

Acknowledgment from the Director

On behalf of the Opioid Response Coordination Office (ORCO), I am pleased to present our Tennessee (TN) High Impact Areas Program Bi-Annual Report.

This report provides important updates on the opioid crisis in TN and the response efforts that are taking place. Our office is also doing everything in its power to aid response efforts to promote effective strategies, and to increase access to tools that have shown to be effective in decreasing opioid related morbidity and mortality.

Lastly, I want to acknowledge the incredible efforts of the ORCO Team, our High Impact Programs, and community partners to keep the TN public health system operational during these challenging times. The work of ending overdose and addiction continues to grow in importance and value in society.

Respectfully Submitted,

Amy M. Murawski

Director Opioid Response Coordination Office

Acknowledgments

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Special thanks to the report contributors (in alphabetical order): Hector Carrasco, Shannon De Pont, Vindhya Kakarla, Amy Murawski and Kristen Zak.

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Introduction

The country is facing a grave overdose epidemic that has further been worsened by the COVID-19 pandemic. Provisional reports from the CDC show that drug overdoses increased in the US by almost 30% in 2020, ending the year with 93,331 reported deaths (figure 1).¹ This is the highest level ever recorded. Tennessee is among the top ten states to have witnessed its highest percent change in drug overdose deaths from 2019 to 2020. Data from Tennessee's Death Statistical Files indicates a 45% increase in drug overdose deaths between 2019 and 2020, which

is the largest year-to-year increase during the past five years (figure 2).^{2,3} Non-fatal overdoses from opioids have seen an increase during the first quarter of 2021 as compared to 2020 (Figure 3). Figure 4 shows the number of non-fatal overdoses reported by hospitals to TDH's Drug Overdose Reporting System by opioid class (heroin vs. all opioids excluding heroin). Figure 5 illustrates crude rates of these hospital-reported non-fatal opioid overdoses by county. While metropolitan areas in the state (such as Nashville, Knoxville, Chattanooga, and Memphis) are often highlighted due to their rapidly growing population size and urban nature, it is important to acknowledge that Tennessee is largely a rural state and the magnitude of burden due to overdoses in rural counties is also substantial.

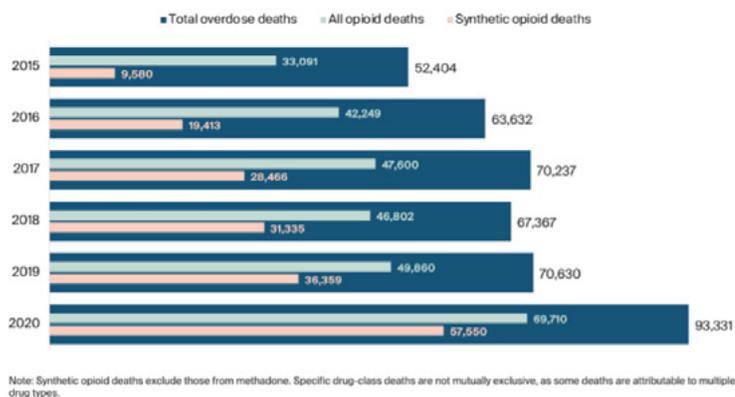


Figure 1. Annual drug overdose deaths in the United States, CDC Wonder (counts for Dec 2020 are not final). Source: Jesse C. Baumgartner and David C. Radley, "The Drug Overdose Mortality Toll in 2020 and Near-Term Actions for Addressing It," To the Point (blog), Commonwealth Fund, July 15, 2021, updated Aug. 16, 2021.

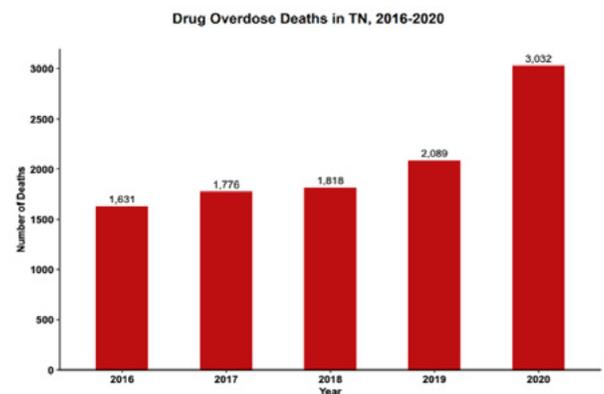


Figure 2. Drug overdose deaths in Tennessee, 2016-2020 (limited to TN residents). Source: Tennessee Department of Health, Office of Informatics and Analytics, TN Death Statistical File

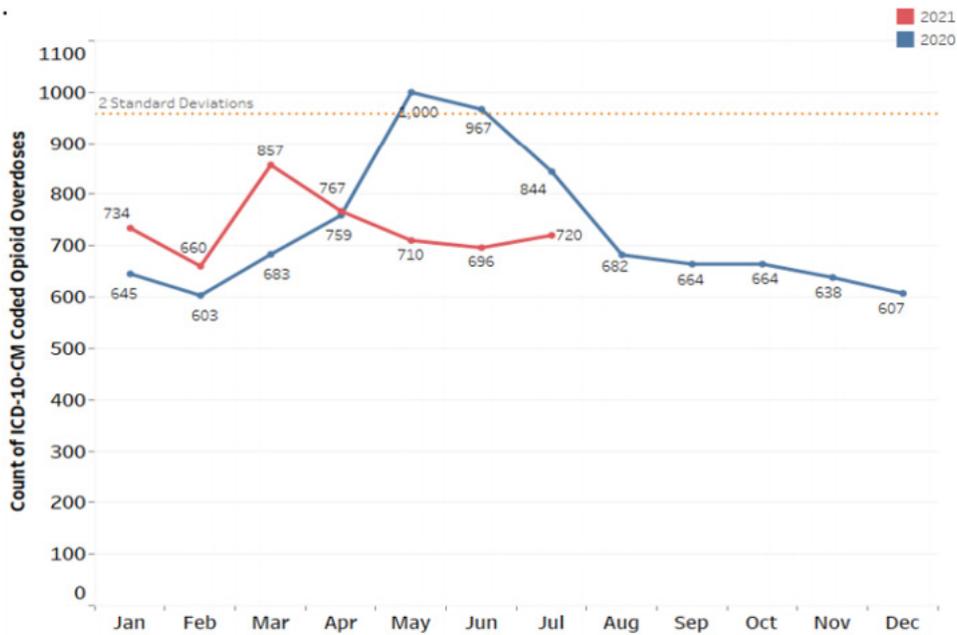


Figure 3. Hospital-reported non-fatal opioid overdoses by month. Source: Tennessee Department of Health, Office of Informatics and Analytics, Drug Overdose Reporting System

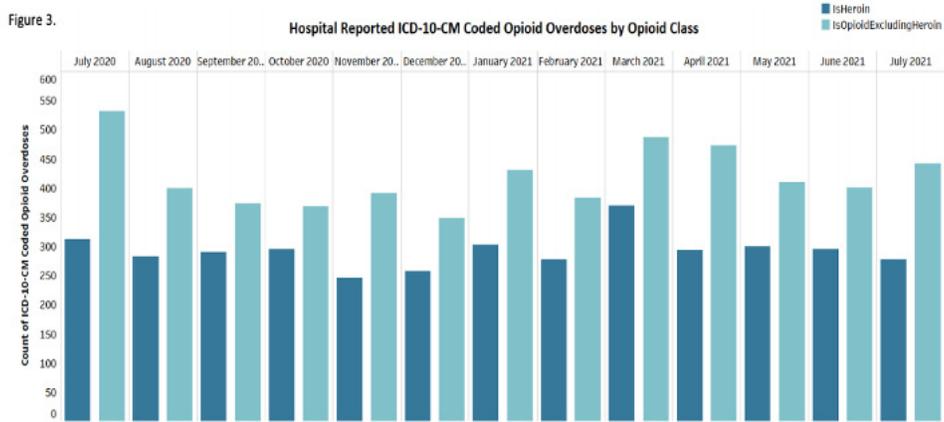


Figure 4. Hospital-related non-fatal opioid overdoses by opioid class. Source: Tennessee Department of Health, Office of Informatics and Analytics, Drug Overdose Reporting System

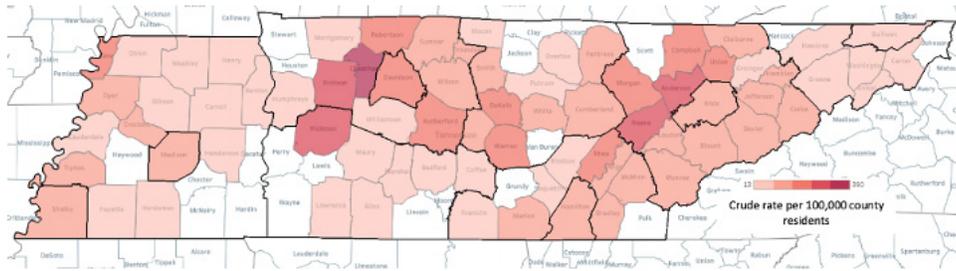
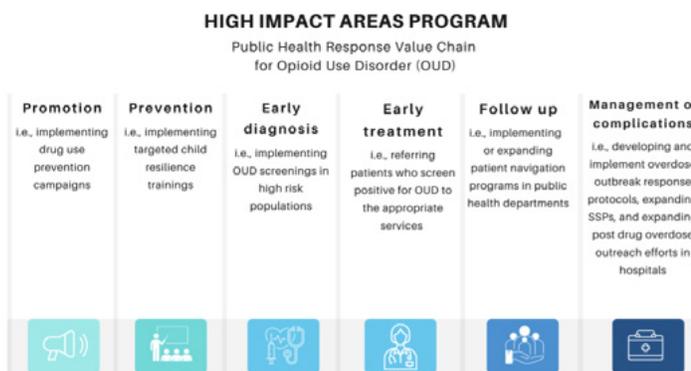


Figure 5. Crude rate* (per 100,000 county residents) of hospital-reported non-fatal opioid overdoses, August 2020-July 2021. Source: Tennessee Department of Health, Office of Informatics and Analytics, Drug Overdose Reporting System. Note: Counts are based on patient residence zip code as reported by the hospital facility to Tennessee Department of Health Drug Overdose Reporting System. *Crude rates for counties with an overdose count <10 are not available. When the number of overdoses used to compute a rate is very small, the value is considered unstable.

Given the serious nature of this epidemic and its negative consequences on individuals and communities, the scientific community has written extensively about the multifactorial nature of addiction and how responses must be comprehensive in scope and adaptable to implementation.^{2,3} The High Impact Areas program (HIA) - launched in the fall of 2019 by the Opioid Response Coordination Office (ORCO) with a cooperative agreement with the Centers for Disease Control and Prevention (CDC) - takes into consideration this complexity by implementing a myriad of evidence-informed activities throughout the continuum of care. Using a continuum of care logic model has enabled the HIA program to 1) avoid duplication of tasks with local stakeholders already working on opioid addiction, 2) ensure accountability by distributing responsibilities among local actors, and 3) provide several project options to communities based on their needs and capabilities to implement them. In figure 6, we highlight selected projects that the HIA program offers throughout the continuum of care.



The HIA program is the result of an intentional planning process. In determining how to allocate CDC resources in the state, TDH leadership established specific goals to provide as much local support as possible, to have as much impact as possible, and to focus on overdose prevention by prioritizing those at risk and intervening before they face the most adverse consequences of substance use disorder. To meet these goals, TDH decided to focus on communities that are the most impacted by the substance misuse epidemic and to allocate enough resources to make a real, measurable impact.

Figure 6. Selected High Impact Areas projects throughout the continuum of care

Hence, ORCO and the Office of Informatics and Analytics (OIA) examined a year of non-fatal overdose counts to identify highly impacted areas and engaged with Metro, regional, and local public health leadership for further input on resource allocation. Then, they convened multi-sector workgroups to examine regional and local data to learn more about evidence-based interventions and build consensus on community priorities. Through these efforts, local communities determined which interventions to implement and how resources would be allocated. Out of these efforts came ORCO's HIA program. The HIA program funds five distinct High-Impact Areas-- 3 established (East, Middle, and West) and two newly formed (Southeast and Northeast). The program is committed to local implementation of effective response and interventions with support from ORCO in funding, monitoring and evaluation, and technical assistance.

The HIA Program encourages communities to utilize the granted resources by implementing evidence-based public health interventions recommended by CDC. The CDC endorsed project list includes a broad range of multidisciplinary interventions such as developing multi-sector task forces, creating overdose outbreak response plans, introducing Medications for Opioid Use Disorders in correctional settings, developing criminal justice diversion and syringes services programs, launching drug use prevention education campaigns, and implementing navigation programs for patients at high risk of a drug overdose.

Table 1 describes the projects being implemented in each HIA and the counties where they operate.

Projects	East Knox, Cocke, Jefferson, Roane, and Sevier	Middle Davidson, Montgomery, Cheatham, and Rutherford	West Shelby	Northeast All counties	Southeast All counties
Substance Use Prevention Multidisciplinary Taskforce	✓	✓	✓	✓	✓
Overdose Outbreak Response Plan	✓	✓	✓	✓	✓
Prevention activities	✓	✓	✓		✓
Navigate patients to receive treatment	✓	✓	✓		
ED Discharge protocol	✓	✓			✓
Syringes Services Program expansion	✓		✓		
MOUD access in Correctional facilities	✓			✓	
Pre-trial diversion program				✓	

Table 1. Projects implemented by HIA

This report is produced biannually, and we hope you use this report to learn more about the High-Impact Areas and follow their efforts and progress as we work together to address the substance use epidemic in Tennessee. In the following sections, we describe the projects implemented by each HIA team and highlight some significant achievements.

Visual HIA Program Timeline

High Impact Areas Timeline

2019

- OD2A Grant application submission (Office of Informatics and Analytics & ORCO)
- HIA designations and confirmation
- HIA workshops with American Institute for Research (AIR)
- Introduce evidence-based activities

2020

- Onboard HIA staff and initiate program activities
- Develop monitoring and evaluation plans
- Initiate learning collaboratives
- Look for additional funding opportunities

2021/22

- Grant activities in full operation
- OD2A funding extended to 2024
- Expand full funding to Northeast & Southeast HIAs
- Impact evaluations analysis
- Apply for new funding

Projects Updates by HIA

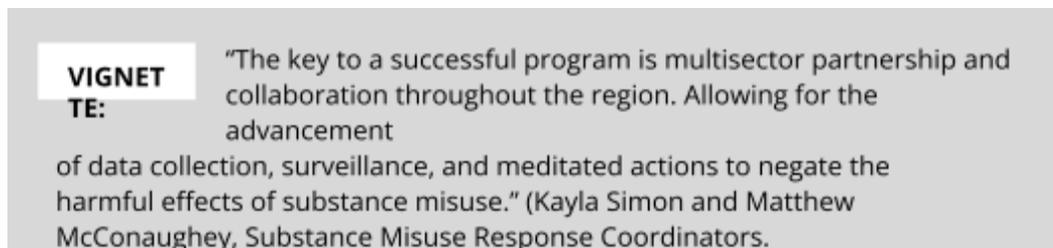
East HIA

From March to August 2021 East HIA team has made significant progress in implementing the High Impact Areas Program in 1) a highly successful multi-sector task force, which has served as an example for the creation of additional HIAs task forces 2) development of a comprehensive Overdose Monitoring and Response (OMAR) plan, and 3) model of metro-region collaboration resulting in increased linkage to care opportunities and best practices sharing.

The High Impact Area (HIA) Program in the East Tennessee was launched in 2020, and covers five counties: Sevier, Roane, Cocke, Knox and Jefferson.

HIA Task Force

Since the start, the East Tennessee HIA knew that the key to success was collaboration. With that idea in mind, the team recruited members from across sectors to their task force. During the quarterly task force meetings, the members assess the progress of the multiple projects they oversee, discuss challenges, and create support and accountability for East HIA activities. Today, the HIA Task Force of East Tennessee has more than 42 members representing more than ten sectors including public safety, prevention coalitions, federally qualified health clinics, harm reduction, hospitals, public health, judicial, behavioral health, EMS, and substance use disorder treatment providers. See in figure 7 some of the functions of an HIA Task Force.



VIGNETTE: "The key to a successful program is multisector partnership and collaboration throughout the region. Allowing for the advancement of data collection, surveillance, and meditated actions to negate the harmful effects of substance misuse." (Kayla Simon and Matthew McConaughy, Substance Misuse Response Coordinators.)

Several partnerships have been established through the task force formation, including Choice Health Network, Covenant hospital system, EMS, Metro Drug Coalition, Substance Abuse Prevention (ASAP) of Anderson County, Rescue 180, and the 7th Judicial Drug Task Force. Through the 7th Judicial Drug Task Force partnership, Knox County Health Department received several referrals and have successfully linked clients to treatment and other services.

Figure 7. Functions of an HIA Taskforce

Currently, the task force is striving to make their projects accountable to the population they serve by including members who have experience living with substance use disorder and mental health conditions.

Overdose Monitoring and Response (OMAR) Plan

In 2021, Knox County Health Department (KCHD) finalized and initiated their Overdose Monitoring and Response (OMAR) plan. This finalized plan was accomplished through community collaboration and intentionality to respond to opioid overdoses from a multi-sector perspective. Specifically, East HIA utilized the East HIA Task Force to form five focus groups consisting of stakeholders from various sectors, to assess local assets, gaps, protocols, and perspectives which helped form the OMAR plan. After initiating the response plan, KCHD met internally with their lead epidemiologist to discuss the drug overdose spike response in an after-action meeting. The planning was led by CDC Foundation's (CDCF) Public Health Analyst for TN leveraging a relationship between KCDH and the CDCF. The OMAR plan has been presented and well received by a working group of epidemiologists from various OD2A funded jurisdictions.

Similarly, the East Regional Health Department (ETRO) have drafted their own overdose response plan and are finalizing plans for covering the entire 15 county region. ETRO was challenged in accessing timely data sources from external partners were ultimately able to connect with key contacts and acquire access to these data sources.

As fatal and non-fatal overdose "outbreaks" continue to be a top public health concern across the country, and given the ongoing epidemic in Tennessee, KCHD is at high risk for an overdose outbreak. KCHD's first tabletop exercise is planned for fall 2021. The OMAR plan provides the framework, communication, and information to assist overdose response efforts in the event of an outbreak. It outlines a tiered system of alerts in the event of confirmed overdose "spikes" or increased activity in suspected substance use overdoses. The plan involves partners from public health, hospital systems and emergency departments, EMS, drug intelligence, public safety, treatment providers, social services providers, K-12 schools, colleges, and universities. The virtual tabletop exercise in fall 2021 will engage these partners to help them understand their roles in the plan and how the information provided in spike alerts can support harm reduction strategies.

Substance Use Prevention Education

Prevention Coalitions have established and well-documented success in galvanizing community to address substance use disorder. Utilizing the existing East HIA Task Force, East HIA collaborated with Metro Drug Coalition (MDC) and as of August 2021 has finalized a comprehensive mentoring toolkit to help promote and establish new Prevention Coalitions. The goal of the partnership with Metro Drug Coalition is to use the toolkit to help inform the creation of new Prevention Coalitions in three counties (Campbell, Cocke and Grainger). The creation and implementation of the mentoring toolkit is a first for TN Coalitions and as such outline's concrete examples for future Coalitions to follow to help establish themselves. East HIA has identified the opportunity for further mentorship efforts if resources could be directed towards staff time in addition to the mentorship toolkit.

Medications for Opioid Use Disorder (MOUD) in Jefferson County Jail

According to the CDC, providing MAT [MOUD] in jails and prisons not only brings healthcare in correctional facilities in line with current medical standards for the treatment of this medical disorder, but it also improves the likelihood that incarcerated persons will engage in care in the future and lowers the likelihood of relapse, problem opioid use, and risky opioid use after release.⁴ East HIA is supporting in the development of the first of its kind in the state MOUD program in a correctional setting in Jefferson County. The program provides treatment continuity for patient inmates being treated for OUD prior to incarceration as well as induction for patient inmates diagnosed with OUD upon incarceration at the Jefferson County Detention Center. Treatment is overseen by an opioid treatment program (OTP) in collaboration with the correctional medical provider. As part of the program, TDH funded a Corrections Navigator and Program Manager who developed the MOUD treatment protocol in collaboration with corrections and medical professionals and work directly with patient inmates to ensure continuity of care prior to release. The work group/stakeholders in the project have developed policies and procedures for the program including Medication protocols and workflow to begin program implementation. The treating physician provided in person training on MOUD stigma and MOUD program implementation to jail medical staff to administer MOUD. The program began seeing patients on August 9, 2021.

Emergency Department Discharge Protocol for Patients with Substance Use Disorder

The evidence has shown that having a standardized protocol to discharge patients after a drug overdose from Emergency Departments (ED) significantly increased engagement in addiction treatment, reduced self-reported illicit opioid use and reduces subsequent overdoses.^{5,6} East HIA has established a formal working relationship with Covenant Hospital System to create emergency department discharge protocols for people with Substance Use Disorder (SUD) and their families with a focus on preventing drug overdose deaths. To support these efforts, the Knox County Health Department (KCHD) is providing education on the science of addiction and best practices for supporting Persons Who Use Drugs (PWUD). Additionally, KCHD is providing funding to support the hiring of two Certified Peer Recovery Specialist positions to provide immediate evidence-based linkage to care services to those who have overdosed and PWUDs. The program's efforts are being led by the KCHD Clinical Nurse Educator who is overseeing a workgroup including the core Fort Sanders Regional Peer Navigation Team focused on drafting referral workflow process and procedures as of August 2021. Despite logistical barriers caused by COVID-19 case increases and staff diversion, the project has taken considerable steps to move toward implementation. A barrier identified by this project is acceptance of Medication for Opioid Use Disorder (MOUD) in ED setting by emergency department physicians and other staff in the hospitals. Although MOUD is considered a best practice in the field, this course of treatment is still new to emergency departments in Tennessee. More education and support must be provided to empower providers to take this approach.

Linkage to Care in Knox Health Department

Utilizing input from people with experience living with SUD and community partners, Knox County Health Department (KCHD) created a Harm Reduction Navigator (HRN) position to provide SUD screening and linkage to care services. This project marks the first time KCHD is directly offering harm reduction services to both health department clients and external overdose surveillance contacts who are at risk for the consequences of substance misuse. Services include non-judgmental support for current drug users, overdose prevention, harm reduction education, referrals to services including Hepatitis C treatment, syringe services, naloxone distribution, in patient and out-patient substance abuse treatment, mental health care, and social services. In 2020, KCHD continued their partnership with the 7th Judicial Task Force, a drug and violent crimes task force in Anderson County Tennessee, yielding several referrals and linkages for clients at risk for overdose. KCHD has noted there have been instances in which a client has agreed to treatment and has no transportation and ultimately creates a barrier to services. TDH is exploring opportunities to intervene on the transportation barrier with ongoing conversations between with TDH and KCHD.

The KCHD HRN, HR Program Manager, Health Informatic Team, and Quality Improvement Manger meet bi-weekly to discuss the current state and strategies of standardization and implementation of Harm Reduction Questionnaires and SBIRT (Cage-Aid) at both the KCHD Main Office and West Knoxville offices. The communication with Harm Reduction Navigation and Clinical staff continues to improve as evidenced by successful and efficient client contact in a timely manner. The improved communication pattern has also improved successful linkage to care with the clients that have agreed to receive Harm Reduction Navigation.

Stories from the Field: Donna is from Knoxville, Tennessee and was released from the Knox County Detention Facility in April of 2021. She found help with her addiction by participating in a sober living program, but after a lapse in sobriety Donna knew she needed help which she found in relapse prevention techniques from the KCHD Harm Reduction Navigator and Recovery Coaching from the Metro Drug Coalition. Donna was successfully linked with a female recovery coach and two female recovery peers who have helped her access recovery programs and Naloxone. The Recovery Coach and female peers accompanied Donna to Metro Drug Coalition for Naloxone. Donna now has access to the "In The Rooms" Recovery Streaming services app. She now a patient with Cherokee Health Systems and agreed to a weekly check with Harm Reduction Navigator. Donna was thankful for all the help and is quoted saying, "I didn't know y'all did this at the Health Dept and I am glad cause you care."

Linkage to Care in East Region Health Department EMS Brochure

East Regional Health Department (ETRO) created their East Tennessee Regional Substance Use Disorder Resources Brochure to be used in partnership with Emergency Medical Services (EMS). EMS will distribute the brochure to individuals who have experienced a drug overdose and facilitate referral to services such as the TN REDLINE, local syringe services programs, and the regional overdose prevention services. As of September 2021, the EMS brochure will be introduced and distributed to the Region II EMS Associations.

Linkage to Care in East Region Health Department HRN Roane and Sevier Co.

East Regional Health Department (ETRO) created two Harm Reduction Navigator (HRN) positions to provide SUD screening and linkage to care services. Services include non-judgmental support for current drug users, overdose prevention, harm reduction education, referrals to services including Hepatitis C treatment, syringe services, naloxone distribution, in-patient and out-patient substance abuse treatment, mental health care, and social services. As a result of linkage to care initiation, ETRO sought to include the SUD screening tool, CAGE-AID, into all state public health clinics. Roane and Sevier counties will pilot the CAGE-AID to determine efficacy of statewide implementation. This effort was led by ETRO HIA Staff and supported by the KCHD HIA staff, underscoring the collaborative effort of the East HIA.

Syringe Services Program Expansion

According to the CDC, Syringe Services Programs (SSPs) are a key component of overdose prevention strategies, because they can facilitate access to and uptake of services and interventions for reducing overdose, reduce risk of blood-borne infections, enhance health and wellbeing, and improve public health and public safety.⁴ Established Community Based Organization, Choice Health Network (CHN), has conducted a successful SSP in Knox County resulting in proven positive outcomes and community integration. CHN had identified residents from outlying rural counties who are traveling to Knoxville on a weekly basis for syringe services. CHN expanded their reach, piloting the program in rural Cocke county. As part of the Syringe Services program, CHN also provides HIV testing and counseling, STI screening, MOUD referrals, Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP) services, Hepatitis C education and outreach, on-site laboratory testing and peer navigator services. From October 2020 through July 2021, CHN has served 729 unique clients in the Cocke County site and collected over 120,000 syringes while providing over 130,000 new syringes to clients as well as distributing 9,604 naloxone doses with a reported 401 overdose reversals- meaning lives saved. CHN has noted an opportunity to expand to Campbell County and is pursuing a location to initiate a new site, hoping to expand services farther in the region.

Stories from the Field: My husband and I have been a part of Choice Health Network's SSP since the summer of 2019. He died from an overdose. The day before he died, we had plenty of naloxone, but he was locked in a public restroom, and no one could get to him in time. When I finally got the door open, there was nothing paramedics could do. The circumstances surrounding my husband's death were unfortunate, but preventable with the resources you provide. He was extremely intelligent with a 4.0 GPA, studying to be an architect. I appreciate the harm reduction services Choice Health Network provides; my sister has been revived multiple times with naloxone I have received. It gave her the time and perspective to stop using, and she is in the process of regaining custody of her daughter. She would never have had the chance to do that, and I would be writing yet another eulogy if not for the naloxone you distribute. The work you do really is saving lives, and I can't thank you enough for that. [Anonymous]

Middle HIA

The High Impact Areas (HIA) program in the Middle TN Region was launched in 2020, and it covers four counties: Rutherford, Montgomery, Cheatham, and Davidson. Since the beginning, Middle team has made significant progress in implementing the High Impact Area Program. Among their multiple achievements in 2020-2021, they managed to get access to two primary data sources in Cheatham and Montgomery: 1) the Medical Examiner (ME) database, which provides records of drug overdose deaths investigated by county medical examiners, and 2) Emergency Medical Services (EMS) data through ODMAP, a drug overdose mapping visualization and analytics interface that provides near real-time suspected overdose surveillance data. Having access to those two additional databases enabled Middle team to have a more comprehensive picture of trends and characteristics of drug overdoses in the counties. This while allowing them to share de-identified data with essential stakeholders who can save lives and prevent drug overdoses in the field like the Regional Overdose Prevention Specialists (ROPS), EMS, treatment providers, and public health officials.

**VIGNET
TE:**

"[...] The name of this grant is Data to Action. If we don't have access to the data, we can't get to the action." Madelynne Myers, Substance Misuse Response Coordinator in Opioid/Overdose Response

& Reduction Program at the Davidson Metro Public Health Department.

HIAs Task Force

The Task Force organizes relevant community representatives from multiple sectors to respond effectively to the current drug addiction epidemic in their communities. The Task Force includes law enforcement and EMS agencies, school administrators, elected officials, faith-based organizations, non-governmental organizations, treatment providers, substance use prevention-related coalitions, and people and families affected by addiction.

Middle team had their first multidisciplinary task force meeting on July 10th, 2021 with 21 members representing all the counties where the team works. During the meeting, representatives from the four counties discussed fatal and non-fatal drug overdoses trends, exchanged information, insights and discussed each of the HIA projects they oversee. The next task force meeting is scheduled for October 12th and will focus on discussing how to increase linkage to care services for people with SUD in the region.

**VIGNET
TE:**

"The Task Force meetings are a space to link people from our counties with people from other counties [...] and these partnerships are crucial for sustainability." Aubrenie Jones, Substance

Misuse Response Coordinator in Rutherford County.

HIA Overdose Response Plan

This project uses daily drug overdose surveillance across available overdose databases to assess unusual activity and spearhead an effective community response when overdoses surpass expected estimates.

The Middle team continues refining its Overdose Outbreak Response plan. The purpose is to create a comprehensive step-by-step response plan that informs all important stakeholders of what to do when a drug overdose spike happens. In addition to activating their overdose response plan multiple times in the counties affected, they also added two innovations during 2021. First, as part of a five counties nationwide pilot led by the Partnership to End Addiction, Davidson County started sending public drug overdose spike alerts using an SMS system. Second, they started sending alerts to first responders, local leaders, and government representatives to alert them of changes in drug toxicology reports of some substances. For example, on February 21st, 2021, they sent an alert to inform local agencies and organizations of the presence of fake Xanax pills. Also, Middle team also presented their Overdose Response plan in the statewide prevention coalitions meeting and have regular data-sharing meetings with actors on the field like the Recovery Overdose Prevention Specialists (ROPS) and Davidson's police to help them direct their naloxone distribution efforts and identify drug overdose hotspots, respectively. See figure 8 to see the steps on Middle Outbreak Response Plan.

VIGNET TE: In one data sharing meeting with a community leader, the person said, "I had years waiting for this type of information. I always wanted to know where I should go to save lives [...] My position is all about helping people. It is hard to respond when I receive the information six weeks later. This information will help us greatly."

Regional Overdose Prevention Specialist (ROPS)

Outbreak Response Plan



Figure 8. Middle Team Overdose Outbreak Response Plan

Prevention Activities

Life Skills Training in Rutherford County Schools: Life Skills is an evidence-based training that helps to prevent drug use in youth.⁷ This project will offer Life Skills training in Elementary, Middle, and High Schools in Smyrna, a town in Rutherford County. The training was completed on August 27th, 2020, with a 100% completion rate. Twenty teachers were trained, and enough materials have been delivered to the schools to teach the program to 1,000+ students in the following two years. The schools are working on evaluating the program to identify the benefits and support expansion in the future.

Partnership with Middle Tennessee State University: Middle team and Middle Tennessee State University (MTSU) launched a massive yearlong campaign to prevent substance use amongst the more than 20,000 MTSU students. This effort utilizes CDC Rx Awareness campaign materials to share evidence-informed ads on radio, printouts, and buses. Also, it provides resources for substance abuse treatment referrals (i.e., TN Redline).

Prescription bags in Kroger stores: Middle team created a partnership with Kroger stores to advertise the TN Redline in 24,000 prescription bags. Through this effort, the team hopes to create greater awareness of TN Redline in Rutherford County. If successful, the team will consider expanding it to additional stores.

Linkage to Care in Health Department Clinics

Many people with SUD come from underserved communities, have low educational attainment and socioeconomic status (many being people without a home),⁸ and lack access to healthcare.⁹ Further, many don't have the social capital to navigate the U.S. healthcare and behavioral health systems to access the treatment they need.³⁰ Davidson's team has spearheaded efforts to link patients with Substance Use Disorder (SUD) in Metro Public Health's clinics with the appropriate services. However, the program has had a few implementation constraints. For example, some patients seem not

Figure 9. Barriers to care

interested in receiving navigation or treatment services. In response, the team is planning to implement a gaps assessment to identify what they can improve. Despite the challenges, Middle team has managed to navigate many patients with good outcomes.

Linkage to Care with Fire/EMS and the Mental Health Cooperative

Metro Nashville Fire-EMS responds to almost 6,000 suspected overdose incidents per year, and this number is steadily increasing. Like the Linkage to Care in Health Department Clinics, this project links patients with a history of drug overdose to the Mental Health Cooperative Crisis Treatment Center. This center has extensive experience working in crisis response and diversion and has the infrastructure and personnel to provide treatment and other needed services to people with SUD. The Fire Captain in charge of implementing this project is based in the Fire-EMS office and acts as a bridge between patients who suffered a recent drug overdose and the Mental Health Cooperative Crisis Treatment Center.

Emergency Departments Discharge Protocol for Patients with Substance Use Disorder

Evidence has shown that having a standardized protocol to discharge patients after a drug overdose from emergency departments significantly increased engagement in addiction treatment, reduced self-reported illicit opioid use, and reduces subsequent overdoses.^{5,6} The Middle TN HIA team is committed to developing an evidence-based protocol to guide local hospitals' discharges for patients with Substance Use Disorder (SUD). The team has started developing relationships with local hospitals like Tennova and Nashville General Hospital, while receiving technical expertise from Vanderbilt hospital physicians.

Implementation Challenges and Lessons

Middle team achievements have been without challenges. For example, when they tried to obtain access to other agencies' databases, some were suspicious of how the data would be kept safe and utilized for action. After many conversations, leadership in these agencies are now great champions for their program. A key goal for the team is to grow and maintain good relationships with all vital partners.

Another challenge they have been experiencing is COVID-19, which has constrained some partners' availability to advance projects. A big part of their work has also been reframing opioid addiction as a medical disease that requires health actions instead of a moral failure requiring correction, or worse, criminalization. Differences in framing between agencies (i.e., EMS, public health, health care, TBI, NGOs, DEA, etc.) create significant hurdles for collaboration and effective partnerships.

The Way Ahead

One of the goals for Middle team is to create a model across the continuum of care with multiple entry points. In other words, a model in which patients can access navigation and care services in multiple contexts. For example, after a drug overdose attended by Fire/EMS, after being diagnosed with SUD in a public health clinic, or after receiving care in an Emergency Department. To be able to refer patients to the proper OUD treatment, they have been working with local care providers like Mental Health Cooperative and alike.

VIGNET TE:

“The question is how do we build a system that catches people as soon as possible, then do its best to diagnose them and provide the treatment and support they need. We need to learn from

other conditions, for example, the HIV/AIDS system of care. You find people, start them in the right treatment, and then ensure they keep taking it.” Trevor Henderson, Director Opioid/Overdose Response & Reduction Program at the Davidson Metro Public Health Department.

West HIA

The High Impact Area Program in West TN is comprised of Shelby County, which is the largest county in the state of Tennessee both geographically and population-wise. Shelby County has been witnessing a substantial increase in overdose deaths over the past few years. While the number of suspected overdose related deaths in 2018 were 213, this number increased to 342 in 2019. In 2021, 340 suspected fatal overdoses have been recorded between January and August alone.

Launched during a critical time of need, West TN's HIA program has made great strides in planning and implementing projects targeted towards overdose prevention. In early 2021, West TN's High Impact Area hired their first Program Manager. West HIA has exceeded the set goals for most of their projects during March-August 2021. Some noteworthy achievements are (i) collaboration with the Nursing Program at Baptist Health Sciences University to implement an internship program under the Prevention Education Pillar, and (ii) recruitment of interviewers to conduct motivational interviews for individuals who experience a non-fatal overdose and close contacts of individuals associated with a fatal overdose.

Multisector Task Force for Opioid Response

The Opioid Response Taskforce in West TN HIA operates as a collective, multi-sector community effort. This taskforce created an Opioid Epidemic Response Plan for Shelby County with five main pillars, namely, (i) data usage and integration (ii) prevention and education (iii) treatment and recovery (iv) first responders and law enforcement (v) harm reduction. These taskforce pillars form the cornerstone for various projects under the West TN's HIA program.

Debbie Barrett, the HIA Program Manager in West TN, believes that "building a right communication system upfront is KEY to the success of any program". This reflects in the various events organized by the taskforce, where members of all pillars are seen participating in an event that is organized by one group. Though each of these pillars works independently, they make a conscious effort to encourage communication between pillars by meeting as a large group.

West TN HIA considers not having a strategic plan for each of the taskforce pillars as a barrier for further advancing their work and is looking forward to creating one.

Overdose Outbreak Response Plan

Shelby County finalized and approved their Overdose Outbreak Response Plan (OORP) for use in early 2021. This response plan includes an exhaustive list of multi-disciplinary teams in the area that are crucial for implementing the plan in the event of an overdose spike. SCHED has access to multiple data sources for overdose surveillance such as ODMAP, TN' Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE), West Tennessee Regional Forensic Center, Shelby County Fire Department and other police and fire departments in the county. Access to timely data sources and collaboration with multiple response teams lays a solid foundation to West TN HIA's OORP. In addition, the team has been working diligently to keep the plan updated given the dynamic nature of responses in case of overdose spikes. West TN team has also assisted other High Impact Areas such as Knox County Health Department and Tennessee Department of Health's East Tennessee Regional Office in the development and implementation of their respective response plans.

Substance Abuse Prevention Education Program

West TN HIA's Prevention Education Program has co-sponsored 21 community outreach activities during this period and conducted 13 community-wide interventions to address stigma associated with substance use disorders in the last 6 months.

It is well known that adolescents and young adults are highly susceptible to peer influence.¹⁰ Utilizing this as the foundation for their "for youth, by youth" program to educate individuals aged 12-24 years on overdose prevention, West TN HIA's Prevention Education workgroup partnered with Baptist Health Sciences University in Memphis to launch an internship program that recruits third year students from their nursing program. This 14-week program requires the interns to facilitate interactive presentations on opioid overdoses to a young audience. The first group of interns successfully facilitated seven virtual presentations. In the future, this program plans to recruit students in both second and third years of training, so they can help reach larger groups.

Syringe Service Programs

Shelby County Health Department partners with two syringe service programs (SSPs), A Betor Way (ABW) and Memphis Area Prevention Coalition (MAPC), to provide access to harm reduction services and thereby reduce negative outcomes of substance use disorders.¹¹

"I see harm reduction as a way of engaging people as part of that path to recovery."

-Paul Ehrlich, American Biologist.

These organizations help hundreds of individuals every year on their journey towards recovery from substance use disorders. MAPC has been expanding services to accommodate more participants and refer to the required care services. They were successful in referring many clients to recovery services and temporary housing. The table below lists the number of individuals served by these SSPs during March-August 2021.

Organization	Total no. of individuals served	No. of new clients served	No. of syringes collected	No. of syringes distributed	No. of referrals to substance use and harmful reduction services
A Betor Way	2,935	422	108,054	146,517	145
MAPC	2,110	330	35,955	62,970	265

A Betor Way was chosen as the Non-Profit Volunteer Group of the Year by Volunteer Memphis, an organization that works with more than 300 nonprofit organizations and schools in Shelby County. In the past weeks, ABW has seen an increase in the number of clients willing to share their personal stories, returning for services, and making referral to friends as a result of a trailer donated by a community member which allows for better privacy during individual encounters. Owing to this success, ABW is considering addition of mobile equipment that would facilitate more secure spaces to allow clients to share their concerns/questions.

Stories from the Field: "3 years ago, A Betor Way met Keith - a 53-year-old man who was living under the bridge at Sycamore View and addicted to heroin since the age of 42. Keith became a regular participant of our Syringe Services and Harm Reduction program every Friday night. After about 1 year, Keith came to Ron, our President, and said I want out of this life. Ron worked diligently to get him into a program. Working within the Betor Way network, Ron found Keith a place in the SOR program. Keith has now been clean for 2 years and living a good life. He recently came by the program one Friday night to just say thank you and to show us how great he is doing. He reminded Ron that Ron had promised him a steak dinner on the 3rd anniversary of his sobriety and that is coming up in November! We are so very proud of Keith." Story of recovery shared by A Betor Way

Stories from the Field: "Daniel is one of our most avid volunteers. But just 2 years ago, he too was living on the streets under the bridge on Sycamore View. He would come to the program every Friday night and says it was the one thing he looked forward to! One night he asked Ron for some money to get something to eat. Ron gave him \$7 and said, "do the right thing with this". Daniel left thinking, I could go get high with this, but Ron really trusts me and he's always there for me. So, he used the \$7 for food and then called Ron and said, " I'm ready to get out of this life." Daniel went through treatment and now lives in sober living, has a full-time job and an adorable dog named Scrappy. He volunteers every Friday after working a long day in construction. He says the program is a beautiful sight to see. "Everyone working for free to help addicts stuck in addiction, feeding the needy, freezing in the cold and burning up in the heat. There is not a better job than what we do. I am glad I am a part of A Betor Way. My life wouldn't be the same without this. A Betor Way has truly shown me there is a better way." Story of recovery shared by A Betor Way

Identification and Follow-Up of Individuals at Risk of Overdose (Motivational Interviewing)

Motivation-based interventions are established predictors of recovery from substance use disorders.¹² West TN HIA offers motivational interviews to individuals who experienced an overdose and to those who lost a loved one to an overdose. The target population is identified through resources such as the syndromic surveillance (ESSENCE) data, emergency department reporting, referrals from service providers and the City of Memphis Police Department Organized Crime Unit. This program has recruited interviewers and began conducting interviews during the last 6-month period. The staff received training from the National Harm Reduction Coalition with a focus on stigma reduction around substance use disorders. More importantly, the program has put some protocols in place to connect individuals to care services when needed. One of these protocols requires the interviewers to notify Cocaine and Alcohol Awareness Program Inc. (CAAP Inc.) when an individual needs assistance with recovery navigation services. Having such protocols to address anticipated gaps in provision and continuity of care to identified individuals is a huge step in the right direction to reduce the burden of overdoses in Shelby County.

Peer Support and Navigation Services for ED Patients

Through a partnership between Shelby County Health Department, Cocaine and Alcohol Awareness Program Inc. and Emergency Departments in Shelby County, this program has identified 203 individuals who require peer navigation services during March-August 2021. While 98% of the identified individuals have been contacted for navigation services, 93% of the contacted have accepted referral to care services. While linkage to care has been challenging in the past year due to COVID-19, this program continued to connect patients to the available care services. The program also reached out to 67 young adults to educate them on overdose prevention.

Newly Expanded HIAs- Northeast and Southeast

Since the start, the East Tennessee HIA knew that the key to success was collaboration. With that idea in mind, the team recruited members from across sectors to their task force. During the quarterly task force meetings, the members assess the progress of the multiple projects they oversee, discuss challenges, and create support and accountability for East HIA activities. Today, the HIA Task Force of East Tennessee has more than 42 members representing more than ten sectors including public safety, prevention coalitions, federally qualified health clinics, harm reduction, hospitals, public health, judicial, behavioral health, EMS, and substance use disorder treatment providers. See in figure 7 some of the functions of an HIA Task Force.

Southeast HIA

Stakeholders from the Southeast and Hamilton Metro public health regions came together in February of 2021 and prioritized prevention and response activities for funding. These activities described below represent the work of the HIA in addressing the addiction crisis in their communities and builds upon exiting efforts and experience in the community.

Multi-Sector Substance Misuse Task Force

The Southeast HIA has established a Multi-Sector Substance Misuse Task Force and has convened the Task Force 3 times since its formation. The Southeast HIA has focused specifically on recruiting membership from all sectors needed for an effective response and also ensuring that all counties in the region are represented. The task force meets quarterly and has thus far focused on identification of grant activities, sharing data and examining data governance issues and the formation of committees to create support and accountability for HIA activities.

Acute Response Plan

The Southeast HIA will develop an Acute Opioid Overdose Outbreak Response Plan for the southeast Tennessee region. Both the regional Response Plan and the county-specific Response Plans will include local resources and contacts for acute overdose response and available data sources for acute surveillance. The Response Plans will provide guidance for detection of an acute overdose outbreak or spike event, templates for case definition and data collection, and an algorithm to drive decision-making and response. An Incident Command System (ICS) structure will be outlined, as well as the leadership role of public health entities in acute overdose outbreak events. Communication pathways involving internal staff, external partners, community stakeholders, and the public will be delineated in the Response Plan. Templates for public health and safety advisories and scripts for public alert notifications will be prepared. The HIA will activate the plans in events of an acute spike and use after-action activity to learn and continuously refine the community's response.

Prevention Education- Social Media Campaign and LifeSkills Prevention Education in Schools

The Chattanooga/ Hamilton Public Health Department will launch a 6-month social media campaign from Winter 2021-Summer 2022. The campaign will use effective practices in substance misuse prevention messaging and will target those in recovery and their families and youth and adults in the age group at highest risk of overdose (25-45 years old). The campaign will be evaluated and will be used as an on-going learning tool.

The Southeast HIA will also implement a comprehensive Substance Abuse Prevention Education program in Marion County schools during the 2021-2022 school year utilizing the evidence-based Botvin Lifeskills Training program.

Emergency Department Discharge Protocols for Patients with Substance Use Disorder

Southeast HIA will also build appropriate partnerships with hospitals and healthcare systems across the region to develop discharge protocols in the Emergency Department (ED) for patients with substance use disorder (SUD). Implementation of the following services in the ER setting will be explored: targeted screening, access to naloxone, facilitated referrals, peer recovery services, and initiation of medication assisted treatment (MAT)/medication for opioid use disorder (MOUD) for eligible patients. OD2A funding will support the hiring and placement of an additional three Tennessee Recovery Navigators ('navigators') to augment the existing Tennessee Recovery Navigator services in the region. The Navigators will be employed and supervised by the Council for Alcohol &

Drug Abuse Services (CADAS)—a regional treatment provider. The following hospital networks will be targeted in an intentional manner overtime considering hospital interest and capacity— Erlanger, CHI Memorial, Parkridge, Tennova and Starr Regional Medical Center.

Northeast HIA

Stakeholders from the Northeast and Sullivan Metro public health regions came together in March of 2021 and prioritized prevention and response activities for funding. These activities described below represent the work of the HIA in addressing the addiction crisis in their communities and builds upon exiting efforts and experience in the community.

Multi-Sector Substance Misuse Task Force

A multi-sector, multi-county task force will be developed for the 8-county area of Northeast Tennessee (Carter, Greene, Hancock, Hawkins, Johnson, Unicoi, Sullivan and Washington Counties). The task force will meet quarterly to guide implementation of identified priority activities, review data trends, collaborate to create a region-wide SUD resource guide for community partners, and address any programmatic barriers. The task force will include representation from law enforcement, first responders, justice system, anti-drug coalitions/drug prevention coalitions, treatment providers, civic organizations, youth serving organizations, faith-based organizations, and health departments. Overall program oversight and leadership of the task force will be provided by TDH Northeast Region and Sullivan County Anti-Drug Coalition.

Acute Response Plan

The Northeast HIA will develop an Acute Overdose Response Plan utilizing a TDH framework as well as plans developed in other HIA's. The plan will address data sources utilized for detection of an outbreak or spike, incident command structure, communication trees, roles and responsibilities for response and templates for spike alerts. In addition, the HIA is partnering locally with the TBI to acquire more real-time overdose data for entry into ODMAP allowing for better and more timely identification of overdose spikes by location.

Development of a Pre-Trial Diversion Program

The Northeast HIA will also develop and implement a pre-trial diversion program for justice involved individuals with SUD in Sullivan County, TN. The program will include education and addiction training for law enforcement, court systems and judges about the evidence for diversion using existing tools such as - Pretrial Risk Assessment Tools: A Primer for Judges, Prosecutors, and Defense Attorneys. The program will also screen eligible individuals prior to trial and develop of a coordinated system to ensure that treatment and follow-up is offered to those eligible in lieu of jail time. This program will be the first of its kind funded through OD2A and will serve as a learning opportunity to potential model for other counties.

Correctional Setting Navigation and Naloxone Access

Northeast HIA will also implement a navigation and naloxone access program in the Washington County detention center using HIA funds. The program will fund a Corrections Navigator and Program Manager to work with partners to develop and implement the program including development of policies and procedures and training for jail staff and stakeholders. The Navigator will work with individuals enrolled in the program to offer naloxone access, overdose response training/education, MAT education, and navigation assistance to MAT and other treatment and recovery supports. The program will receive extensive technical assistance from a similar pilot program that is funded by OD2A and launched in Jefferson County, TN.

Conclusion

Drug addiction is a multifaceted public health issue that has proven hard to mitigate. For drug addiction, there are no quick fixes or one-approach-fits-all. It is the combination of organized communities, overdose outbreak response plans, SSPs, access to treatment, behavioral and navigation services, pre-trial programs, and drug use prevention and anti-stigma campaigns that will decrease the drug addiction epidemic in Tennessee.

Multidisciplinary interventions with a strong public health component — like the Tennessee High Impact Areas — are exactly the type of programs that should be expanded, implemented, and strengthened in times of hopelessness and increasing drug overdoses.

We have a golden opportunity to improve wellbeing and save lives by reversing the trends on drug addiction. Let's continue giving our best to fulfill our commitment to a healthier and more prosperous Tennessee.

References

1. CDC. Drug Overdose Mortality by State. Centers for Disease Control and Prevention https://www.cdc.gov/nchs/pressroom/sosmap/drug_poisoning_mortality/drug_poisoning.htm (2021).
2. Weisner, C., Mertens, J., Parthasarathy, S., Moore, C. & Lu, Y. Integrating Primary Medical Care With Addiction Randomized Controlled Trial. *JAMA* 286, 1715–1723 (2001).
3. Blanco, C., Wiley, T. R. A., Lloyd, J. J., Lopez, M. F. & Volkow, N. D. America's opioid crisis: the need for an integrated public health approach. *Transl. Psychiatry* 10, 1–13 (2020).
4. Carroll, J., Green, T. & Noonan, R. Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States, 2018. 40 <https://www.cdc.gov/drugoverdose/pdf/pubs/2018-evidence-based-strategies.pdf> (2018).
5. D'Onofrio, G. et al. Emergency department-initiated buprenorphine/naloxone treatment for opioid dependence: a randomized clinical trial. *JAMA* 313, 1636–1644 (2015).
6. National Council for Behavioral Health, O. R. N. ADDRESSING OPIOID USE DISORDER IN EMERGENCY DEPARTMENTS: EXPERT PANEL FINDINGS. (2020).
7. Botvin, G. Preventing Adolescent Drug Abuse through Life Skills Training: Theory, Evidence of Effectiveness, and Implementation Issues. (1998).
8. Wilson, N., Kariisa, M., Seth, P., Iv, H. S. & Davis, N. L. Drug and Opioid-Involved Overdose Deaths – United States, 2017–2018. 69, 8 (2020).
9. SAMSHA. Substance Use Disorder Treatment for People With Co-Occurring Disorders. EN https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/PEP20-02-01-004_Final_508.pdf (2020).
10. Pei, R. et al. Neural processes during adolescent risky decision making are associated with conformity to peer influence. *Dev. Cogn. Neurosci.* 44, 100794 (2020).
11. Castillo, T. Harm Reduction Strategies for the Opioid Crisis. *N. C. Med. J.* 79, 192–194 (2018).
12. DiClemente, C. C., Corno, C. M., Graydon, M. M., Wiprovnick, A. E. & Knoblach, D. J. Motivational interviewing, enhancement, and brief interventions over the last decade: A review of reviews of efficacy and effectiveness. *Psychol. Addict. Behav. J. Soc. Psychol. Addict. Behav.* 31, 862–887 (2017).

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