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Local Supports to Break the Cycle: A Description of Intersectional Interventions to Address Adverse Childhood Experiences and Drug Overdose

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Abstract

Context: Adverse childhood experiences (ACEs), substance use disorders (SUDs), and overdose are interconnected issues impacting individuals and communities at multiple levels of the social ecology and across generations. Few studies describe approaches that intentionally and simultaneously address these issues.

Program: This paper examines activities of 15 sites across the country that were designed to simultaneously prevent ACEs, SUD, and overdose. This paper describes the work at the

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intersection as well as gaps and opportunities. Describing ways to implement intersectional programming may assist other organizations in taking similar steps in their communities.

Implementation: From December 2020 through July 15, 2023, funded sites received technical assistance from the National Association of County and City Health Officials and the Centers for Disease Control and Prevention for 18 months to support the implementation, adaptation, and/or expansion of evidence-based programs to address ACEs, SUD, and overdose.

Evaluation: Activities were coded to identify intersectional interventions that addressed ACEs, SUD, and overdose. Most of the ACEs prevention strategies and overdose prevention priority areas/guiding principles from which communities could choose were represented. Most activities were implemented with caregivers and families and addressed ACEs through interventions to lessen harm or to promote social norms. Primary prevention and coordination of resources were the most used overdose prevention priority area/guiding principle.

Discussion: It is possible to address the intersection of ACEs, SUD, and overdose on a local level. Opportunities to further address the intersection include incorporating more secondary and tertiary prevention strategies, expanding economic supports, and increasing the work focused on equity.

Keywords

adverse childhood experiences; intersection; overdose; prevention; substance use disorders

Context

Adverse childhood experiences (ACEs), are preventable, potentially traumatic events that occur in childhood (ages 0–17 years) such as neglect, experiencing or witnessing violence, and having a family member attempt or die by suicide.¹ They also include aspects of a child's environment that can undermine their sense of safety, stability, and bonding, such as growing up in a household with substance use, mental health conditions, or instability due to parental separation or incarceration of a parent, sibling, or other member of the household.^{1,2}

In 2021, 46.3 million people aged 12 or above engaged in behaviors consistent with a substance use disorder (SUD) diagnosis in the past year—24 million of these had an illicit drug use disorder.³ When a person is diagnosed with an SUD, it means that their recurrent alcohol and/or drug use is causing clinically significant impairment.⁴ Impairment often occurs in areas such as health, occupation, academics, and relationships.⁴ More than 5.6 million people aged 12 or above with an illicit drug use disorder had an opioid use disorder (OUD) in 2021.³

ACEs, SUD, and overdose are connected in a cycle that has a multigenerational impact.^{5,6} As the number of ACEs increases, so too does a person's risk for myriad negative health and well-being including substance use.² ACEs are associated with an increased risk for substance use during adolescence and adulthood such as prescription opioid misuse,^{7,8} marijuana and cocaine use,⁹ and SUD.^{10,11} They are also associated with overdose among adults with OUD.¹² Preventing overdose among parents and caregivers may mitigate or

prevent ACEs in the next generation.^{13,14} Additionally, substance use and ACEs are further connected considering substance use among parental figures or caregivers is a significant predictor of SUD among children and adolescents.^{15,16}

Recognizing the link between ACE-related trauma and substance use has led to the development and implementation of programs across multiple sectors. For example, the Addiction and Trauma Recovery Integration Model¹⁷ in California addresses the link between trauma and substance use within the justice system by integrating peer support, psychoeducation, and skills training for those impacted by both trauma and substance use or other addictive behaviors. The Supporting Perinatal Substance Use Prevention, Recovery, and Treatment (SuPPoRT) programs¹⁸ in Colorado offer services across various local community-based and health organizations to families who are impacted by or at risk for substance use during pregnancy. Such programs simultaneously aim to reduce risk factors for substance use, overdose, ACEs, and related harms across the social ecology, though limited research has been conducted to measure impact. One upstream approach to address SUD and overdose prevention is implementing programs that moderate, mitigate the impact of, and prevent ACEs by applying a multigenerational strategy/perspective.¹⁹ However, very few studies describe the design, use, or efficacy of approaches that simultaneously and intentionally address the intersection of these issues.

Approach

The National Association for County and City Health Officials, with support from the Centers for Disease Control and Prevention (CDC), launched the Comprehensive Community Approaches to Prevent Substance Use (CCAPS) program in the Fall of 2020. Through this program, the National Association for County and City Health Officials and CDC awarded 15 sites through 2 cohorts with 18-month grants of up to \$450 000 paired with technical assistance to support the implementation, adaptation, and/or expansion of evidence-based programs that simultaneously address ACEs, SUD, and overdose. The funded CCAPS sites included local health departments, academic institutions, and community-based organizations (CBOs) across the United States. The first cohort was required to implement one of CDC's ACEs Prevention Strategies (APS) with a focus population of people who use drugs or their families. The second cohort was required to address at least one of CDC's 6 APS¹ and/or 4 strategies for addressing SUD and overdose.^{20–22}

This paper aims to (1) describe the ACEs, SUD, and overdose prevention activities implemented by CCAPS-funded sites, (2) describe the populations of focus in the CCAPS projects, and (3) discuss opportunities for future programming at the intersection of these 3 public health issues.

Methods

Fifteen sites across 2 cohorts were competitively selected to receive CCAPS funding. Each cohort was funded for 18 months. The first cohort spanned December 2020 to July 2022, and the second cohort spanned December 2021 to July 2023. Table 1 in Supplemental

Digital Content, available at: <http://links.lww.com/JPHMP/B424>, provides more site details regarding location, funded work plan activities, and implementation partners. The activity was deemed by CDC not to be research as defined in 45 CFR 46.102(l), and IRB review was not required.

Activity inventory

Each funded site developed a work plan that guided their tasks throughout the 18-month grant period. Sites' work plans included 1 to 7 activities that were implemented during the funding cycle. APS include (1) promote social norms that protect against violence and adversity; (2) ensure a strong start for children; (3) connect youth to caring adults and activities; (4) strengthen economic supports to families; (5) teach skills; and (6) intervene to lessen immediate and long-term harms.¹ Strategies for addressing SUD and overdose, which were based on strategies in CDC's *Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States*²¹ and the Notice of Funding Opportunity from the CDC that was released in 2019: Overdose Data to Action²⁰ prevention strategies, included (1) establishing linkages to care, providers, and health systems support; (2) empowering persons to make safer choices; and (3) partnering with public safety and first responders. Sixty-eight work plan activities and associated implementation sectors and populations of focus were extracted and entered into an Excel spreadsheet for coding the overdose prevention and ACEs prevention and mitigation activities of funded sites. One activity tailored for medical residents was removed because it only touched briefly on ACEs and covered various unrelated topics. An activity needed to be a part of the CCAPS site's project work plan, address a specific population, and be implemented during the project period to be included.

Coding

Definitions and examples from CDC's *Adverse Childhood Experiences (ACEs) Prevention Resource Guide for Action: A Compilation of the Best Available Evidence* were used in the development of the codebook for APS.¹ This guide features the 6 strategies required in the CCAPS request for application that were drawn from the CDC Resources for Action²³ and designed to help communities take advantage of the best available evidence related to ACE prevention.

The US Department of Health and Human Services' *Overdose Prevention Priority Areas and Guiding Principles*,²² developed by a workgroup of experts in overdose prevention and SUD, were used to develop the codebook for overdose prevention activities. Priority areas include primary prevention, harm reduction, evidence-based treatment, recovery support, and the cross-cutting guiding principles such as enhancing equity, using data and evidence to guide actions, improving coordination, collaboration, integration across multiple sectors, and reducing stigma. While the Overdose Prevention Priority Areas and Guiding Principles are more extensive than the Overdose Prevention Strategies originally named in the CCAPS request for application, they were used for coding because they maximized the potential applicability for the field.

Coding categories included:

- *APS*: strengthen economic support to families, promote social norms that protect against violence and adversity, ensure a strong start for children, teach skills, intervene to lessen immediate and long-term harms, and connect youth to caring adults and activities.
- *Overdose Prevention Priority Areas and Guiding Principles (OPPA/OGP)*: primary prevention, harm reduction, evidence-based treatment, recovery support, equity, data and evidence, coordination, collaboration, integration, and reducing stigma.
- *Implementing Sectors*: CBOs, government, health care, public safety, and education.
- *Populations of Focus*: children 0 to 4 years old, children 5 to 12 years old, adolescents (13–18 years old), caregivers and families, CBO staff, educators, first responders and public safety personnel, government staff, health workers, justice-involved populations, pregnant or parenting women, people who use drugs, and the public.

The coding team consisted of 6 people. Extracted work plan activities were divided into 3 Excel spread-sheets for coding. Each spreadsheet was assigned to 2 members of the coding team, so each activity was coded twice. One member of the team compared all coding responses and identified coding discrepancies and then each pair of coders met separately to reconcile.

Evaluation Strategy

Final codes were uploaded into 1 file in Excel to identify their distributions using counts of each strategy, implementation sector, and population of focus. Analysis occurred from February 2023 to March 2023.

Results

Fifteen funded sites implemented a total of 68 activities (see Supplemental Digital Content, Table 1, available at: <http://links.lww.com/JPHMP/B424>). Ten activities could not be coded as an APS, and 3 could not be coded as an OPPA/OGP.

When assessing APS, 23 were coded as “intervene to lessen harms” and 18 activities were coded as “promote social norms.” Two activities were coded as “connect to caring adults,” 4 were coded as “ensure a strong start,” and 11 were coded as “teach skills.” No activities were coded as “strengthening economic supports to families.”

When assessing OPPA/OGP, 20 activities were coded as “primary prevention,” 12 were coded as “coordination, collaboration, and integration,” and 10 were coded as “anti-stigma work,” 9 activities were coded as “harm reduction,” 8 were coded as “recovery support,” 4 were coded as “evidence-based treatment,” and 3 were coded as “data and evidence.” There are 3 activities that could not be coded for an OPPA/OGP as they were deemed too far upstream or unrelated to overdose prevention.

Figure 1 provides a visual representation of all overlapping APS and OPPA/OGP. Of the 23 activities that were coded as the APS “intervene to lessen harms,” 7 were coded as “coordination, collaboration, and integration.” These activities included developing care plans for caregivers and implementing parenting programs while also providing referral to overdose prevention resources in the community. Five activities were also coded as “recovery support.” These interventions included hiring a family support specialist to work with caregivers to provide counseling and education on ACEs, develop treatment plans, and connect individuals to recovery services. Three activities were also coded as “primary prevention.” An example of these activities was screening for ACEs and SUDs and providing cognitive behavior therapy and trauma-informed care for adolescents with ACEs. Three interventions were also coded as “harm reduction”; these activities included referring individuals who have experienced a nonfatal overdose to harm reduction services to minimize the risk of future overdose and/or substance use. Three interventions were coded as “evidence-based treatment.” These activities consisted of academic detailing to providers on medications for OUDs and care plans for pregnant women with an OUD. Lastly, one activity was coded as *data and evidence* and involved tracking new ACEs and overdose indicators to inform their programming. One could not be coded as an OPPA/OGP.

Ten of the 18 activities coded as “promoting social norms” were coded as “reducing stigma work.” These activities include conducting training with community members to increase knowledge regarding ACEs and posttraumatic stress disorder and how they are related to SUDs. Additionally, 4 interventions were coded as “primary prevention” and included educational activities that increase knowledge of ACEs and SUDs and awareness of available resources in the community. Lastly, 2 activities were also coded as “coordination, collaboration, and integration.” These interventions consisted of ACEs and SUD outreach to at-risk families and referrals to overdose prevention services. Two activities could not be coded as an OPPA/OGP.

As seen in Supplemental Digital Content, Table 1, available at: <http://links.lww.com/JPHMP/B424>, CCAPS sites’ activities were implemented by all 5 sectors for which activities were coded. “Community-based organizations (CBOs)” implemented 32 activities, “government organizations” implemented 21, the “education sector” implemented 11, “health care organizations” implemented 3, and “public safety” implemented 1 activity.

Two activities’ population of focus was “adolescents,” 21 focused on “caregivers and families,” 6 activities were focused on “CBO staff,” one was for “children 0–4 years old,” and 3 activities’ population of focus was “children 5–12 years old.” One activity’s population of focus was “educators,” 3 was “first responders and public safety personnel,” 2 was “government staff,” 3 was “health workers,” 5 was “justice-involved populations,” 4 was “pregnant or parenting women,” 12 was the “public,” and 5 activities’ population of focus was “people who use drugs.”

Discussion

Fifteen sites from 12 states designed and implemented activities with partners that simultaneously worked to prevent and mitigate the impact of ACEs, SUD, and overdose.

These sites, divided into two, 18-month cohorts, participated in the CCAPS project between December 2020 and July 2023. In many instances, the CCAPS sites worked closely with partners across sectors to implement their proposed activities; partners included CBOs, local police departments, academic institutions, hospitals, and public school systems among others. Most of the 68 work plan activities focused on caregivers and families and addressed ACEs by “intervening to lessen harms” or “promoting social norms.” “Primary prevention” was the most common OPPA/OGP used for work plan activities that could be coded. The CCAPS project demonstrated that it is possible, in a relatively short period of time (ie, 18 months), to implement or expand activities that address the intersection of ACEs, SUD, and overdose at the local level, thereby simultaneously addressing multiple public health issues. Given that the recipients were required to continue and expand the implementation of programs with established measures of fidelity during the funding periods, the fidelity to the evidence-based and evidence-informed programming was likely maintained during the funding period.

No sites engaged in activities coded as the OPPA/OGP “equity.” Prevention efforts that address the stark disparities among at-risk and marginalized populations may have a larger impact on ACEs, SUD, and overdose. Authors recognized that some of the activities had equity considerations for populations of focus built in. For example, the Better Together²⁴ research-informed program developed by Utah State University was translated into Spanish (ie, Juntos Es Mejor); this activity was coded as “primary prevention.” The activity also directly increased access to a parent training program for the Spanish-speaking population.

Strengths of the CCAPS project included the use of multiple cohorts spanning geographic regions, the inclusion of several types of agencies and organizations, various populations of focus and implementing sectors, and applying most of the APS and OPPA/OGP. To develop and implement programming, CCAPS sites engaged with many different partners and utilized current local and state data to inform project design. The coders and authors for this paper were diverse and brought clinical, public health, and evaluation expertise to the coding and analysis of activities.

A limitation of this paper is that CCAPS sites were scored during the competitive process based on the work each was already doing on the intersection of substance use and ACEs in addition to their proposed work plans. Other co-occurring intersection activities exist among the sites’ other non-CCAPS work, but they were not reflected here as only CCAPS project work plan activities were included in the current analysis for coding. Activities were not coded for the level of prevention they reflected. Finally, this paper and its analyses did not consider outcomes, sustainability, or the fidelity of implementation related to the funded activities or their categories, as the primary focus of this paper was to demonstrate the feasibility of integrating ACEs, SUD, and overdose prevention efforts. This additional information, while outside of the scope of this paper, would be helpful for understanding the effectiveness of the strategies used most frequently at the intersection of ACEs, SUD, and overdose. A resource that shares some of the implementation data and outcomes of the CCAPS work plan strategies is currently under development.

Many in public health consider ACEs prevention to be an upstream approach for preventing substance use and overdose. The activities described in this paper, however, illustrate that there are ways to address the intersection of ACEs, SUD, and overdose beyond primary prevention, at the secondary and tertiary levels,¹ although there is a need to support more upstream, primary prevention strategies when working with people who use drugs and more secondary and tertiary prevention strategies in work focus on children and youth. Secondary prevention aims to identify persons at high risk for overdose while tertiary prevention involves managing SUD symptoms or diagnoses once present.²⁹ For example, 5 CCAPS sites implemented the Strengthening Families (SF) program that offers evidence-based family skills training at both the secondary and tertiary levels and seeks to prevent ACEs, SUD, and overdose.^{25–27} SF seeks to prevent and/or interrupt current family patterns related to ACEs (eg, conflict, poor communication, and lack of parenting skills) and to improve protective factors (eg, parental involvement, family bonding, and prosocial friends) for future risks such as depression and substance use.³⁰ SF participation has been associated with decreased substance use among youth whose parents report substance use.²⁶

None of the CCAPS sites conducted activities that could be coded as the APS “strengthening economic supports to families.” Financial hardship can result in physical neglect and may increase parents’ likelihood of experiencing stress, depression, and conflict, in turn raising the risk for violence and other ACEs.³¹ Economic and employment supports can strengthen household financial security and stability.¹ While no CCAPS work plan activities reflected this prevention strategy, several of the sites were doing this work outside of the scope of the CCAPS project. Sites were using other funding to support food pantries, case workers, transportation, and educational programming to assist families in understanding, applying for, and receiving aid to support basic needs. Braiding and bridging funding is a highly recommended strategy for carrying out complex intersectional work on issues with shared risk and protective factors.²⁸ These sites may be thinking creatively about how to conduct comprehensive ACE, SUD, and overdose prevention and mitigation. Future opportunities might consider offering funding and technical assistance to support the planning, implementation, or ongoing operations of economic and employment support programs as they are a proven ACE prevention strategy and critical to providing support for people who use drugs. Future studies of community programs should include evaluation data and outcomes.

Conclusion

Opportunities exist to address the intersection of ACEs, SUD, and overdose in work across all 3 levels of prevention. This paper described the ACEs, SUD, and overdose prevention efforts of 15 sites that participated in the 18-month CCAPS project. Sites implemented 68 prevention activities tailored for youth, adults, families, first responders, and the public. Coding and analysis of these activities revealed that many organizations used the APS of “intervening to lessen harms” and “promotion of social norms.” The most used OPPA/OGP were “primary prevention” and “coordination, collaboration, and integration.” The authors noted that although CCAPS sites’ work plans did not include activities that were coded as the APS of “strengthening economic supports” or the OPPA/OGP of “equity,” these sites may be conducting some of this work through different funding

streams and/or teams in their organizations. Nevertheless, it is quite feasible for local health departments, academic institutions, and community organizations to implement activities that address the intersection of ACEs, SUD, and overdose prevention in ways that align with current partnerships, existing work, and the needs of the communities served. Future funding and technical assistance opportunities should encourage, support, and guide sites in implementing activities that intentionally and simultaneously prevent and address ACEs, SUD, and overdose.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Implications for Policy & Practice

- The activities described in this paper illustrate that there are ways to address the intersection of ACEs, SUD, and overdose beyond primary prevention, at the secondary and tertiary levels.¹ For example, 5 CCAPS sites implemented the Strengthening Families (SF) program that offers evidence-based family skills training at both the secondary and tertiary levels and seeks to prevent ACEs, SUD, and overdose.^{25–27}
- Braiding and bridging funding is a highly recommended strategy for carrying out complex intersectional work on issues with shared risk and protective factors.²⁸ For example, while no CCAPS sites conducted activities that could be coded as the APS “strengthening economic supports to families” as a part of their CCAPS work plans, several were doing this work outside of the scope of the CCAPS project. They appeared to be thinking creatively about how to conduct comprehensive ACE, SUD, and overdose prevention and mitigation using various funding streams.
- Future funding opportunities might consider offering funding and technical assistance to support the planning, implementation, or ongoing operations of programs that focus on economic and employment support programs as they are a proven ACE prevention strategy and critical to providing support for people who use drugs.

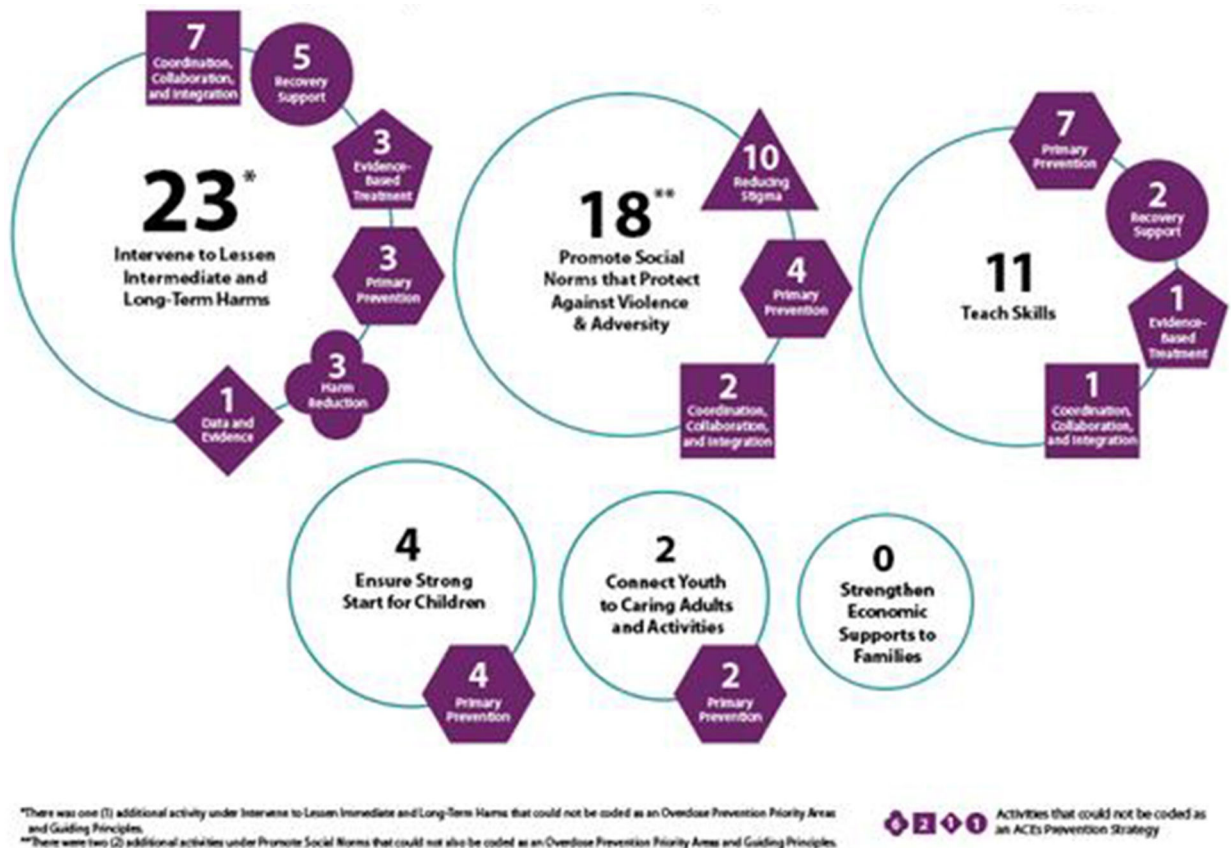


FIGURE 1.
Comprehensive Community Approaches to Prevent Substance Use Sites' Activities Coded by Overdose Prevention Priority Areas and Guiding Principles and Stratified by ACEs Prevention Strategy.