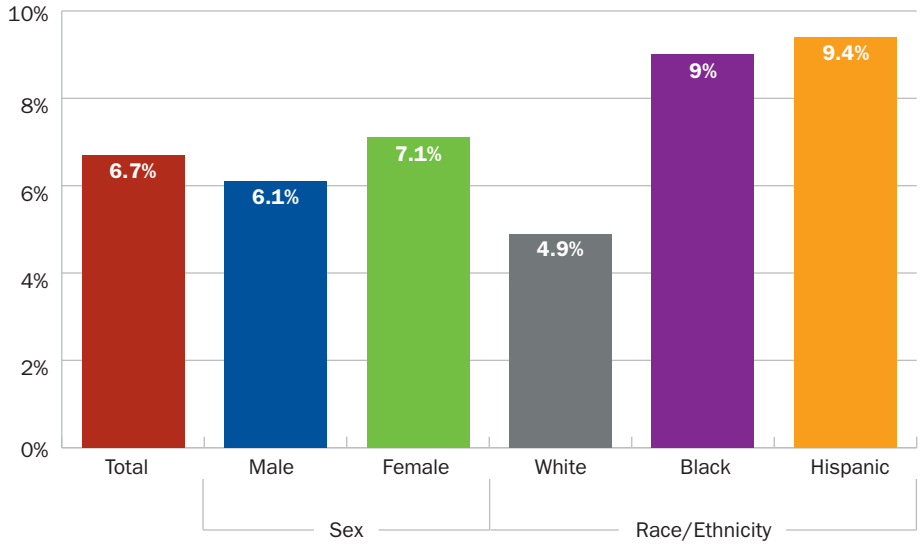
Figure 16: Safe and supportive school model
(National Center on Safe Supportive Learning Environments)[216]



School connectedness is a key component of a positive school climate.[217] School connectedness can decrease student loneliness and depression,[218] reduce delinquent behaviors,[219] and is associated with less risky behaviors, such as alcohol, tobacco, or marijuana use.[220] According to one study, teens with low school connectedness, even those with good social connectedness, were at elevated risk of anxiety/depressive symptoms as well as regular smoking, drinking, and using marijuana in later years.[221] Adolescents who reported higher teacher support and regard for student perspectives in their high school years were also more likely to see their schools as having respectful climates and healthy norms of drug use, which was associated with lower levels of personal drug use.[222]

School connectedness is particularly important for young people who are at increased risk for feeling alienated or isolated from others.[223] For example, among LGB students, high levels of school connectedness are associated with less suicidal ideation.[224] There are significant racial/ethnic disparities in school environments, with a higher percentage of black and Hispanic students—compared with white students—missing school because of safety concerns (see Figure 17).

Figure 17: Percentage of high school students who did not go to school due to safety concerns (Youth Risk Behavior Survey, 2017)[225]



Community connectedness provides a buffer against other risk factors—such as isolation and peer influence—and can help bolster parental and familial supports. Connectedness of adolescents and their families to community organizations can increase the sense of belonging as well as social and material support and collective mobilization among the broader community. Connectedness among community organizations and institutions helps assure that adolescents and their families can access needed resources and helps communities better leverage the social and political will to prevent substance misuse and suicide.[226]

Greater community connectedness also provides adolescents with coping resources outside their home, including having additional adults to talk with, people to provide aid in times of need, and feelings of protection.[227] These protective factors may guard against depression.[228] Adolescents who live in an environment with more community connectedness were less likely to engage in alcohol, marijuana, and cigarette use even when they associated with peers who engaged in risk behaviors or had parents whom they felt did not support or care for them.[229] However, over 40 percent of 12- to 17-year-olds do not live in a supportive neighborhood (as assessed by asking parents whether people in their neighborhood help each other, watch out for each other's children, and know where to go for help in the community).[230]

WHAT WORKS

Strategies that build positive connections and sources of social support across youth-serving systems are critical to fostering adolescent resilience. Each sector has a role in building these systems of support—for example, through mentorship, development of a positive school climate, developing youth-led initiatives, or introduction of positive parenting practices.

Policies and programs designed to promote a positive school climate create the conditions for connectedness by building the social and emotional competence of each member of the school community, both individually and collectively.[231] Creating a culture of connectedness through character education integrated throughout the school day can reduce bullying and violence and improve attendance and positive social behaviors.[232] Supportive school personnel, inclusive school environments, and curricula that reflect the realities of a diverse student body can also help gender or sexual minority students, homeless students, and students with disabilities become more connected to their school.[233]

In contrast, studies show punitive school disciplinary policies, such as expulsions or out-of-school suspensions, negatively affect school climate and contribute to lower academic achievement, increased risk for dropout, involvement in the juvenile justice system, and incarceration in adulthood.[234,235]

Mentoring—with appropriate training—in juvenile justice settings and community-based programs such as after-school settings and faith-based programs and clubs can also enhance connectedness for adolescents.

Building broader community-level connectedness—including social cohesion, collective efficacy, social capital, and social support—is also important as it provides adolescents with additional adults to talk to who can lend aid in times of need, enhancing adolescents' feelings of protection and guarding against depression and problem behaviors.[236,237,238]

Gay-straight alliances, school-based organizations for LGBTQ youth and their allies, are associated with lower levels of victimization of LGBTQ youth.[239]

Guiding Good Choices teaches parents of middle schoolers to strengthen bonding in their families through age-appropriate opportunities for family interaction, expressions of positive feelings, and adoption of family conflict-management approaches. The program also guides parents in setting clear expectations and applying discipline, as well as teaching their children coping strategies. The program also successfully inhibits alcohol and marijuana use among middle schoolers.[240]

WHAT WORKS

Strengthening Families Programs (SFP) are family skills-training programs designed to improve children's behavioral health by strengthening bonds between parents and children.[241] These programs comprise three types of sessions: parenting sessions, children's life-skills sessions, and family sessions. The parenting sessions teach parents how to interact positively with children, such as showing enthusiasm and praising children for positive behaviors. Parents also learn the importance of reducing criticism and sarcasm and how to discipline effectively.[242] In children's life-skills sessions, teens are taught how to regulate their emotions and improve their communication and problem-solving skills.[243] The program also teaches pro-social behaviors, such as how to resist peer pressure and make friends without engaging in alcohol and drug use.[244] To improve their family connections, they learn how to apologize and the importance of participating in family meetings. After working through their skills individually, parents and children come together in family sessions, where they practice the skills they learned.

Research has shown that SFP is successful in improving adolescent behavioral health, including reducing in the risk of initiating cigarette and marijuana use,[245] delaying the onset of adolescent substance use and behavioral problems in school,[246] and reducing involvement with law enforcement.[247] The program is also cost-effective: SFP targeted to 10- to 14-year-olds has a return of $9.60 for every dollar spent.[248] SFP was tested and found effective in multiple settings, including homes, schools, clinics, homeless shelters, juvenile courts, and detention centers.[249] SFP has been successively adapted to multiple races and ethnic groups, including Black, Latino, and American Indian families.[250]

The Division of Adolescent and School Health (DASH) at the Centers for Disease Control and Prevention (CDC) provides funding to 28 local education agencies (school districts) to build infrastructure in schools to promote safe and supportive learning environments. The DASH funding supports staff who implement evidence-based programs in schools, including:

- Professional development on classroom management (e.g., how to reinforce positive behaviors through praise and how to establish rules, routines, and expectations) to foster calm and predictable classroom environments that support academic learning and reduce opportunities for bullying or other disruptive behaviors;
- Mentoring, service learning, and/or other positive youth-development programs for students in the school or community;
- Student-led clubs to support LGBT youth (often known as gay-straight alliances or genders and sexualities alliances) that create a safe space for students to socialize, support each other, and connect with supportive school staff; and
- Providing parents and families with resources that support positive parenting practices such as open, honest communication and parental supervision.

School districts that received funding and more thoroughly implemented school-connectedness activities in middle schools and high schools saw significant declines in high-risk substance use, mental health issues, and suicide among students.[251]

WHERE IT'S WORKING

Reintegration and support programs for those leaving correctional facilities—including help transitioning to community-based treatment and recovery support, family counseling, and job training—will increase the likelihood of a positive reentry to the family and will reestablish systems of connectedness and social support. **The Boston Reentry Initiative** targets high-risk, male, adolescent and young adult offenders and involves a case manager/mentor working with the offender prior to and during release (to develop a detailed reentry plan, reach out to the offender's family to ensure housing and familial accountability are established, and make sure each offender is receiving all government benefits he is eligible for) as well as 12 to 18 months post-release to help them meet the education, treatment, family, and other goals of their reentry plan.

SOCIAL MEDIA & CONNECTION

Social media has become the dominant social environment for adolescents—and may act as both a risk and protective factor. In terms of risk, 34 percent of high schoolers are cyberbullied, and 80 percent of students who are cyberbullied are also bullied at school.[252] Students who experience bullying and cyberbullying have lower self-esteem, depression, anxiety, family problems, academic difficulties, delinquency, school violence, and suicidal thoughts and attempts.[253] The around-the-clock availability of harmful posts, the global audience,[254,255] and the anonymity of perpetrators[256] all intensify victimization.

Online social comparison also escalates adolescent depression. Teen users of social media, especially those who follow strangers, are exposed to images of others' idealized lifestyles. They tend to believe that others lead better lives. As a result, they may develop low self-image and become depressed.[257] Recent data also suggest that teens and young adults with depressive symptoms are more likely to have certain negative experiences on social media, including feeling like others are doing better than they are, feeling left out, and getting negative comments.[258] Social media platforms further exacerbate suicidal tendencies by bringing at-risk individuals together through chat rooms and forums. Their interactions can enhance suicidal ideation and promote suicide pacts.[259]

On the other hand, social media enables teens to find peer support that would otherwise not be available. This appears to be even more salient for youth with depressive symptoms, who are more likely than those without such symptoms to say that social media is very important to them for feeling less alone, getting inspiration from others, and expressing themselves creatively (see Figure 18).[260]

In addition to serving as a source of positive and negative interactions with peers, social media is a source of both helpful and unhelpful or inaccurate health information. Research suggests social media has further popularized substance use. Alcohol and tobacco companies are using profiles created by platforms to directly advertise to youth.[262] Some companies avoid regulations by tapping digital influencers (i.e., social media users with large reach and established credibility in a specific topic area) in promotions that can easily go viral,[263] and thus significantly influence adolescents.

On the other hand, the vast majority of 14- to 22-year-olds (87 percent) have gone online to access accurate health information, and youth with depressive symptoms are even more likely to use digital tools to learn about and help address their problems (see Figure 19).[264]

Figure 18: Percent of 14- to 22-year-old social media users who say social media is "very" important to them (Hopelab and Well Being Trust)[261]

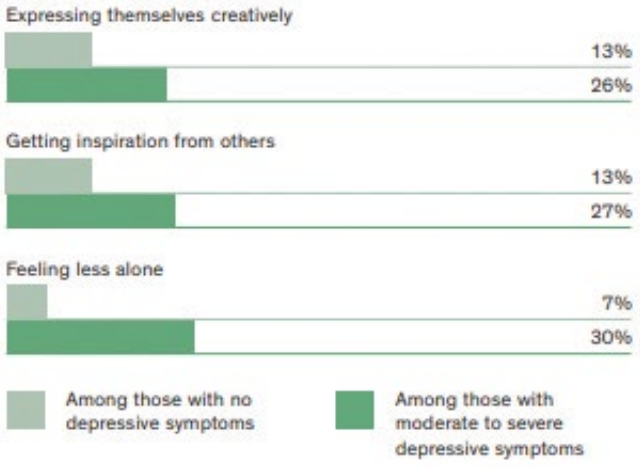
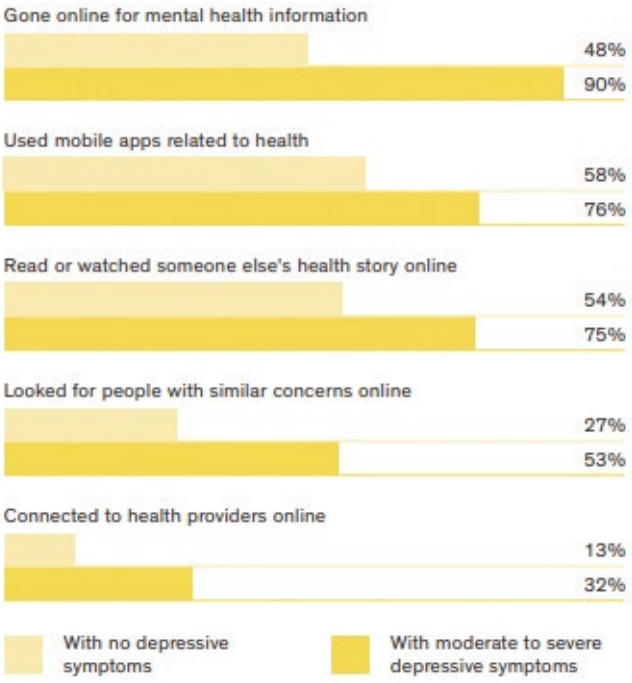


Figure 19: Reported use of online health resources, by depressive symptoms for 14- to 22-year-olds (Hopelab and Well Being Trust)[265]



ENGAGING YOUTH VOICE

Without authentic youth engagement in the planning and evaluation of programs, resources are often ineffectively allocated and can alienate the intended audience.[266,267] Youth can provide firsthand accounts of a program's effectiveness and uptake among their peers and provide vital ethnically and culturally informed perspectives.[268] Incorporating youth perspective can also ensure that youth programs use relevant messaging, outreach, and data-gathering techniques.[269]

Youth engagement is a protective factor against suicide ideation and suicide risk and is linked to lower rates of depressed moods.[270,271,272] Youth engagement promotes resilience by building on young people's energy, enthusiasm, and creativity.[273,274] Youth who are civically engaged have increased self-esteem and are much less likely to engage in risky behaviors.[275]

WHAT WORKS

Authentic and meaningful youth engagement boosts protective factors. Schools and other youth-serving systems should adopt a positive youth-development approach that includes strategies like infusing character education throughout the day, elevating and empowering youth voice, and enhancing youth participation in decision-making.

Youth-Led Participatory Action Research (YPAR) is a program that trains youth to conduct systematic research to improve the structures and institutions intended to serve them. Initiatives like YPAR have a demonstrated effect on promoting adolescent protective factors.[276] Students who participate in YPAR have increased social networks, self-confidence, and self-esteem, as well as improved self-respect, community awareness, and self-efficacy.[277,278,279,280]

YOUTH VOICES

Maelah Robinson-Castillo is a senior at Centennial High School in Pueblo, Colorado. She is active in many youth-engagement projects, including the Youth Partnership for Health Advisory Board, the Rise Above Colorado Teen Action Council and the Youth Engagement Strategies and Support Initiative.

"Teen voices are powerful, and they do matter," Maelah says. She advises adults not to make assumptions about who teens are or what they need. Instead communities should create opportunities to make youth voices heard. She advises communities to create environments in which students feel that they can have "equal relationships with school and community officials and opportunities to share their opinions."

Maelah worries about the social pressures on her peer group and if most teens can manage them. "Many kids don't know how to care for themselves," she says, "how to love who they are." She cautions adults to realize that the social pressures on teenagers today are very different than those that existed in the 1980s and 1990s. The advent and saturation of social media is a big part of that difference, and it has both good and bad effects, according to Maelah. Interacting with friends on social media has in many instances replaced interacting with people face to face. That is good in some ways, bad in others, Maelah says.

Maelah has the following advice for anyone designing a program to help young people stay on a positive pathway and away from alcohol and drugs:

- Start early—younger kids copy what older kids are doing. Anti-vaping messaging for example should start in elementary school.
- Communicate to kids that it is okay to talk about their emotions, particularly difficult emotions. Teens need help identifying and coping with their feelings.
- Use positive messaging instead of scare tactics. Tell stories of people who struggled with substance misuse but overcame it. If kids see themselves in these stories, they will be more effective. Make sure the stories are recent and about other teenagers.
- Create opportunities for students to strive for future opportunities, like college-bound programs and scholarship opportunities.

Maelah says that while she encourages her peers to talk to adults, "adults also need to know how to create good connections with the kids in their lives."

If Maelah were given an opportunity to create a program in her community to help kids build resilience and avoid alcohol and drug misuse, she would be sure to have youth input into program planning; train teachers to help kids avoid the pitfalls of substance misuse; create youth activities, recovery centers, and other resources to help kids stay on track; and establish buddy systems within schools—like juniors and seniors who mentor freshman and sophomores.

YOUTH VOICES

Isaiah Mays is a senior at Washington Latin Public Charter School in Washington, D.C. He is a community activist, and he has performed in dance, theater, and chorus. He also competes on his school's cross-country and wrestling teams and excels at math and science. He plans on studying biomedical engineering and dance in college.

Isaiah believes that many in his peer group have trouble finding people to talk to and often turn to social media to express their feelings but "tend to sugar coat what they are actually experiencing" when on social channels.

He's thankful for his supportive family and says that conversations about how you are feeling "should begin at home." "Comfort starts at home," he says, but school is also a place to reach lots of kids. Acting has been an important outlet for Isaiah: "My theater work has allowed me to feel freer and more confident."

He has seen the problems of alcohol and drug use entangle his own friends and acquaintances, including one close friend. "I think they were trying to fill something that was missing from their lives," he says. He believes that society glamorizes drug and alcohol use and that some kids use substances to feel better about themselves or to be popular.

Isaiah believes that data and facts about substance misuse won't influence kids. He thinks showing the impact of substance use disorders through personal stories would be the most powerful way to influence his peers. "It's easier for me to relate to a personal story than facts and figures," he says. He also advises youth programs to use social media, particularly video, to deliver their messages: "Use video to tell stories about the impact that drugs can have on a person's life."

Finally, he says, program directors should "keep talking to kids." Programs need their input if they are going to work.

James Aidala is a senior at Forest Hills Central High School in Grand Rapids, Michigan. He is active in debate; Model United Nations; the Forensics, Robotics and Science Olympiad; and the Mounds Rock and Mineral Club. He is also a member of the school band and started a political discussion club called PACE. After high school, James hopes to go to college to double major in geology and political science.

James believes the pressures that can lead to mental health issues affect everyone to differing degrees. He thinks that school pressures create anxiety for many of his peers. Those pressures and anxieties come from a mix of both internal and external factors. He sees some students who put a lot of pressure on themselves to succeed, maybe too much. "Pressure never makes anything better," he says.

When his peers are feeling pressured by school, he thinks it's helpful to talk to friends. "Just talking to each other helps," he says. He also thinks that counseling is a good idea for anyone who needs it.

James recognizes the ways in which a positive school environment can help students, especially students whose home situations might be difficult. "My school does a good job with that," he says.

James has mixed feelings about social media platforms. On the one hand, he says, they are a good way for people to stay in touch. But he also worries that because social media posts typically only show your friends and peers having fun and being happy, they might project a false impression of what your life should be: "Is social media suggesting that we all should be happy and having fun all the time? Is that realistic?"

ADDRESSING AND REDUCING TRAUMA, ADVERSE CHILDHOOD EXPERIENCES, AND DISCRIMINATION

Some adolescents enter this critical development period with a history of trauma or adverse childhood experiences (ACEs) that directly impact their risk for negative health outcomes. About half of teens ages 12 to 17 have experienced at least one ACE and about a quarter have experienced two or more ACEs.[281] ACEs include abuse (emotional, physical, or sexual), household dysfunction (intimate partner violence, household substance misuse or mental illness, parental separation or divorce, or incarcerated household member), and neglect (emotional or physical), as well as other adversities and traumas, such as homelessness, bullying, discrimination, income insecurity, and unsafe neighborhoods.[282]

ACEs differ greatly by race/ethnicity and income. Children in lower-income households are more likely to experience a greater number of ACEs (see Figure 20) and 32 percent of Black non-Hispanic children have experienced two or more ACEs compared with 18 percent of Hispanic children, 17 percent of White non-Hispanic children, and 6 percent of Asian non-Hispanic children (see Figure 21).[283]

Youth who experience more ACEs or trauma are at increased risk for substance misuse and suicide. ACEs have been shown to increase the likelihood of binge drinking, smoking, and using opioids.[286,287,288,289] In addition, the intensity and number of ACEs increase the likelihood of substance misuse, including initiating substance misuse earlier in life.[290,291,292] Adolescents with ACEs are three times as likely to become

Figure 20: ACEs among children ages 0 to 17 years, by household income
(National Survey of Children's Health, 2017)[284]

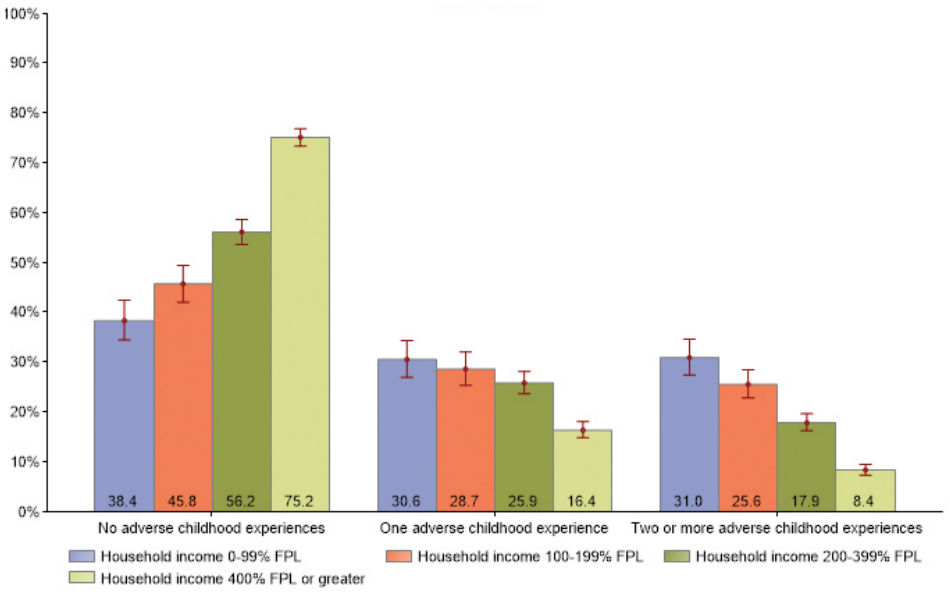
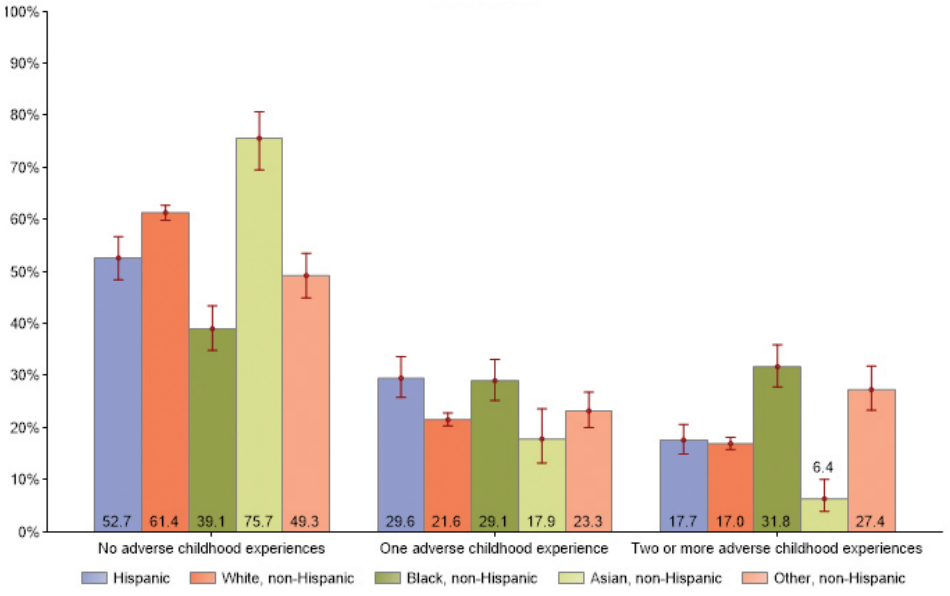


Figure 21: ACEs among children ages 0 to 17, by race/ethnicity
(National Survey of Children's Health, 2017)[285]



depressed or suicidal as those without ACEs, and in one study, 9th-graders with multiple ACEs were 22 times more likely—and 11th-graders 15 times more likely—to attempt suicide than their peers with no ACEs.[293,294]

The ACE created by parental substance misuse, in particular, increases the risk that children will misuse substances, often providing greater exposure and access to substances and leading to multigenerational cycles of substance misuse.[295,296,297]

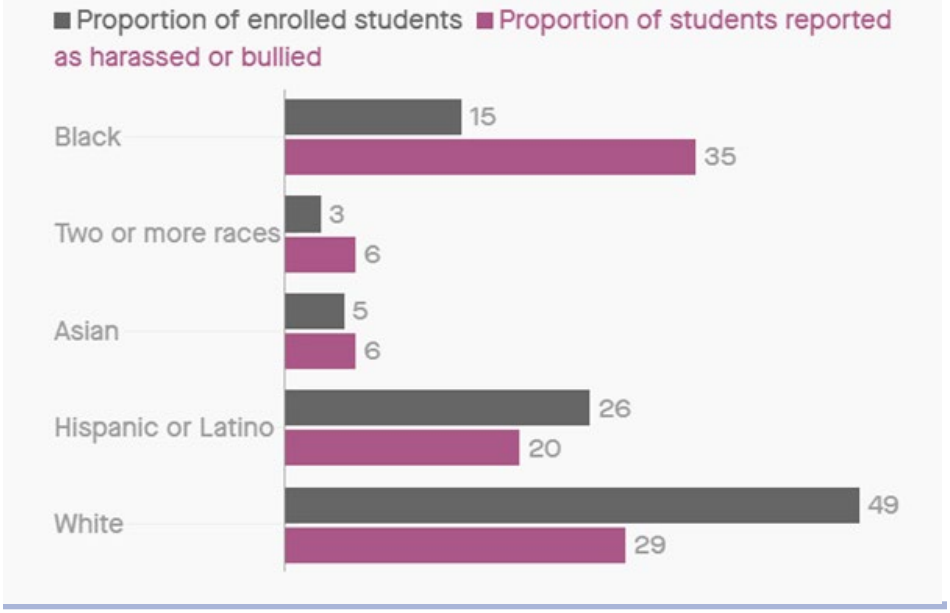
Youth with a history of trauma are also often more impulsive and more willing to take risks.[298] They tend to have poor mood regulation, are more socially disconnected, and have weakened responses to stress.[299] These emotional impacts increase the likelihood of depression and suicide and lower responsiveness to treatments, which in turn increases the likelihood of recurrences.[300,301] Weakened stress-coping abilities[302,303] often drive teens to turn to substance use as a coping mechanism.[304]

Experiences of trauma or ACEs correlate to other adolescent outcomes. Juvenile offenders are four times more likely to have experienced four or more ACEs than their peers; and youth at low-risk for juvenile criminal offenses are over 35 times more likely to report zero ACEs than those youth at high-risk.[305] Students with three or more ACEs are at increased risk for poor educational outcomes, including performing below grade level, being suspended and/or expelled, being labeled as needing special education, having poor attendance, and failing to graduate from high school.[306,307]

Racism, homophobia, and other forms of discrimination contribute to an increased risk for substance misuse and suicide among adolescents. Institutional racism in the United States—including the legacy of slavery, residential schools (for American Indian children), reservations, segregation, and internment camps—have long-term impacts on the employment, wealth, housing, education, and health of different racial/ethnic groups.[308] Systematic practices such as racial profiling by security and law enforcement workers and barriers to employment based on race also contribute to disparities in health and other outcomes.[309] The negative impacts are felt across generations and can increase the risk for substance misuse and suicide among minority youth through a number of pathways, including poorer social and environmental conditions and limited opportunities in the future.

Interpersonal bias and discrimination also put these adolescents at higher risk. Adolescents who experience discrimination are more likely to adopt avoidant coping strategies, such as substance misuse, to cope with the chronic stress created by discrimination.[310] Black students are disproportionately harassed or bullied compared with those of other racial backgrounds (see Figure 22).[311] Adolescents who report feeling discriminated against due to their race are at higher risk for heavy alcohol use, prescription drug misuse, and other illicit drug use, as well as increased risk of depression.[312,313,314] Stereotyping based on ethnicity has been linked to increased stress and poorer mental health among adolescents, particularly in school settings.[315]

Figure 22: Proportion of students harassed or bullied, by race, 2015-2016
(U.S. Department of Education, Office for Civil Rights, Civil Rights Data Collection)[316]



Bias and discrimination based on sexual or gender identity have also been associated with increased risk for substance misuse, suicide, victimization, and poor mental health among LGBT youth.[317,318,319] Compared with their heterosexual peers, LBGT high schoolers are significantly more likely to report being bullied at school (34 percent versus 19 percent) or online (28 percent versus 14 percent).[320]

Through a variety of mechanisms, poverty restricts opportunities for adolescents and contributes to increased risk for substance misuse and depression. Living in areas of concentrated poverty increases the likelihood of experiencing ACEs or trauma and is linked to negative academic, social, and behavioral problems.[321] Adolescents who experienced poverty in both childhood and adolescence are also more likely to miss and/or drop out of school and are less likely to receive preventive health care.[322] Intergenerational poverty can further limit access to equal opportunities for success—communities with high numbers of members experiencing intergenerational poverty often suffer from inadequate access to licensed child-care centers, limited employment among parents, and a greater percentage of children growing up in single-parent households, which often have fewer financial and other resources.[323]

WHAT WORKS

Adversity can stem from inequities in structures and policies rooted within each youth-serving sector; therefore, policy changes within a single sector alone will not address these inequities. While systemic and structural changes are necessary for eliminating disparities, these types of change take time to create results, making it imperative to simultaneously implement strategies that mitigate the negative impacts of existing inequities.

Enhancing parental engagement in child-serving systems and providing parents and families information about best parenting practices are effective strategies that studies show mitigate the negative effects of childhood trauma.[324]

Professional training for educators, health care workers, and other child-serving professionals can help prevent and improve responses to trauma, mental and behavioral health issues, bullying, and violence.[325] Professional development that reflects the complexity and sensitivity of trauma can contribute to the creation of a trauma-informed and trauma-responsive school climate. The shift to a trauma-informed system in a school setting can increase student engagement and attendance and decrease disciplinary office referrals, physical aggression, and suspension.[326] The trauma-informed approach is not a series of programs or trainings, but a systemic approach that must be embraced by every aspect of a school's operations and reflected in all staff-student interactions.

Developing cultural competence and responsiveness is also key to building individual and community resiliency. Cultural competencies are a set of behaviors, attitudes, and policies that enable educators, health care workers, and others who work in youth-serving settings to increase their awareness and sensitivity to issues of privilege, implicit bias, and micro-aggressions. For example, culturally competent schools help educators engage students and families by creating conditions where they feel a sense of belonging, support, respect, and safety.[327] Culturally competent teachers can apply their knowledge of diverse students to shift their instructional strategies to be more engaging and participatory, and they can use students' own cultural knowledge to engage them around new concepts, thus enabling them to make cultural connections and master new information.[328] Such approaches can address the social and emotional and learning needs of culturally and linguistically diverse students by creating learning environments where students feel emotionally and intellectually safe and supported.[329]

The Every Student Succeeds Act, Title IV, Part A, Student Support and Academic Enrichment Grants support trauma-informed approaches. Every Student Succeeds Act Title II funds can also support culturally responsive and trauma-informed concepts and competencies for school- and district-wide professional-development programs.[330]

WHAT WORKS

Project AWARE (Advancing Wellness and Resiliency in Education) is a grant program at the Substance Abuse and Mental Health Services Administration (SAMHSA) that funds state education agencies to work in partnership with state mental health agencies to:

- Increase awareness of mental health issues among school-age youth;
- Train school personnel to detect and respond to mental health issues (e.g., mental health first-aid training); and
- Connect school-age youth and their families to needed services.

Operated by the National Council for Behavioral Health and the Missouri Department of Mental Health, **Youth Mental Health First Aid** is a program designed to equip adults with specific skills to help adolescents experiencing a mental or behavioral health challenge or crisis.[334] The program has been shown to increase knowledge of youth emotional distress and to increase confidence in assisting youth in crisis.[335] Many state and local school districts offer this training to adults working with youth via Project AWARE, state education agency grants, and mental health awareness training grants, provided by SAMHSA.

WHERE IT'S WORKING

Broughal Middle School in Bethlehem, Pennsylvania, has experienced a school-wide cultural transformation and improved student outcomes by adopting a trauma-informed approach and creating a safe learning environment. The local United Way offered trauma training for school staff, explaining that when a student is in survival mode due to stressors, his or her brain is not ready to learn. Staff implemented peace corners (a place in the classrooms where students can regulate their physical and emotional state); they screen for ACEs; they routinely ask students to assess their mental health and share their own self-assessments; there is a classroom dedicated to mindfulness; and the staff are committed to being stable, caring adult figures in their students' lives. Two years after implementing this approach, the average student grade-point average rose from 2.17 to 2.51 and out-of-school suspensions dropped by nearly 17 percent.[331]

Second Chance program in Clayton, Georgia, provides alternatives to sentencing for youth convicted of serious offenses. Upon completion of the program, and provided they go two years without any more incidents, the state expunges the felony from the youth's record. Compared with a 36 percent chance of a child sent to prison returning to prison in Georgia,[332] the recidivism rate for Second Chance is just 7 percent.[333] Second Chance is a two-year program in which young offenders and their families work with judges, probation officers, and counselors to identify the problems that led to their crimes. Clinicians and social workers visit the youth's home to better understand the family. During the first six months, the youth is on house arrest and only allowed to go to school and work. The youth receive drug testing. They participate in role-playing workshops, classes, and other approaches to help change their thinking. In the second phase, the youth attend a weekly class to focus on school, getting a job, and gaining other life skills. Parents also attend the classes. In the third phase, the participants have more freedom as they finish their time on probation.

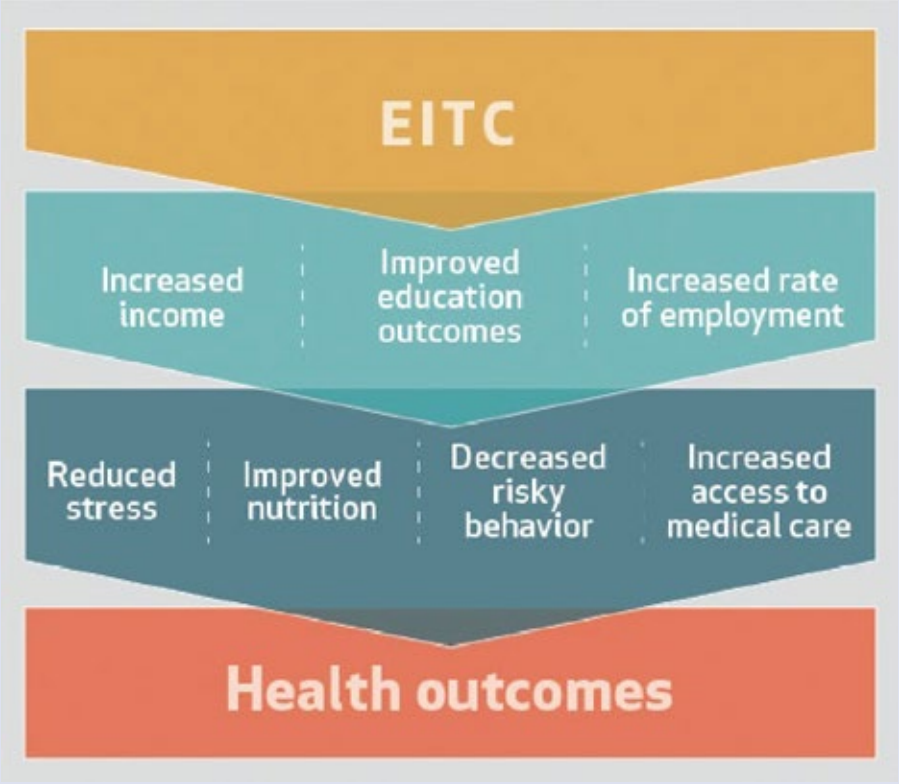
SUPPORTING THE COMPREHENSIVE NEEDS OF STUDENTS AND FAMILIES

Students have a wide range of physical, social, and emotional needs that schools can help address. Nationwide, 18 percent of children live in poverty, 34 percent live in single-parent families, 31 percent live in households with a high housing cost burden,[336] and 18 percent live in households that are food insecure.[337] But navigating the tangle of needed programs, services, agencies, and funding streams to address these needs is highly challenging.

WHAT WORKS

Supporting the basic needs of families through programs and policies like the Earned Income Tax Credit (as depicted in Figure 23), food assistance (such as the Supplemental Nutrition Assistance Program), and housing subsidies help bolster families' incomes to afford basic needs and have been shown to keep children out of poverty, help them achieve in school, and increase their earning power in their adult years—all of which reduces risk for substance misuse and suicide.[338,339]

Figure 23: Earned Income Tax Credit effects on health outcomes[340]

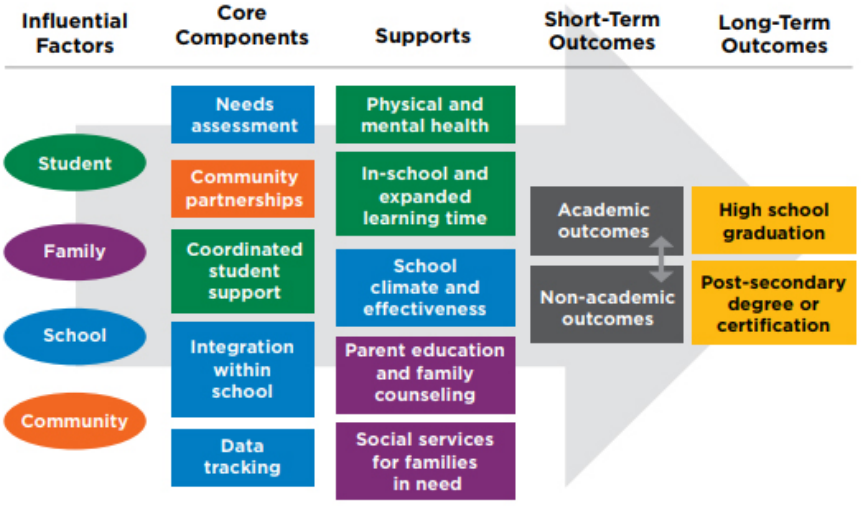


WHAT WORKS

Providing integrated supports for students can weave together the disjointed and siloed resources needed to get adolescents the services and supports they need to optimize their health and academic success.[341] Integrated student support systems help schools deliver coordinated, school-based supports to help students succeed academically by investing in someone to coordinate individual student needs, both at school and beyond. The coordinator may be a school counselor, or there may be a teacher team that together coordinates supports. The coordinator connects the student and by extension the family with supports like secure housing, medical and mental health care, food assistance, and tutoring.[342] The coordinator operates within a larger system that includes a needs and strengths assessment, community partnerships, integration within the school, and data tracking (see Figure 24). Examples of effective integrated support programs include Community Schools, which co-locate service providers in schools, or the Harlem Children's Zone, which concentrates an array of resources in a defined neighborhood.[343] Other effective programs, like Communities in Schools and Cities Connect, support staff to coordinate the resources that students need.[344]

There is evidence that students who receive integrated supports improve their attendance, effort, and engagement; have higher academic achievement; are less likely to drop out; and have better social and emotional outcomes.[346] Teachers in schools with integrated student supports say they are more available to focus on instruction and have more empathy for their students.[347] And schools with integrated supports show improving culture and climate. Return-on-investment studies project a return of $3 to $14 for every dollar invested in integrated support programs.[348] The Every Student Succeeds Act[349] encourages implementation of integrated students supports.

Figure 24: Logic model of the five core components of integrated student support[345]



WHAT WORKS

Communities in Schools (CIS) is a collaborative model for connecting families and students with targeted supports within their community. A full-time site coordinator in the school identifies individual and school-wide barriers to student success and then creates the necessary partnerships with local community agencies, businesses, and service organizations to address those needs. CIS reduces dropout rates, improves academic achievement, increases attendance, and improves behavior among participating students.[350]

Striving to Reduce Youth Violence Everywhere (STRYVE) is a national initiative led by the Division of Violence Prevention at CDC's National Center for Injury Prevention and Control. STRYVE helps public health departments implement multi-sector, prevention-oriented approaches to reduce youth violence.[353] Health departments develop comprehensive strategies to reduce violence and work with other sectors to implement evidence-based programs that:

- Strengthen the capacity of youth to prevent violence by building their skills and capacities and engaging them in positive youth-development programs to foster protective factors (e.g., healthy connections, confidence, competence, and contributions to the community);
- Build and maintain positive relationships between youth and the adults in their lives (parents, caregivers, teachers, and others) by strengthening the skills of the adults to better communicate, set and enforce rules, and monitor the child's activities and relationships; by providing professional development to teachers about effective classroom management practices, conflict resolution, and positive connections with children from diverse backgrounds; and by mentoring programs and activities that help youth build relationships with pro-social peers, rather than peers who have a negative influence;
- Promote economic opportunities and infrastructure in communities by, for example, developing business improvement districts, providing job skill training, or offering incentives for businesses to draw upon the local workforce;
- Promote connections among community members and organizations by creating regular and meaningful opportunities for all residents to interact;
- Promote community and school physical environments that promote safety and connectedness by addressing environmental factors such as lighting, availability of green space, and repair and upkeep of schools;
- Strengthen community policies that promote health and safety, such as policies that reduce the density of alcohol outlets;
- Foster social connectedness and a positive learning and working environment in schools;
- Promote societal norms about the unacceptability of youth violence by promoting a positive portrayal of youth as responsible members of society in the media and minimizing youth exposure to violence in media; and
- Address the social, economic, and structural conditions that affect youth violence and lead to health inequity by, for example, supporting mental health supports for young people and families or changing housing policy to deconcentrate poverty.

WHERE IT'S WORKING

At **Chaparral High School in Southern Nevada,** the CIS program has helped a student population that faces barriers such as transiency, homelessness, and gang activity. The CIS initiative has led to a clothing closet, housing assistance, self-esteem classes, and provision of food, school supplies, and eye and dental care. These supports matter: Graduation rates have increased from 34 percent to 80 percent over four years.[351]

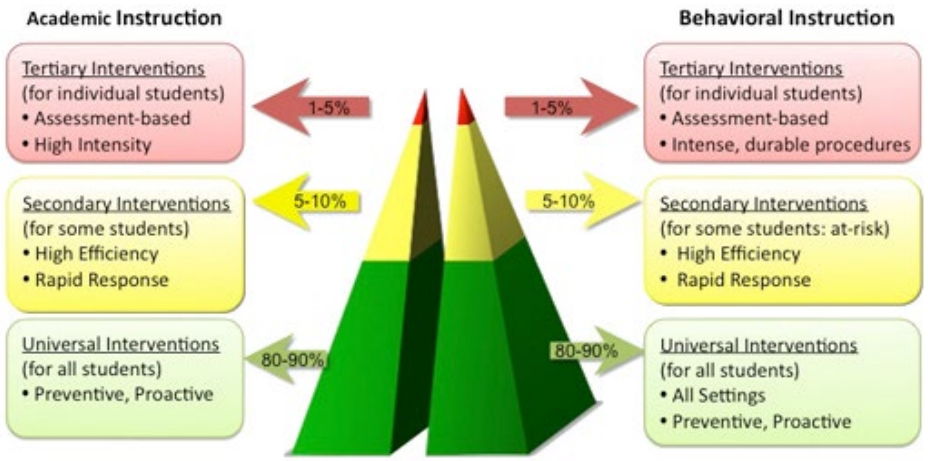
In **Renton, Washington**, CIS provides case management for students, and since 1995, Renton has also run the CIS of Renton Mentor Program for students identified at high-risk for dropping out. In 2018, 94 percent of Renton CIS parents/caregivers reported an increase in their ability to help their child succeed and an increase in their connection to the school. What's more, 90 percent of students reported that their sense of belonging at school increased.[352]

MENTAL AND BEHAVIORAL HEALTH SERVICES AND SUPPORTS

Mental and behavioral health services and supports are key to reducing adolescent substance misuse and suicide—particularly those that embrace a multi-tiered systems of support (MTSS) approach.[354] The MTSS approach ties together the various promotion, prevention, and treatment services and supports into a single framework for addressing mental and behavioral health, and helps facilitate connections between schools and communities. The MTSS approach encompasses three tiers: (1) universal services and supports that are provided to all students, including social-emotional learning, positive behavior supports, and screenings; (2) targeted services and supports that are provided to some students, such as group or individually delivered evidence-based interventions; and (3) intensive services and supports that are provided to a few students, such as crisis intervention or therapy, which are often linked to outside community providers (see Figure 25). The MTSS model includes elements that span the promotion, prevention, and treatment spectrum, including mental health curricula in schools, classroom management strategies, early screening, suicide prevention programs, on-site behavioral health services, tele-behavioral health consultations, and strategies that connect youth and families with community services.

Many adolescents only have limited access to quality mental health services and supports that span health promotion to treatment; this can create inequities. Only 41.5 percent of adolescents who experienced depression in 2017 received treatment.[356] And among those with a co-occurring major depressive episode and substance use disorder, only 5.9 percent received both mental health care and specialty substance use treatment, and 56.8 percent received only mental health care.[357] Disparities persist in access to behavioral health care. **Male adolescents, youth of color, uninsured adolescents, and adolescents living in rural areas are less likely to receive mental health services across settings.**[358,359] Racial/ethnic disparities in mental health care access have worsened over time for Blacks and Hispanics.[360] Within educational settings, older adolescents (16 to 17 years old) are less likely to receive services than younger adolescents.[361] Black adolescents report receiving less substance use specialty care than White adolescents, and both Black and Latino adolescents report receiving less informal substance use care than White adolescents.[362]

Figure 25: MTSS in both academic and behavioral instruction[355]



As a result of poor access to mental health services, more youth are seeking mental health care at emergency departments, with mental-health-related visits up 54 percent among adolescents between 2011 and 2015.[363] Additionally, emergency room visits for children ages 5 to 18 for suicide attempts or suicidal thoughts have doubled since 2007, reaching over 1 million visits in 2015.[364]

As many as 79 percent of school-age youth have unmet mental health needs.[365] **However, lack of infrastructure to increase Medicaid services in schools and the inadequate size of the mental health workforce contribute to the majority of schools being unable to meet the mental and behavioral health needs of their students.** Less than 3 percent of schools nationwide meet the professional recommendation for social-worker-to-student ratio.[366]

Increasing Medicaid services in schools is a key opportunity to address behavioral and mental health needs.

Medicaid remains a predominant insurer for school-age children, with four in 10 school-age children (6 to 18 years old) insured by Medicaid in 2016. Among low-income, school-age children, rates are nearly double, with eight in 10 children covered by Medicaid.[367] Studies link Medicaid coverage in childhood to positive health and education outcomes, including reductions in dropout rates, improvements in reading scores, and lower blood pressure, mortality, and hospitalization rates in adulthood.[368,369]

Schools serve as a key site for delivering Medicaid services—including mental health screenings and treatment covered by the Early and Periodic Screening, Diagnostic and Treatment benefit. **An estimated 70 percent of students receiving mental health services access the services via their school.[370] Since 79 percent of school-age youth have unmet mental health needs, providing Medicaid mental health services in schools is a critical opportunity to improve access to care.**

Medicaid is a critical funding source, supporting service delivery in schools. In fiscal year 2016, Medicaid spending in schools—including school-based services and Medicaid-related administrative services—topped $4.5 billion.[371] Importantly, Medicaid reimbursement often supports the salaries of school-employed providers

WHAT WORKS

Schools are the perfect hub for screening and delivery of mental and behavioral health services under an MTSS framework. Providing screenings and services in schools could dramatically improve adolescent health by expanding access to care—it can also improve academic achievement. Studies show that school mental health programs lead to decreases in school discipline referrals and improvements in academic test scores.[383]

Studies also show increasing access to mental health supports in schools can decrease absenteeism by as much as 50 percent among adolescents;[384] and researchers link chronic absenteeism, defined as missing school more than 15 days a year, to poor mental health.[385] Furthermore, there are disparities in rates of chronic absenteeism. One analysis showed that 4 percent of Hispanic English-language learners (ELL), 24 percent of Native American students, and 23 percent of African American students missed three or more days of school in the last month, compared with only 9 percent of Asian non-ELL students, 18 percent of White students, and 19 percent of Hispanic non-ELL students.[386] Increasing access to MTSS in schools can help reduce inequities in mental health and promote mental health for all students.

Poor academic achievement is associated with substance misuse and suicide. Adolescents with the lowest grades (mostly D/F's) are more likely to also have risk factors for poor mental health, suicide, high-risk substance use, violence victimization, and/or risky sexual behaviors.[387] And depressed adolescents are more likely to experience lower academic achievement.[388] The MTSS model, which promotes academic supports for students who need them, can improve the chances of student academic success, which serves as a protective factor for adolescent substance use and suicide.

who offer important mental and behavioral health services to not only Medicaid-eligible students, but all students in a school.

There are several models for delivering health services in schools. Schools can partner with outside Medicaid providers—such as school-based health centers, federally qualified health centers, local health departments, or hospitals—to deliver services to Medicaid-eligible students. These models may include on-site or linked services, or nontraditional models such as telemedicine and mobile vans. Schools can also seek Medicaid reimbursement directly for services provided by school-employed providers—such as school nurses, school psychologists, school social workers, or physical therapists.

For decades, schools have been receiving Medicaid funding for services provided to students as required under the Individuals with Disabilities Education Act (IDEA), yet schools have only recently begun seeking Medicaid reimbursement for non-IDEA students. In 2014, the Centers for Medicare and Medicaid Services issued a state Medicaid director letter reversing the long-standing free care policy.[372] This change allows states more flexibility in their school-based Medicaid programs by allowing billing for Medicaid services delivered to all Medicaid-enrolled children, not just those with a special education plan documented by an individualized education program. At least 14 states have taken steps to expand Medicaid services to all eligible students.[373]

Increasing behavioral health staffing ratios in schools and child welfare settings can improve access to a full range of services, including school-community partnerships. Other key community venues (such as youth-serving organizations and faith communities) can also serve as critical sites for implementing MTSS for students—providing health-promoting activities and environments, screening, and targeted service delivery.

Early identification and intervention for mental or behavioral health issues across youth-serving sectors is critical. Screening, brief intervention, and referral to treatment (SBIRT) is an evidence-based practice that hospitals, workplaces, schools, and other settings can use to identify, reduce, and prevent substance misuse by systematically screening and assisting those whose drinking or drug use might get in the way of successfully dealing with health, school, or family issues. Investing in SBIRT results in savings between $3.81 and $5.60 for every dollar spent.[374,375]

Finally, individuals experiencing mental health concerns, including suicidal thoughts, can access free and confidential counseling via telephone, online, and text-based crisis lines. Crisis counselors provide emotional support, assess suicide risk, and refer callers to resources that include counseling, social services, and emergency services. Research suggests crisis lines can reduce suicide risk and depressive symptoms among callers.[376]

PROMOTING FAMILY-CENTERED MODELS

Family-centered treatment improves outcomes for both women and children[377] and is recognized as the most effective intervention for youth with substance use disorders.[378,379,380] Research also demonstrates that family interventions impact other key outcomes, such as academic outcomes and peer relations.[381] Yet family interventions have not yet been well integrated into clinical practice and are not broadly adopted by community agencies.[382]

WHAT WORKS

Researchers at **Kaiser Permanente Northern California**'s Division of Research found that adolescents with access to SBIRT were less likely to have mental health or chronic medical conditions after one year compared with adolescents who did not have access to SBIRT. Adolescents with access to SBIRT services delivered by pediatricians or behavioral health clinicians in a primary care setting had fewer psychiatry visits over one year and fewer again after three years; they also had fewer total outpatient visits at three years, leading to lower costs and utilization of health care.[389]

Through the **Garrett Lee Smith Memorial Suicide Prevention Program (GLS)**, SAMHSA supports states and tribes that implement youth suicide prevention and early intervention strategies in schools and other educational institutions, juvenile justice and foster care systems, mental health programs, and other child and youth-serving organizations. Activities supported include awareness programs, screenings, gatekeeper trainings, improved community partnerships, and linkages to services, programs for suicide survivors, and crisis hotlines.[390] Research has indicated that counties implementing GLS program activities have lower youth suicide attempts and lower suicide mortality rates than similar counties that did not implement these activities.[391,392] One study concluded that more than 79,000 suicide attempts among 16- to 23-year-olds may have been averted between 2008 and 2011 following implementation of the GLS program.[393]

The **Zero Suicide Initiative** is a comprehensive approach to improving depression care in health systems that integrate suicide prevention into primary and behavioral health care. Primary care doctors screen every patient during every visit with two questions about how often they have felt down or how little pleasure in doing things they have, plus follow-up questions for those with high scores. When providers recognize a mental health problem, they assign patients to appropriate care, and hospital staff have the training to ensure that patients who need follow-up care leave with an appointment for that care. Providers also work with patients and families to create personalized safety plans and to limit access to lethal means. When suicides do occur, health systems analyze root causes to inform future prevention efforts. This model led to an 80 percent reduction in suicide among Health Maintenance Organization members of the Henry Ford Health System, the original adopter of this model.[394,395,396,397,398]

Supported by the U.S. Department of Education, the **Promise Neighborhoods** program is a multi-sector, place-based strategy that builds a continuum of supports for children and youth to succeed in school and beyond. The Mission Promise Neighborhood (MPN) based in San Francisco, California, puts family economic security at the heart of its efforts to improve youth outcomes. By connecting families to community supports—including immigration and legal services, job training, housing assistance, financial coaching, and computer training—MPN is working to reduce inequities within their community. Over the last five years, graduation rates within the MPN increased 25 percent among Latino students and 47 percent among Black students—outpacing overall rates in San Francisco Unified School District.[402] And 94 percent of MPN families report feeling a sense of belonging at their school.[403]

BUILDING MULTI-SECTOR PARTNERSHIPS TO ADDRESS THE FACTORS THAT IMPACT HEALTH

As described previously, the conditions in which an adolescent lives, works, plays, and prays heavily impact mental and behavioral health outcomes. These multi-sector impacts require multi-sector solutions; reversing adolescent mental and behavioral health trends will require sustained and meaningful engagement from all community partners and residents.

WHAT WORKS

Multi-sector coalitions are increasing across the nation and furthering multi-sector collaboration. Local communities need the infrastructure, communication channels, data, and sustainable financing to support effective multi-sector partnerships. Collective impact and other multi-sector approaches have emerged as a way to unify stakeholders around a central agenda. Collective impact initiatives create a backbone to identify and harness the strengths and capacities of community partners, develop mutually reinforcing activities, and foster streamlined communication channels between partners.[399] Effective collective impact models include this dedicated lead partner, or backbone entity, responsible for managing the efforts within the community; strong financial management that prioritizes sustained and sufficient funding; and expert guidance and technical assistance for partners to ensure the policies and programs implemented are evidence-based and effectively delivered with fidelity.

Fostering community agency and power increases the sustainability of multi-sector partnerships. Local organizations and residents know their communities' challenges best—and have a vested interest in addressing them. Community agency—or a community's ability to collectively make purposeful decisions and influence the conditions around them through shared leadership from within the local area—should be a critical component of all multi-sector approaches. Agency includes more than engagement in decision-making processes; it includes authentic community-driven solutions that originate from within the community itself.[400]

Community-led coalitions can influence the policy, systems, and environmental changes needed to reduce adolescent substance use and suicide. Community-led coalitions provide another structure for identifying and directing the unique strengths of community partners toward a shared goal. National organizations, like the Community Anti-Drug Coalitions of America (CADCA), play a critical role in strengthening the capacity of communities to create and maintain coalitions. CADCA provides communities with the resources and tools to build sustainable cross-sector coalitions, to implement effective prevention strategies, and to use data in community problem-solving strategies to create drug-free communities.

WHERE IT'S WORKING

Building Community Resilience (BCR) in Portland, Oregon, is fostering a community-wide effort to improve child health and wellness outcomes by creating channels of communication, connections, and authentic partnerships between community members and larger institutions. BCR Portland uses a trusted backbone organization to connect state and local health and education agencies, health care systems, and higher education institutions with community advocacy groups to create a sustainable partnership to implement trauma-informed care within one Portland community. To overcome the lack of coordination and collaboration in addressing the needs of traumatized youth in the community, BCR engaged Trillium Family Services, an organization specializing in the behavioral health of children and families. Trillium's strong community connections and awareness of the importance of health equity allows it to be a strong anchor in the effort to coordinate and improve wellness services. Working with BCR, Trillium engaged with Concordia University to open a "3 to PhD" school that focuses on the health and well-being of its K–5 students, resulting in reduced student suspensions, increased student attendance rates, and higher reading achievement. They engaged with the Oregon Health Authority, which oversees the Oregon Health Plan (the state Medicaid provider) and instituted a statewide trauma-informed care collaborative, thus leveraging favorable Medicaid policies to support the establishment of the BCR initiative.[401]

In response to a growing backlog of 36,000 truancy cases, **San Antonio and Bexar County, Texas** officials met in 2013 to develop a **multi-sector prevention approach to address the underlying causes of truancy.** Prior to 2015, truancy was a criminal, rather than a civil, offense in Texas—meaning students and parents faced fines and potential jail time for missing school. Stakeholders from the juvenile justice sector, local school districts, and both city and county offices developed a plan to place juvenile case managers at schools. Case managers work one on one with students and their families to develop attendance contracts that get at the root causes of truancy and include counseling, tutoring, mentoring, and other services. Thanks to advocacy efforts from San Antonio officials, in 2015, Texas passed a measure to remove criminal treatment of truancy. Today, San Antonio sees only about 16 truancy cases filed annually.[404]

Based in **Chatham County, Georgia, Front Porch** is a community resource center for families and youth that aims to keep young people out of court. The initiative brings together multiple sectors within the county, including Chatham County Juvenile Court, Chatham County government, the city of Savannah, and the Savannah-Chatham County school district. Front Porch accepts referrals from multiple youth-serving agencies in the community and provides evidence-based counseling and assessment for families and youth. Supported by the Annie E. Casey Foundation, the Savannah-Chatham school district has supplemented its involvement in Front Porch by hosting cross-agency trainings on restorative justice and implicit bias and by helping to fund an educational advocate at the juvenile court. Between the 2013–2014 and 2018–2019 school years, referrals from the Savannah-Chatham school district to juvenile court dropped by 85 percent.[405]

WHERE IT'S WORKING

The **Healthy Students, Promising Futures Learning Collaborative (HSPF)** brings together cross-sector state teams to increase Medicaid services in schools and to promote safe and supportive school environments. Each of the 15 participating state teams includes representatives from their state education and Medicaid agencies and two local education agencies with some teams also including state and local advocates, public health agencies, and others.

HSPF provides teams with training and technical assistance, opportunities to meet with federal policymakers, and importantly, opportunities for peer learning and skills building. Experts work one on one with states on a variety of concrete goals, such as surmounting privacy barriers to cross-sector data sharing; developing formal communication channels between agencies and sectors; and braiding diverse funding sources to support promotion, prevention, and treatment services and strategies in schools.

Through HSPF, state teams have successfully identified and overcome barriers to cooperation across state agencies as well as challenges to implementing new federal flexibilities in their states. Specifically, teams have expanded Medicaid services via partnerships between schools and Medicaid providers; expanded services under the school-billing model; and implemented state policies to support the delivery of Medicaid services in schools, including through tele-health. States have identified and implemented trauma-informed practices and policies and are working to promote positive school climates.

Gaps and Barriers to a Cross-Sector Prevention Approach

The United States needs a cross-sector approach to reduce the risk factors and to promote the protective factors for adolescent substance misuse and suicide. Aligning strategies across youth-serving sectors is possible, despite existing gaps and challenges.

Despite decades of evidence showing the value of investing in prevention, convincing policymakers to fund evidence-based prevention interventions, policies, and/or practices remains a challenge—resulting in an underinvestment in primary prevention. In fiscal year 2016, for example, of the $11.3 billion the federal government collectively spent on adolescent substance use prevention, treatment and recovery services, and research, only $1.5 billion supported prevention services and research—with significant gaps in prevention services for certain high-risk populations, like AI/AN or LGBT youth.[406]

One of the reasons for this underinvestment in universal primary prevention is the prevention paradox—the fact that the majority of cases of a disease or outcome come from low-risk individuals, while only a minority come from high-risk individuals.[407] Primary prevention interventions that are offered to all individuals regardless of risk status (universal interventions) often produce the greatest health benefits for a population despite offering relatively small benefits to a given individual. Therefore, an approach that aims to derive the greatest individual benefit by focusing only on those identified at highest-risk may actually be less effective in preventing a given outcome as it fails to catch people before they move from low- to high-risk.

This paradox has resulted in the creation of two separate systems—one for disease management, and one for primary prevention—and a tendency to tackle prevention using one, but not both, approaches in an integrated fashion. However, the protective factors for those at low-risk are often the same as the protective factors for those at high-risk. And risk profiles shift throughout the life course—with individuals moving from low- to high-risk and vice versa as their social, economic, and environmental conditions change. There is, therefore, a need to ensure that all adolescents receive services and supports through universal prevention practices and policies.

Universal prevention approaches must work alongside targeted approaches for those at high-risk. This dual strategy is particularly necessary since many of the risks for substance use and suicide relate to nuanced structural or social disadvantages.

Sustainable funding streams across sectors are critical to help seed, scale, and sustain interventions aimed at addressing adolescent well-being, particularly primary and primordial* prevention strategies. Typically, funding is discrete, funding a single program or intervention within a narrow locality. This model fails to provide incentives or resources to facilitate integration of siloed programs and systems within and among schools, communities, or other youth-serving organizations. The siloed nature of private and public funding streams often hinders collective action from across youth-serving organizations or agencies, resulting in redundancies, inefficiencies, and/or short-lived initiatives. And investments often cluster, neglecting geographic areas and populations with the highest disparities.

There is substantial overlap in the risk and protective factors across youth-serving sectors, and thus it is critical to make the case for out-of-sector investments—a challenge commonly known as the "wrong-pocket problem." The areas of overlap present critical opportunities for joint investments in primary and primordial prevention. However, to capitalize on these areas of synergy, the logic of investing in another sector to get the outcome you seek in your sector must be crystal clear—and mechanisms must exist to allow for this investment across siloes. These types of investments are particularly difficult where budgets are already stretched to their limits. The Good Behavior Game (GBG) demonstrates the problem: when implemented in schools as a classroom management strategy, GBG produces positive upstream outcomes across the justice, health/behavioral health, and education sectors through, for example, improved academic achievement and reductions in substance use and delinquency.[410] Given this multi-sector impact, one would expect multi-sector investments in GBG; however, to date, cross-sector investment in GBG has remained limited, apart from a few examples of health care investments in the program.

Identifying effective prevention interventions is challenging—and translating findings into practice is often even more so. While many federal agencies, like SAMHSA and the U.S. Department of Education, require the use of evidence-based practices in their grants, the lack of a central evidence repository can make it difficult for stakeholders to identify which interventions have demonstrated effectiveness for a particular outcome.[411] The siloed nature of government registries can make it particularly challenging when trying to identify evidence-based interventions that address outcomes across sectors.

WHAT WORKS

SAMHSA's **Systems of Care** model supports sustainable financing, cross-agency collaboration, and systemic changes, while providing flexibility in implementation. Evaluations of the Systems of Care approach show improved outcomes for children, youth, and families, while also incentivizing systems change.[408] A recent report shows evidence of impact on suicide ideation, suicide attempts, and juvenile arrests.[409]

* Primordial prevention refers to the actions that inhibit the establishment of environmental, economic, social, and behavioral conditions known to increase the risk of disease; and actions that enhance individuals' developmental competency, positive sense of self-esteem, social inclusion, and well-being to strengthen their ability to cope with adversity.

Resources for translating evidence-based research on adolescent substance use prevention programs into practice are scarce.[412] Program fidelity is key to effective translation of research into on-the-ground programs and services. Typically, an evidence-based program will deliver the results promised by research only if the program is implemented "with fidelity"—that is, in the same manner and conditions as the originally studied program. A multitude of issues can affect program fidelity, from changes in staffing, to inadequate resources, to differential implementation of a program across a setting (applied differently across classrooms in a school), to a mismatch between program and participant characteristics (needs, culture). Moreover, researchers test many interventions on homogenous populations and may require adaptations to be culturally relevant for the population of interest, potentially reducing program fidelity.

Another element of effective implementation is context. Many youth-serving settings are subject to strict time and resource constraints. On average, schools implement nine different prevention programs to address student behaviors.[413] As more programs pile up, their effectiveness may erode as implementors, such as teachers, drop aspects of a program or even entire programs to incorporate a new and different program, particularly those that are tied to accountability measures. The key is effective program adaptation that connects and integrates the most critical elements of evidence-based programs to prevent disjointed layering.

WHERE IT'S WORKING

In response to the rising suicide rates, the White Mountain Apache tribal community in **Arizona** implemented the **Celebrating Life prevention program.** It has three components: (1) universal, (2) selected, and (3) indicated. The universal component involves promoting protective factors and reducing risk factors through community-wide education. Activities include interagency meetings, a public-education multimedia campaign, suicide prevention walks, suicide prevention conferences, door-to-door campaigns, booths at health and tribal fairs, and regular distribution of lifeline cards. The selected component focuses on early identification of high-risk youth and includes caretaker trainings, cultural and strengths-based activities led by elders, a middle school curriculum taught monthly by elders, elementary school workshops, and field trips. The indicated component uses intensive prevention interventions—two- to four-hour sessions based on a curriculum designed to reduce imminent risk and connect to care—for youth who attempt suicide and their families. These interventions have been highly successful. Suicide rates dropped 38 percent, from 40 per 100,000 people in the period from 2001 to 2006 to 24.7 during the period from 2007 to 2012. However, serious challenges remain. Future interventions will continue to build on the strengths of the community.[414]

The results of youth-focused interventions do not materialize overnight—with many measures of success not appearing until well into adulthood. This fact can make it difficult to measure the longitudinal outcomes of interventions during adolescence and, thus, make the case for sustained funding. Lack of data to demonstrate short-term effectiveness can, and often does, result in funding cuts, particularly in cases where funders are supporting an initiative outside of their traditional silo or sector.

Existing data sources for measuring adolescent outcomes are often disconnected, making it challenging to measure multi-sector effects or trends. CDC's Youth Risk Behavior Surveillance system, for example, has historically only measured rates of use for certain drugs ever, rather than the frequency of drug use, making it difficult to measure trends in drug use across adolescence. Moreover, while datasets may include measures for disaggregating data by racial, ethnic, and sexual minority status, many do not differentiate by other high-risk categories that may be of interest to sectors such as academic performance, foster care status, or juvenile justice involvement.

Data may also fail to capture the full extent of those at highest risk due to selection bias. Sources collected in school settings, for example, rely on students being present at school for data collection. Data trends may not represent students who are chronically absent, drop out, or who have died as a result of high-risk behaviors. Many negative outcomes, such as high-risk substance use or suicide, occur in statistically small proportions of the adolescent population. Therefore, it may not be possible to meaningfully disaggregate data for some minority groups due to their statistically small subpopulations, potentially masking disparities within these groups.

WHERE IT'S WORKING

Penn State University launched the **Administrative Data Accelerator**, a massive, joined dataset of administrative data from multiple agencies across sectors. The dataset originated as a way to better understand the inter-relationships between youth in child welfare and juvenile justice and other outcomes, like health care utilization. Importantly, the Administrative Data Accelerator is compliant with federal and state privacy laws from the health, justice, and education sectors.[415]

The **Allegheny County, Pennsylvania**, Department of Human Services operates the **Allegheny County Data Warehouse**, a central repository of cross-sector data for the county that includes measures related to juvenile justice, early childhood, substance use, mental health, and public schools, among others. The warehouse allows data sharing among county departments, as well as among non-county entities like local school districts, and is designed to promote effective policymaking and decision making in the county.[416] The Data Warehouse was made possible with support from the Human Service Integration Fund, a flexible funding pool created by a coalition of local foundations for the purpose of supporting integration and innovation within Allegheny's Department of Human Services. The Data Warehouse has contracts with 20 school districts—six of which have the technical capacity to share data as of April 2018.[417]

Policy Recommendations to Support the Creation of a Multi-Sector Framework for Adolescent Well-Being

Without question, improving the environments and conditions in which adolescents live, learn, and play—at home, at school, and in the broader community—is paramount to preventing adolescent substance misuse and suicide.

These conditions and associated risk and protective factors do not occur in siloes, and thus policy action must be multi-tiered, spanning from strengthening families to improving school climate to creating healthy community environments to combating racism, and it must be multi-sector, bringing together individuals, agencies, and organizations from across public health, healthcare, education, youth-development, juvenile justice, child welfare, and other youth-serving fields. And for all policies, engaging youth in decision making is paramount.

These recommendations serve as collective components of a larger, system-wide, multi-sector framework to reduce risk factors and bolster protective factors for adolescents. Officials cannot (and should not) apply these recommendations piece-meal, rather they should implement them in an integrated fashion.

PRIORITY AREA 1: Support and nurture families by investing in evidence-based strategies and services in multiple sectors.

Families are more likely to provide their children with a nurturing environment if they aren't facing stressful economic and social conditions. If parents don't have to work long hours or toil at multiple jobs to put food on the table, if they themselves aren't the victims of violence, if they don't encounter racism or other forms of discrimination, or have untreated medical or behavioral health conditions, it is more likely they can create a home environment for their children to thrive. It's vital to support families of adolescents with access to useful services and with engagement in efforts to create healthy conditions in their communities. The following represent certain key actions that would help families.

Recommendations:

- **Federal and state governments should guarantee affordable, comprehensive health insurance coverage for all—with ensured parity for and access to mental health and substance use services.**
  - The federal government should enforce and strengthen parity in insurance coverage of behavioral health services.
  - States should expand Medicaid services in schools using current flexibilities (e.g., free care) via models, such as school-based health centers and telehealth, that improve adolescent access to mental and behavioral health services.
  - Health insurers should reimburse for screening, brief intervention, and referral to treatment (SBIRT) in all appropriate settings delivered by a variety of competent providers.
  - Congress and states should increase access to health insurance coverage for all family members—including via Medicaid expansion. States that choose not to expand Medicaid should consider closing the coverage gap for parents who have incomes above Medicaid eligibility limits but below the lower limit for marketplace premium tax credits.
  - Congress should expand the behavioral health workforce by increasing investments in workforce training programs, such as the Health Resources and Services Administration's Behavioral Health Workforce Education and Training Program, and expand the National Health Service Corp scholarship program to apply to mental and behavioral health providers.[418]

- **Congress and state legislatures should scale up federal and state programs and policies that increase economic assistance to low-income families.**
  - Congress and state legislatures should increase investment in Earned Income Tax Credits, Child Tax Credits, the Supplemental Nutrition Assistance Program, subsidized affordable housing, and other economic assistance to families.
  - Congress should invest in novel strategies to address the social determinants of health, including supporting state and local partnerships between public health, healthcare, and other stakeholders to identify and address the social needs of patients through community-wide interventions.
- **Federal, state, and local governments should develop and implement specialized services to families undergoing stressful transitions and crises, particularly those in the nation's armed forces.**
  - The U.S. Veterans Health Administration and the U.S. Department of Defense should scale up specialized behavioral health support systems and assistance to service members and veterans and their families, including with marital- and family-counseling interventions like cognitive behavioral conjoint therapy for post-traumatic stress disorder offered through the Department of Veterans Affairs.
  - Criminal justice and child welfare agencies should invest to increase the availability of reintegration and support programs for individuals leaving correctional facilities and their families.
- **Public and private funders should invest in evidence-based parenting programs (like Guiding Good Choices) in school, home, primary care, mental health, and community settings.**
- **Increase the availability of family-centered substance use prevention and treatment programs by training behavioral health providers to implement these interventions and by providing insurance coverage to reimburse for them in all appropriate settings.**
- **States should implement the new Family First Prevention Services Act**, tapping an option to use child welfare funds to provide mental health and substance use services and parenting programs to families whose children are at risk of placement in the foster care system.

PRIORITY AREA 2: Promote positive pathways to educational and life success.

Approaches grounded in promoting safe and supportive environments for adolescents via a positive youth development framework are critical to reducing the risk factors and bolstering the protective factors for substance use and suicide and to promoting healthy habits.

Recommendations:

- **The federal government should scale up evidence-based positive youth development programs and practices.**
  - The U.S. Department of Education and the U.S. Department of Health and Human Services should invest further in programs promoting safe and supportive learning environments:
    - Congress should increase investments in the Department of Education's School Climate Transformation Grant program to support additional state and local education agencies in promoting a culture of connectedness.
    - The CDC should implement a national survey of school climate.
    - Congress should increase investment in the Division of Adolescent and School Health at the CDC to expand their evidence-based programs that promote school connectedness to all states and additional local school districts.
    - Congress should increase investments in SAMHSA's Project Advancing Wellness and Resilience in Education (Project AWARE), which supports state education agencies to work in partnership with state mental health agencies to increase awareness of mental health issues among school-aged youth; provide training for school personnel in how to detect and respond to mental health issues (i.e., mental health first aid training); and connect youth and their families to needed services.
    - The U.S. Department of Education and the U.S. Department of Health and Human Services should provide funding and technical support to states and school districts to implement social and emotional learning programs in schools, including anti-bullying programs.
    - States should explore including a measure of social and emotional learning as a nonacademic indicator in state education accountability systems.
- **Congress should increase investments in CDC's National Center for Injury Prevention and Control to scale up comprehensive, community-based suicide prevention programs** and evidence-based adolescent violence prevention programs, like Dating Matters and Striving to Reduce Youth Violence Everywhere (STRYVE).
- **Congress should invest in novel efforts to identify population-based strategies to measure and improve emotional well-being and mitigate the long-term effects of trauma,** including supporting state- and local-level partnerships to directly identify and improve emotional well-being.
- **All youth-serving systems should adopt a multidisciplinary and collaborative approach to positive youth development.**
  - The U.S. Department of Education should increase support for states and school districts by implementing the widely endorsed Framework for Safe and Successful Schools, a multidisciplinary strategy to promote positive and nurturing school environments by fully integrating mental health and learning supports into schools through multi-tiered systems of supports (MTSS) to promote mental wellness, identify children at risk, provide interventions and counseling, and coordinate with community providers as needed. Implementing MTSS requires blended, flexible use of funding streams, more mental health services in schools, school discipline practices that promote positive behavior, and ongoing school safety and crisis response training.[419]
  - All federal youth-serving agencies should invest in workforce training and pre-service training to ensure that the current and future workforce can implement positive youth development approaches.
- **The juvenile justice system should adopt approaches that recognize that substance misuse and serious emotional disturbances are health issues, rather than criminal issues.**
  - The juvenile justice system should adopt less punitive approaches for youths with behavioral health issues, instead providing alternatives to sentencing and detention. For example, drug courts and programs like Law Enforcement Assisted Diversion, or "LEAD," divert people away from formal processing or serving time in the justice system, while still holding them accountable for their actions. Instead of being formally processed or incarcerated, youth receive support services, such as substance use or mental health treatment or connection to housing.[420]

- Congress should increase funding for the U.S. Department of Justice's Office of Juvenile Justice and Delinquency Prevention to improve the capacity to provide the funding and technical assistance necessary to support state and local juvenile systems in implementing diversion programs.
- The U.S. Department of Justice should support evidence-based training programs for law enforcement officers, such as Mental Health First Aid for Public Safety, which helps law officers better understand mental illness and provides them with response options to de-escalate incidents related to mental health,[421] and implicit bias workshops.

- **Schools should implement a positive disciplinary approach.**
  - Federal guidance on positive discipline practices should be reinstituted to promote equitable approaches that result in nonpunitive measures and help schools move beyond antiquated discipline practices that have discriminatory intent or impact, as recommended in the U.S. Commission of Civil Rights report *Beyond Suspensions: Examining School Discipline Policies and Connections to the School-to-Prison Pipeline for Students of Color with Disabilities.*
  - The U.S. Department of Education should increase investment in the Technical Assistance Center on Positive Behavioral Interventions and Supports (PBIS), which provides states and school districts resources to implement technical assistance and behavioral interventions.

- **All youth-serving systems should prioritize investments in approaches that empower youth voice and enhance youth participation.**

  - Governments and foundations should require meaningful youth engagement and decision making in programs targeted at adolescents through explicit language in funding opportunities.
  - Youth-serving systems should adopt an asset/protective-based approach rather than a deficit/risk-based one. Systems and professionals serving youth should focus on the positive—their assets and the factors that are protective, as opposed to the current focus on the risks youth take and the problems they have. Traditionally, the focus has been on preventing youth from engaging in risky behaviors. Shifting to a more positive asset-based approach offers the opportunity to build resilience and capitalize on the assets of youth for the betterment of society.[422]

- **All youth-serving systems should adopt trauma-informed and culturally competent policies and practices.**
  - Federal and state agencies, as well as schools and other community-based institutions serving youth, should require all staff to participate in professional development on the effects of trauma and in trainings to develop evidence-based trauma-sensitive practices and skills.
  - Institutions of higher education that are training the next generation of teachers, social workers, pediatricians, mental health professionals, and other youth-serving professionals should implement curricula that equips these professionals with trauma-informed and culturally sensitive practices—such as routine screening for trauma for both youth and their families.
  - The federal government should scale up existing efforts to promote trauma-informed practices and policies, such as SAMHSA's National Child Traumatic Stress Initiative, the National Child Traumatic Stress Network, the U.S. Department of Education's National Center on Safe Supportive Learning Environments, and the CDC's National Center for Injury Prevention and Control VetoViolence initiative, which all offer trainings and resources on ACEs, trauma, and suicide prevention.

PRIORITY AREA 3: Create community environments that support good mental and physical health.

A community's physical and social environment have significant implications for the mental and physical health of adolescents—positive community environments provide a sense of safety, security, and social connection, improving mental health.

Recommendations:

- **Federal, state, and local governments should increase investments to improve the built environment and access to safe recreational activities for adolescents.**
  - Federal, state, and local governments should increase investments in greenspace, parks, schools, and other recreational facilities used by adolescents to ensure community-wide access. Facilities should be safe and available at no cost or low cost, should be easy to get to, and should have convenient hours.
  - Federal, state, and local governments should increase investments and policies that support mixed-use developments combining residential housing, schools, businesses, and other community facilities that increase walkability and bikeability.
  - Existing community-development funding streams should be leveraged to increase investments in the built environment.[423]
- **Governments at all levels should create systems that foster connectedness and social support for adolescents.**
  - Congress and federal agencies should increase investments in and promote coordination of technical assistance centers that support states in implementing evidence-based interventions to promote adolescent connectedness, such as the U.S. Department of Education's National Center on Safe Supportive Learning Environments and the Technical Assistance Center on Positive Behavioral Interventions and Supports; SAMHSA's Now is The Time Technical Assistance Center; and the Office of Juvenile Justice and Delinquency Prevention's National Training and Technical Assistance Center.
- **Federal, state, and local efforts to improve school safety should include strategies to prevent school violence by investing in safe and supportive school environments and mental health services.**
  - As recommended in the *Final Report of the Federal Commission on School Safety* (2018), the federal government should scale up strategies to prevent school violence, including through character education, the creation of a positive school climate, and mental health promotion and treatment. School safety initiatives need to be aligned with the education, health, and youth-serving sectors to ensure that these prevention strategies are incorporated into efforts to protect students.[424]
- **Government agencies at all levels should take steps to combat racism and discrimination and their historical legacies.**
  - Federal, state, and local agencies should apply an equity-informed method for directing resources and investments toward communities where the greatest inequities in outcomes and risk and protective factors exist—including supplementing funding for schools in underserved communities.
  - School districts should eliminate racially discriminatory practices, such as lottery or entry programs into the highest-performing schools that disproportionately underserve youth of color.[425,426] Districts should also evaluate whether academic tracking of students for gifted and talented education programs and remedial courses is perpetuating discrimination and segregation.[427]
  - Local governments should invest in educational programs and support networks that combat racism, homophobia, and other types of discrimination in schools and community settings, such as gay-straight alliances.
  - Government agencies should increase hiring and training of diverse staff at all levels to directly reflect the diversity of the population and should provide implicit bias training.[428]

PRIORITY AREA 4: Build the infrastructure necessary to share knowledge and align work across sectors.

Multi-tiered, multi-sector action to advance these policy recommendations requires changes to the way leaders fund, organize, and support prevention efforts at the federal, state, and local levels. Aligning programs, policies, and funding strategies around shared risk and protective factors, rather than sector-specific outcomes, provides a framework for this type of multi-sector collaboration.

Recommendations:

- **Public and private funders should incentivize strategies that address common risk/protective factors across all adolescent-serving sectors**—such as mentoring, social and emotional learning, or positive parenting programs, to encourage multi-sector investments, reduce duplication, and increase efficiency.
  - Create or leverage cross-agency coordinating bodies, such as the federal Interagency Working Group on Youth Programs and state children's cabinets, to coordinate data gathering, data sharing, and budgets.[429]
  - The federal government should increase efforts to collaborate across agencies and align programs, building on the successful cross-agency collaboration to promote safe and healthy schools.
  - Federal agencies that support adolescent well-being via grant funding or technical assistance centers, including the U.S. Department of Education, the U.S. Department of Health and Human Services, and the U.S. Department of Justice, should establish state peer-learning opportunities to support innovation and the spread of evidence-based practices.
  - Federal agencies should develop a multi-sector, multi-agency federal registry of evidence-based interventions targeted at adolescents that is searchable by outcomes, risk and protective factors, and sectors.
  - Federal agencies should develop common outcome measures across agencies and ensure that data collection and analysis prioritize understanding the experience of minority and at-risk groups.
  - Government agencies should train staff working in youth-serving agencies in multidisciplinary collaboration.
  - Post-secondary institutions training nurses, physicians (particularly pediatricians), educators, social workers, and juvenile justice professionals should establish pre-service training requirements that train students on interdisciplinary collaboration.

WHAT WORKS

Federal Collaboration for Safe and Healthy Schools

Recognizing that positive school climates cannot be achieved by any one agency alone, the U.S. Department of Education, the U.S. Department of Health and Human Services, and the U.S. Department of Justice worked together to design three grant programs that, together, would provide support to professionals across disciplines to provide the instruction, counseling, and mental health services that contribute to positive school climates (School Climate Transformation Grant program, Project AWARE, and Keep Kids in School and Out of Court). A study showed that the majority of state and local grantees were coordinating through joint training, coordinated planning, communication, and the development of shared organizational structures. As a result, local efforts were better integrated and aligned with the MTSS framework, and, ultimately, grantees were better able to meet students' needs. The expectation of coordination communicated by the federal agencies was a key factor in encouraging grantee collaboration.[430]

- **Public and private funders should promote braiding and blending of funding streams** to provide the flexibility needed to align strategies across multiple sectors and to address the "wrong pocket" problem (where investments in one sector impact outcomes in another sector).
  - Federal and state agencies should require multi-sector coalition building in funding opportunities that impact adolescent well-being and encourage grantees to capitalize on the assets and evidence from other sectors.
    - Federal agencies should align language in funding opportunity announcements to match the shared risk and protective factors rather than including sector-specific outcomes only.
    - The federal government should scale up the Drug-Free Communities program, which aligns sectors around common factors to help more communities prevent substance misuse.
  - Federal agencies involved in adolescent health and well-being should develop a universal prevention grant application that streamlines the various federal application requirements for prevention-related activities and allows grantees to implement evidence-based interventions from across adolescent-serving sectors.
- **Federal and state governments should invest in Wellness Funds and other cross-sector funding strategies that emphasize primary prevention.**[431]
  - Federal and state governments should consider alternative payment models, performance-based contracting, pay-for-success contracts, and social-impact bonds to promote cross-sector financing.
- **Aligning prevention approaches requires an integration of behavioral health with primary healthcare—where the whole health of adolescents is addressed —including physical and mental health needs.**
  - Public and private funders should consider strengthening incentives to increase the integration of behavioral health and primary health care and should create a technical assistance center to support this integration—including data integration.[432]
  - The federal government should increase SAMHSA, Health Resources and Services Administration, and Center for Medicare and Medicaid Innovation grants for behavioral and physical health integration, with a particular focus on underserved areas/populations.
  - The federal government should expand the Certified Community Behavioral Health Clinic pilot program through Medicaid and increase funding for school-based health centers to increase access to mental health services.

PRIORITY AREA 5: Increase funding for prevention.

Sustainable investments in prevention are critical for reversing current trends in adolescent substance misuse and suicide. To be effective, this will require a coordinated, multi-sector funding approach to both scale up prevention programming and further invest in prevention research to help bolster the case for multi-sector investments in adolescent well-being.

Recommendations:

- **Congress should increase funding for substance misuse and suicide prevention.**
  - The federal government should increase funding to the Garrett Lee Smith State/Tribal Youth Suicide Prevention and Early Intervention Grant Program to serve more youth in those communities.
  - The federal government should increase investments in CDC's National Center for Injury Prevention and Control to scale up comprehensive, community-based suicide prevention programs. Government should also increase funding for the CDC's Overdose Data to Action Prevention Program.
  - Federal agencies should increase funding for the National Suicide Prevention Lifeline and increase oversight to assure timely access to quality care. They should also examine new mediums to connect with youth in crisis.
  - The federal government should maintain current funding for the Drug-Free Communities Support Program and increase funding for the Substance Abuse Prevention and Treatment Block Grant, which includes a 20 percent set-aside for prevention activities.
- **Federal and state governments should increase investments in technical assistance to scale evidence-based prevention efforts.**
  - Federal agencies should augment technical assistance to help communities implement prevention programs, building on programs like Drug-Free Communities (jointly administered by SAMHSA and the Office of National Drug Control Policy), Systems of Care (SAMHSA), or Communities that Care and PROSPER (Promoting School-community-university Partnerships to Enhance Resilience).
  - The U.S. Department of Education should collaborate with states to increase substance use screening in schools, such as screening, brief intervention, and referral to treatment (SBIRT), as recommended in the final report of the President's Commission on Combating Drug Addiction and the Opioid Crisis.[433]
  - Federal agencies should address the "rich get richer" dilemma by funding planning grants for states/communities that lack baseline capacity to compete in funding cycles.

WHAT WORKS

Systems to Help Communities Implement Prevention Efforts

The PROSPER project (PROmoting School/community-university Partnerships to Enhance Resilience)[434,435,436] developed by the Partnerships in Prevention Science Institute and the cooperative extension, is an evidence-based delivery system for supporting sustained, community-based implementation of scientifically proven programs that reduce adolescent substance misuse or other problem behaviors and promote youth competence. The PROSPER delivery system reduces a number of negative behavioral outcomes, including drunkenness, smoking, marijuana use, use of other substances, and conduct behavior problems, with higher-risk youth benefiting the most.[437,438,439] PROSPER also demonstrates positive effects on family strengthening, parenting, and youth skills outcomes, and it reduces negative peer influences.

The Social Development Research Group at the University of Washington developed **Communities That Care**[440] to provide a prevention planning system and network of expert support for the use of evidence-based approaches that promote the positive development of children and youth and that prevent problem behaviors. Hundreds of U.S. and international communities have used this evidence-based approach, which involves all parts of a community to target predictors of problems, rather than waiting for problems to occur. Researchers grounded the program in data from public health, psychology, education, social work, criminology, medicine, and organizational development. A randomized controlled test of Communities That Care programs in 24 communities across seven states that followed 4,407 5th-graders found that by the spring of 8th grade, significantly fewer students from participating communities had health and behavioral problems and were 25 percent less likely to have initiated delinquent behavior, 32 percent less likely to have initiated alcohol use, and 33 percent less likely to have initiated cigarette use.[441] The results were sustained through 10th and 12th grades—with 25 percent lower odds of engaging in violent behavior. A cost-benefit analysis found a $4.23 benefit for every dollar invested in the Communities that Care operating system.[442]

- **Congress should increase investments in prevention research at the Centers for Disease Control and Prevention, the Substance Abuse and Mental Health Services Administration and the National Institute of Drug Abuse, as well as at other federal agencies.**
  - The federal government should increase research on the cross-sector effects of interventions to reduce adolescent substance misuse and suicide, on the science of implementing prevention programs and policies in multiple sectors, and on translating the evidence on prevention into practice.
  - Federal and state governments should make it easier to share and analyze data across sectors while protecting privacy.
  - The U.S. Department of Health and Human Services should increase research on the impact of social media on substance use and mental health.
- **States receiving funding under the Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act (SUPPORT) should direct more funds toward prevention** to complement investments in treatment and recovery. Congress should ensure adequate funding for primary prevention, including youth-focused programs to support prevention, treatment and recovery programs; and for trauma support services and mental health care for youth.

Appendix A: Defining Adolescence

The definition of adolescence varies among organizations and sectors. People often define adolescence by either the medically defined range of puberty or, alternatively, by school year. For the purposes of this report, TFAH broadly defines adolescence as 12 to 19 years of age. This definition attempts to align with both the typical ages of middle and high school students, as well as adolescent development, and accounts for limitations created by data sources examined.

Organization	Age Range for Adolescence
American Academy of Pediatrics	11 to 21 years[443]
World Health Organization	10 to 19 years[444]
U.S. Department of Health and Human Services, Office of Adolescent Health	10 to 19 years[445]
Centers for Disease Control and Prevention, Division of Adolescent and School Health (CDC DASH)	"preteen and teenage years, the middle and high school years, and the years during which puberty and maturation occur"[446]

Appendix B: Methodology

Both qualitative and quantitative methods informed this report.

- TFAH conducted an expert policy convening in October 2018 as described below.
- TFAH conducted expert interviews with thought leaders, policymakers, and researchers from across the education, justice, and health sectors to inform policy recommendations, identify risk and protective factors, and develop common language and framing.
- The authors also conducted three interviews with youth leaders. TFAH selected young people via targeted outreach to youth-serving partner organizations. Participation was voluntary and serves to uplift the youth perspective and youth voices on substance misuse and suicide.
- The authors conducted quantitative data analysis using CDC's WONDER, CDC's Youth Risk Behavior Surveillance system, and SAMHSA's National Survey on Drug Use and Health informed trends data for both mortality and risk and protective factors.
- TFAH extracted additional information on trends, data, and recommendations from an environmental scan of existing literature on substance misuse and suicide among adolescents.

CONNECTING THE DOTS: ALIGNING CROSS-SECTOR APPROACHES TO REDUCE ADOLESCENT SUBSTANCE USE DISORDER AND SUICIDE

TFAH, with support from the Conrad N. Hilton Foundation, held a convening Connecting the Dots: Aligning Cross-Sector Approaches to Reduce Adolescent Substance Use Disorder and Suicide, in Washington, D.C., on October 18, 2018, to explore the roles of the health, justice, education, and youth-development sectors in reducing the factors and conditions contributing to adolescent substance misuse and suicide. The convening brought together 30 cross-sector thought leaders and policymakers, including federal officials, researchers, foundations, service providers, and advocates from the health, justice, education, and youth-development sectors.

Through facilitated discussion, panel presentations, and interactive exercises before and at the meeting, participants learned about the latest research and data on the characteristics of the adolescents at highest risk for poor outcomes in each sector; identified evidence-based strategies for reducing risks and increasing protective factors for substance misuse and suicide within and across the health, justice, and education sectors; and identified a central opportunity: increasing cross-sector collaboration to reduce risk and increase protective factors for substance misuse and suicide through identification and alignment of multi-sector strategies. Findings from the convening informed the framework and recommendations presented within this report.

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