

NALOXONE OUTREACH PROGRAM

EMPOWERING COMMUNITIES
& STUDENTS AGAINST THE
FENTANYL CRISIS

Who we are:

Still I Rise is a community program dedicated to raising awareness among students and community organizations about the fentanyl crisis and its impact on Colorado. Our program is led by volunteers including medical students and local members of the community

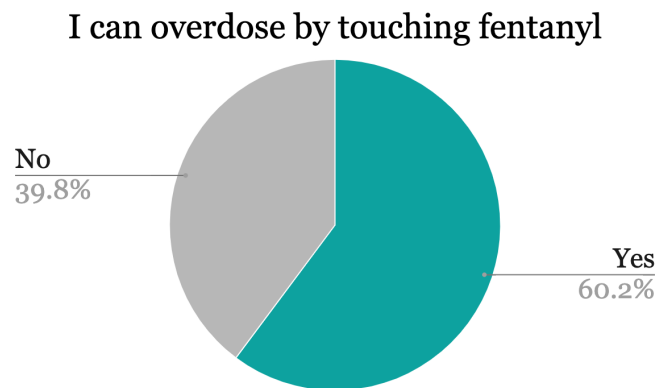
Our mission:

- To educate our community on overdose prevention including fentanyl education and naloxone training
- Connect organizations to free naloxone and testing strips

Our research:

- Survey participants (n=110) include high school faculty/staff, undergraduate student/faculty, medical students, physicians, and rescue mission employees

20% -- THE
NUMBER OF
PARTICIPANTS THAT
BELIEVED NALOXONE
IS NOT AVAILABLE
OVER-THE-COUNTER



81% -- THE NUMBER OF
PARTICIPANTS SURVEYED
THAT HAD NOT RECEIVED
PRIOR NALOXONE TRAINING

33%

**Of participants
knew someone
who overdosed
on fentanyl**

Why This Matters

- 68.1% of overdoses in 2021 had a chance for bystander intervention¹
- Our pre-survey results showed a lack of education regarding fentanyl and naloxone
- Provided training to over 300 individuals in the state of Colorado, empowering individuals to care of their health and the wellbeing of others with being prepared in the event of an overdose



Reference:

1. Centers for Disease Control and Prevention. State Unintentional Drug Overdose Reporting System (SUDORS). Final Data. Atlanta, GA: US Department of Health and Human Services, CDC; 2023, October 23.



SCAN TO VIEW ANNUAL REPORT



BEE THE VIBE



With a motto of “Don’t get stung by your addiction,” Mile High Behavioral Healthcare’s Bee the Vibe program (BTV) was initiated in 2022 to provide culturally relevant and informed harm reduction activities to address Colorado’s growing problem of substance use overdose and overdose deaths.

BTV targets the following high needs populations:

- Persons who inject drugs (PWID), as one in five PWID experience a non-fatal overdose in any given year¹
- LGBTQ+ individuals, who are at elevated overdose risk due to a combination of poorer mental health, social rejection and violence, and structural factors such as homo- and transphobia²
- Rural and medically underserved individuals living in Summit County,^{3,4} who are less likely to utilize existing behavioral health resources due to community norms, health system limitations, and cultural identity⁵



1. Colledge, S., Peacock, A., Leung, J., Lamey, S., Grebely, J., Hickman, M., Cunningham, E., Trickey, A., Stone, J., Vickerman, P., & Degenhardt, L. (2019). The prevalence of non-fatal overdose among people who inject drugs: A multi-stage systematic review and meta-analysis. *International Journal of Drug Policy*, 73, 172–184. <https://doi.org/10.1016/j.drugpo.2019.07.030>
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3. Colorado Department of Public Health & Environment. (2021). Medically underserved areas (MUAs) and populations (MUPs) [Map]. <https://drive.google.com/file/d/12Dj9N8gmYLa-Stvy1HFUdCON--Rc87aAf/view>
4. Office of Rural Health Policy. (2021). List of rural counties and designated eligible census tracts in metropolitan counties. <https://data.hrsa.gov/Content/Documents/tools/rural-health/-forhpeligibleareas.pdf>
5. Morales, D. A., Barksdale, C. L., & Beckel-Mitchener, A. C. (2020). A call to action to address rural mental health disparities. *Journal of Clinical and Translational Science*, 4(5), 463–467. <https://doi.org/10.1017/cts.2020.42>

YEAR ONE ACCOMPLISHMENTS



250 individuals attended 5 naloxone and 7 overdose education sessions



813 naloxone kits and **4098 fentanyl test strips** were distributed, with one-quarter distributed in-house to MHBHC clients and the rest dispersed at community events



Addition of harm reduction education to MHBHC staff trainings and new hire orientation



A social media campaign generated **4.3 million impressions**, including content spreading positive messaging about harm reduction and demonstrating how to use harm reduction products



BTV became a known presence at many LGBTQ+ spaces in the Denver area, getting invites to conduct harm reduction work at events like kink balls, latex play parties, drag shows, and nightclubs



Hosting a series of advisory councils that solicited feedback from stakeholders such as MHBHC clients, drop-in resource center guests, and MHBHC directors and managers

LOOKING FORWARD

In the next year of funding, Bee the Vibe looks to:

- Expand harm reduction services beyond the LGBTQ+ community to other high-risk communities, such as persons experiencing homelessness and racial/ethnic minorities
- Navigate the policy and political landscape to offer safer injection kits
- Conduct a community readiness assessment in Summit County to assess the harm reduction landscape outside metro Denver
- Establish a volunteer program to expand the outreach capacity of the organization



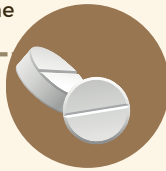
BASUC

Black Advisory Committee for Substance Use

THE AFFECTS OF STEROTYPES

Black individuals are arrested more often and receive harsher punishments for drug offenses compared to white individuals, despite similar drug use rates. This racial disparity stems from the punitive response to the '80s crack crisis and the war on drugs.

This racial disparity stems from the punitive response to the '80s crack crisis and the war on drugs. The media portrayed crack users as predominantly Black, leading to biased perceptions.



Tough-on-crime laws, like the 1986 Anti-Drug Abuse Act, imposed harsh penalties for crack offenses, resulting in longer sentences for Black offenders.



17 Million
Whites reported having used an illicit drug within the last month

4 Million
Blacks reported having used an illicit drug within the last month

Although African Americans make up only **12.5%** of illicit drug users, **33%** of drug incarcerations are black. This leads to major roadblocks in treatments for substance abuse among the population, as there is a fear in self-reporting.¹



OPIOID DISPARITIES

The rate of increase of Black/ African American drug overdose deaths between 2015-2016 was 40 percent compared to the overall population increase at 21 percent.

THE BROKEN HOME

Because of the increase of illicit drugs in the black community the impact is felt not only by the individual but also the entire family and community.

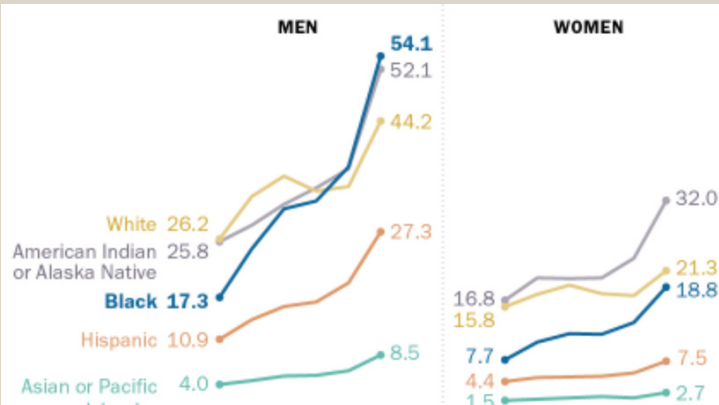
STIGMA

The trauma of daily life can be a barrier to care for people of color, particularly when that trauma is embedded. African Americans are less likely to report or categorize traumatic experiences as trauma or seek treatment when symptoms occur; therapy and the use of medications to treat mental illness and substance use disorders are often unmentionable in the Black community. Consequently, there is stigma surrounding treatment for substance use disorder

Drug overdose death rate among Black men in the U.S. more than tripled between 2015 and 2020



IN 2020, BLACK OR AFRICAN AMERICAN COLORADANS HAD THE HIGHEST RATE OF DEATH FROM DRUG OVERDOSE ACROSS ALL RACIAL OR ETHNIC GROUPS: 36.3 PER 100,000 PEOPLE, WHICH IS DOUBLE THE RATE FOR THIS POPULATION IN 2018



WHAT HAVE WE BEEN UP TO?

Black Advisory Committee for Substance Use Colorado has created a community informed process to create a state plan that aims to improve outcomes for Black Coloradans experiencing or at-risk substance abuse and their families who live, work, and play in Colorado.



WHAT CAN I DO?





Tough as a Mother is a public awareness campaign working to decrease stigma around maternal substance use disorder, educate providers and connect pregnant and parenting mothers to treatment and recovery supports in their communities. The campaign relies on partners like you to share our resources.

RESOURCES FOR MOMS

SOCIAL MEDIA

Follow us on social media and encourage moms to do the same. Our content is directed to moms in sharing resources, tips and providing an online community of support.



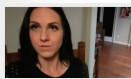
WEBSITE

Mothers can use our website to find a provider and learn what to expect from treatment as well as find additional support resources.

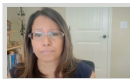


STORYTELLING

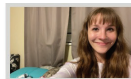
One of the most powerful tools of the campaign is storytelling. Listen to the motivating stories of moms in recovery.



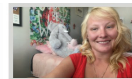
Stella
Centennial
"I value myself in a way that I would have never dreamt about."



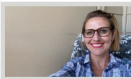
Glory
Peyton
"My journey led me to having peace, family stability and security."



Shannon
Denver
"My kids became my biggest fans. They saw me wanting to live."



Alicia
Grand Junction
"The biggest change in my life is the fulfillment I get out of life today."



Brandy
Aurora
"[Treatment] helped make me strong and gave me hope... and strength."



Dominique
Colorado Springs
"People can and do recover. They recover every day."



Lauren
Greenwood Village
"Life has become so much more of a gift."



Summer
Denver
"I was able to start to accept help from other people."



211 RESOURCE DIRECTORY

A statewide community resource connecting individuals and families to critical resources including food, shelter, rental assistance, childcare, and more.



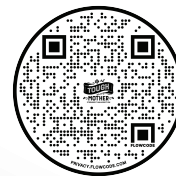
BRIGHT BY TEXT

Mothers can sign up for Bright by Text to receive developmental milestones via text message – from pregnancy through age 8. By signing up under "**ToughMother**" moms will also receive localized recovery resources and support in addition to parenting tips, activities and events based on their child(rens) age and their location.

Bright by Text Text **TOUGH MOTHER** to **274448**

TOUGHER TOGETHER

Conversations created by moms, powered by moms in recovery. One of the many ways that moms can work on recovery is by connecting with coaches and peers, and sharing and hearing each other's journeys. Our partner, HardBeauty, facilitates and leads sessions with mamas from across the state.



We are always looking for ways to expand our network, add value and partner on meaningful work. Have an idea of how we can work together?

Email us at outreach@toughasamother.org.

www.ToughasaMother.org



Consequences of Benzodiazepine-Induced Neurological Dysfunction: A Survey

Christy Huff, MD¹; Alexis D. Ritvo, MD, MPH²; D. E. Foster, BA³; A. J. Reid Finlayson, MD, MMHC⁴; Bernard Silvernail, MS⁵; Peter R. Martin, MD, MSc⁴

¹Benzodiazepine Information Coalition; ²Department of Psychiatry, University of Colorado School of Medicine; ³Benzodiazepine Action Work Group, Colorado Consortium for Prescription Drug Abuse Prevention; ⁴Department of Psychiatry and Behavioral Sciences, Vanderbilt University Medical Center; ⁵Alliance for Benzodiazepine Best Practices; no disclosures (all authors)

INTRODUCTION

- Protracted withdrawal symptoms after benzodiazepine (BZ) discontinuation occur in 15-44% of long-term users¹
- Ashton (n=50) noted symptoms lasting over a year after BZ discontinuation²
- While the literature is sparse, there are thousands of accounts online reporting prolonged, distressing symptoms after BZ discontinuation³
- A large survey of BZ users described induced and sometimes *de novo* symptoms, many lasting over one year and accompanied by adverse life consequences^{4,5}
- The term benzodiazepine-induced neurological dysfunction (BIND) describes these functionally limiting symptoms that are the consequence of neuroadaptation and/or neurotoxicity from BZ exposure⁶
- **Objective:** to describe and quantify the life consequences associated with prolonged symptoms in BIND patients



METHODS

- Secondary analysis of data from a previously published survey on experiences with BZ use, tapering, and discontinuation^{4,5}
- Symptoms and adverse life consequences queried in the survey were generated from the scientific literature and lived experiences from online support communities
- Link to the survey was posted on 16 internet sites related to BZs, general health, and mental health
- Using an SQL Server data model, customized queries were used to obtain correlations among the data
 - Compared conditions for which BZs were prescribed to protracted symptoms reported post-discontinuation
 - Adverse life effects were correlated to protracted symptoms

RESULTS

- Respondents (n=1207) were taking a full dose (11.3%), tapering (24.4%), or had fully discontinued BZs (63.2%)
- Of all affirmative answers to symptom questions, 76.6% reported duration to be months or ≥1 year
- A majority of respondents (**79.3%**) reported **6-13 life consequences** attributed to BZs (average 8.1 of 16)

Demographics, prescribing indication, and more here:

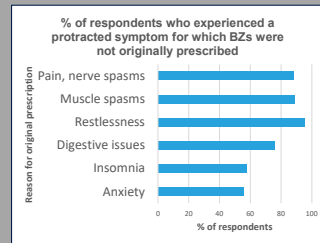
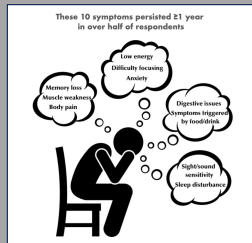


Table 1. Specific life consequences correlated to symptoms attributed to BZ use. A total of 23 symptoms could be selected. For all life consequences, the average duration of symptoms was ≥1 year. In the subpopulation that stated "none of these apply," on average, symptoms lasted days or weeks

Specific adverse life consequences	Total reporting (% of total)	Average number of symptoms
Significantly affected marriage, other relationships	686 (56.8%)	18.2
Suicidal thoughts or attempted suicide	657 (54.4%)	18.3
Lost a job, fired, became unable to work	585 (46.8%)	18.5
Experienced significant increase in medical costs	494 (40.9%)	18.5
Loss of wages or lower wages in a reduced job capacity	394 (32.6%)	18.4
Lost savings or retirement funds	322 (26.7%)	19.1
Violent thoughts or actual violence against others	284 (23.5%)	19.3
Lost a home	152 (12.6%)	19.2
Lost a business, if business owner	101 (8.4%)	18.4
Lost child custody	31 (2.6%)	20.9
None of these apply	225 (18.6%)	8.06

Table 2. Respondents who had completely discontinued BZs for at least 1 year (n=426) rated the severity of 6 general life consequences on a scale of 1-6 (6 being most severe).

General life consequences	Not at all a problem, mild problem, or moderate problem (1,2,3)	Severe, quite severe, or enormous problem (4,5,6)
Fun, recreation, hobbies	70 (16.4%)	356 (83.6%)
Work life	88 (20.7%)	338 (79.3%)
Social interactions, friendships	99 (23.2%)	327 (76.8%)
Ability to take care of home, others	117 (27.5%)	309 (72.5%)
Relationships with spouse, family	133 (31.2%)	293 (68.8%)
Ability to drive or walk	188 (41.3%)	238 (55.9%)

DISCUSSION

- This analysis shows that enduring symptoms and adverse life consequences emerged *de novo* with BZ use and discontinuation
- Statistical correlations between specific life consequences and symptoms could not be drawn, but it appears that enduring symptoms played a role in the damaging life consequences experienced by respondents
- Limitations
 - anonymous, self-selected group of respondents
 - no exclusion criteria or control group
- While most BZ users do not develop BIND, given that BZs are so widely prescribed, it is likely that the subset of patients with BIND represents a substantial population
- The risk factors for BIND are not currently known
- Practical, evidence-based, safe, and effective approaches are urgently needed for BZ deprescribing and managing the enduring neurological sequelae of BZ use
- Some patients wrote in comments that they felt healthcare professionals disbelieved their long-lasting symptoms. Perhaps reifying this condition with the term BIND may encourage appropriate treatment, compassion, and future investigations

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ACKNOWLEDGEMENTS

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JUSTICE INVOLVED CARE COORDINATION

KEVIN KOSH BRENNER
JUSTICE INVOLVED CARE COORDINATOR
578 W. 3RD AVE
BROOMFIELD COUNTY HEALTH PARTNERSHIP (CO)



Care Coordinators can assist clients with:

- ✓ Getting ID, Social Security Card, Birth Certificate
- ✓ Transportation
- ✓ Employment
- ✓ Housing
- ✓ Access to health care (MOT and Mental Health) programs
- ✓ Referrals to other community resources
- ✓ Access financial assistance

Justice Involved Care Coordination offered through The Health Partnership

Assist clients as they transition out of jail and back into the community.

Complete a comprehensive assessment tool to uncover client strengths, barriers, goals, and needs.

Build support so that clients do not feel that they must navigate all the community systems on their own.

Connect clients with community resources, provide support, and empower clients to shape a new life.

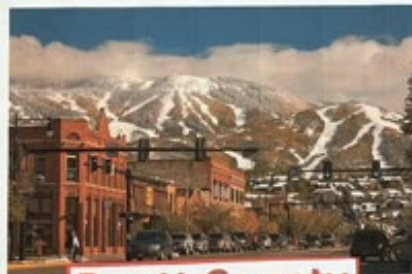
Help clients navigate through their involvement with the justice system.



Mission: Compassionately connecting people to health and well-being resources so they can thrive.

Health Partnership

Serving Northwest Colorado



Routt County



Moffat County

THP's Justice Involved Care Coordination (2023)

Individuals served:

67

The Health Partnership is piecing together individual care through peer recovery support and justice involved care coordination.

We are utilizing the power and potential of our lived experience to close the gap of care in our rural communities.

Through our clean and sober events, we create safe, fun and free spaces for participants in, curious about, seeking, or in support of recovery.

With the Center of Health, Work and Environment, we are engaging businesses in becoming recovery friendly leaders in the Yampa Valley.



THP's Clean and Sober Events (2023)

Individuals served:

1,297

THP's Yampa Valley Recovery Friendly Workplace Initiative (2023)
6+ businesses now engaged



Colorado's Medication-Assisted Treatment Expansion Program 2017 – 2023

C.R.S. §23-21-801 to 808

Background

The Colorado Legislature funded a Pilot program in 2017 to implement and expand medication for opioid use disorder (MOUD) programs to expand access to treatment and increase MOUD prescribers in identified rural counties with high overdose rates and low access.

A Hub and Spoke system (network of clinics) of training and expertise has proven effective to increase access in other states and was adopted for the Colorado MAT Expansion Program.

Unidentifiable patient data was collected for evaluation purposes only, exempting IRB approval.

Conclusions

- ✓ The Colorado MAT Expansion Program increased access for 4219 Coloradoans in rural, underserved areas.
- ✓ Grantees effectively transitioned to telehealth services during the COVID-19 pandemic and many have continued to offer hybrid access to services.
- ✓ Capacity building and leveraging partnerships and peer support have increased effective regional care coordination.
- ✓ Grantees required support to overcome payor and technology barriers.

Purpose

To expand access to Medication for Opioid Use Disorder (MOUD) and behavioral therapies in rural Colorado while supporting expansion and sustainability

Funding

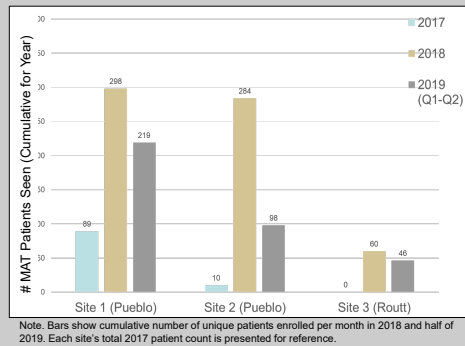
\$1 million over 2 years
SB17-074
Pueblo & Routt Counties

Aims

- Increase number of waived prescribers
 - Increase access to OUD care
- Provide agencies with implementation, expansion, training, and support

Outcomes

December 2017 – May 2019
Served 1005 new* patients
In 2 counties



Funding

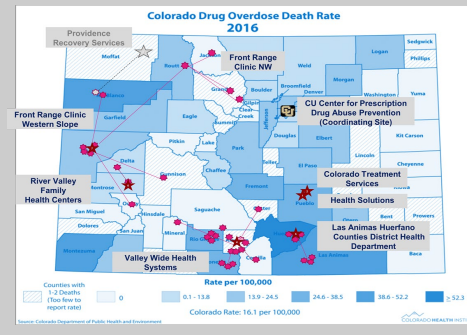
\$5 million over 2 years
SB19-001
Pueblo, Routt, SLV, Huerfano, Custer + 2 additional with need (12 counties)

Aims

- Increase number of waived prescribers
 - Increase access to OUD care
- Provide agencies with implementation, expansion, training, and support

Outcomes

January 2020 – May 2021:
Served 1543 new* patients
in 21 counties
Patient retention was largest challenge



* New patients were defined as patients engaging in treatment for an OUD diagnosis who had not engaged in MOUD or behavioral health treatment for OUD in the past 12 months. Patient tracking across sites attempted to eliminate duplication but cannot be guaranteed.

Funding

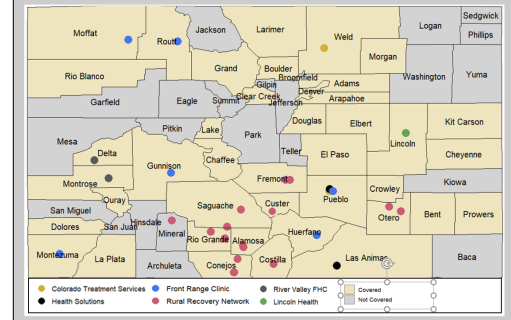
\$3 million/year (ongoing)
SB21-137
Pueblo, Routt, SLV, Huerfano, Custer +2 additional with need (12 counties)

Aims

- Increase access to OUD care
- Improve patient retention in treatment
- Provide agencies with implementation, expansion, training, and support

Outcomes

January 2022 – June 2023:
Served 1671 new* patients
in 20 counties
5/6 agencies instituted contingency management programs



Claudia R. Amura, PhD, MPH¹; Paul Cook, PhD; Tanya Sorrell, PhD, PMHNP-BC²; Rosario Medina, PhD; Jennifer Place, MA; Aimee Techau, RN, PMHNP-BC; Mary Weber, RN, PMHNP-BC

Evaluation of Provider Education Offerings on Safe Prescribing Practices



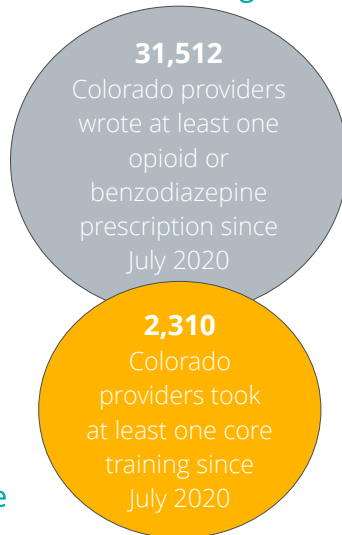
What is Provider Education?

The Colorado Consortium for Prescription Drug Abuse Prevention's Provider Education Workgroup improves "the education and training of health care professionals" around prescribing controlled substances with potential for "misuse, abuse, or diversion."

What did we evaluate?

The Evaluation Center at the University of Colorado Denver evaluated the impact of five, online training modules the Provider Education Workgroup developed to educate providers about safe opioid and benzodiazepine prescribing and alternative pain management strategies.

Who have these trainings reached?



How many providers completed one of the five core Provider Education trainings?

TRAINING MODULE	COMPLETED
Clinical Pearls for Safe Opioid Prescribing	2,045
Introduction to Substance Use Disorder & Medication Assisted Treatment	308
Opioid Reduction and Discontinuation Strategies	585
Benzodiazepines: Boon or Blunder	643
Non-Opioid Pain Management	1,232
Total	4,813

Since July 2020, 2,563 unique participants have completed 4,813 training modules.

What did we learn about the effectiveness of these trainings?

Effectiveness describes the extent to which the intervention achieves intended outcomes. Evaluators used three data sources to assess the effectiveness of the core modules. Evaluators collected data from October 1, 2022, to June 30, 2023, through a post-training survey, a two-month follow-up survey, and interviews with Colorado providers. Key takeaways are listed below:

Opioid Prescribing Practices

- More than 90% of trainees ($n=1,289$) reported their knowledge increased; they were confident they could apply what they learned; and they intended to apply what they learned.
- Over 90% of trainees reported good or outstanding levels of achievement on 9 of the 12 safe opioid prescribing training objectives.
- Trainees reported a statistically significant increase in confidence around safe opioid prescribing practices after completing the opioid training modules.

Benzodiazepine Prescribing Practices

- 98% of trainees ($n=220$) reported their knowledge about benzodiazepines increased because of the training. Most trainees also reported they were confident they could apply what they learned (86%) and planned to apply it (85%).
- Over 90% of trainees ($n=220$) reported good or outstanding levels of achievement on all three training objectives for the course.
- Of the four safe benzodiazepine prescribing practices, safely tapering patients off benzodiazepine prescriptions was the practice the most trainees ($n=28$, 39%) reported adopting after the training.

Non-Opioid Pain Management Strategies

- Over 9 out of 10 trainees ($n=623$) reported an increase in knowledge because of the training module. They also reported a high confidence to apply what they learned and intended to do so following the training.
- Over 90% of trainees ($n=623$) achieved the three training objectives of the course.
- Over a quarter of trainees adopted (fully, partially, or plan to) all three of the practices following the training module.
- There were two primary challenges to alternative pain management strategies – patient compliance and the costs of those strategies.

How have prescribing practices changed?

The number of prescriptions written for an opioid or a benzodiazepine has declined over the past three years despite an increase in the monthly average number of providers who have written one. While this trend is promising, many factors contribute to providers implementing changes in practice, and medical education is one factor among many.



This work is funded by the Colorado Consortium for Prescription Drug Abuse Prevention. Questions? Please contact ryan.welle@ucdenver.edu



The Evaluation Center
UNIVERSITY OF COLORADO
DENVER | ANSCHUTZ MEDICAL CAMPUS



SUBSTANCE USE HAS COST COLORADO BUSINESSES

AN ESTIMATED TOTAL OF 360 MILLION WORK HOURS AND \$5 BILLION

What CAN an employer do when an employee needs recovery support?

Recovery Friendly Leader's mission is to empower leaders with solution-based strategies to support employees impacted by substance use and promote safer, healthier, and more productive workplaces.

We train leaders to 

MEET EMPLOYEES WHERE THEY ARE

ENCOURAGE HONESTY AND VULNERABILITY

ACTIVELY LISTEN

EXTEND EMPATHY

CO-CREATE A PLAN

OFFER RESOURCES

PROVIDE ACCOUNTABILITY WITH GRACE

RECOGNIZE PROGRESS

DID YOU KNOW?

Approximately one out of every 11 U.S. workers - nearly 9% - has a substance use disorder (SUD).

Construction, mining, and service workers have the highest rate of SUD, though even in occupations with the lowest rates, one worker in 12 has an SUD.

Workers in recovery are absent approximately 13.7 fewer days each year compared to those not in recovery and 3.6 days less than the general workforce.

SOURCES: THE COLORADO RECOVERY FRIENDLY WORKPLACE TOOLKIT - COLORADO CONSORTIUM FOR PRESCRIPTION DRUG ABUSE PREVENTION (2022) <https://coloradocorpus.org/wp-content/uploads/2022/07/RECOVERY-FRIENDLY-WORKPLACE-TOOLKIT-2022.PDF> SUBSTANCE USE DISORDERS BY OCCUPATION - NATIONAL SAFETY COUNCIL (N.D.) <https://www.nsc.org/getmedia/9dc908e1-041a-41c5-a067-c4cef2390973/substance-use-disorders-by-occupation.pdf>

2020

Research reveals that Colorado employers need leadership training to effectively support employees impacted by substance use.

RFL founder, Dr. John Narine, helps develop Colorado's Recovery Friendly Workplace Toolkit & Initiative

2021

2022

Dr. John Narine's research & book, *Leading Workplace Addiction*, is published.

U.S. Department of Labor recognizes RFL as a resource for employer training. Advocacy for the *Recovery Friendly Workplace Model Law Act* begins.

2023

FUTURE

Continuous research and deployment of statewide training.



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Healthcare Providers' Knowledge and Attitudes About Overdose Prevention Sites

Emily Paz OMS IV¹, Vahid Mashhour OMS IV¹, Mark E Payton PhD², Brian D. Schwartz PhD³, and Rachel M.A. Linger PhD²

1. College of Osteopathic Medicine, 2. Department of Biomedical Sciences, and 3. Department of Medical Humanities, Rocky Vista University, Englewood, Colorado 80112



OBJECTIVE

To identify healthcare provider's knowledge base and associated attitudes about overdose prevention sites (OPS) and determine if there is a correlation between healthcare providers with more knowledge about OPS having a more positive attitude about OPS.

INTRODUCTION

- Overdose prevention sites (OPS) offer people who inject drugs a secure place with sterile supplies to inject pre-obtained drugs under the supervision of staff trained to recognize an overdose and intervene if it occurs.
- CDC provisional data:
 - 79,770 opioid involved overdose deaths in a 12-month period ending in December 2022.¹
- The Colorado Institute of Health:
 - Increase in overdose deaths by 54% in 2020 with an associated spike in fentanyl related overdose deaths paralleling the national trend.²
- Previous research has shown OPS positively impact both individual participants and the surrounding community.
- In 2021, New York established two OPS with reported data of:
 - First two months of operation responded to 125 people with opioid related overdose symptoms with naloxone being administered nineteen times.³
- There remains a need for more harm reduction strategies, like OPS. Healthcare providers play a significant role in the promotion of harm reduction strategies.
- We hypothesized that the more knowledge a provider has about OPS the more positive their attitude is about OPS.

METHODS

- An electronic survey was distributed to healthcare providers in Colorado: DO, MD, PA, and NP.
- Responses collected between January and March 2022.
- Survey consisted of three sections:
 - Demographic information
 - Evidence-based knowledge of OPS
 - Attitudes about OPS
- Statements assessing knowledge were based on previous research studies.
- Statements regarding the knowledge and attitudes about OPS were answered on a 5-point Likert scale.
- Mean scores between 1 and 5 were calculated for each participant and variances were analyzed for correlating demographic factors.
- A higher mean score indicates a participant is more knowledgeable and holds a more positive attitude about OPS.

RESULTS

- 698 respondents of various specialties and demographics
- Pearson correlation analysis revealed a strong positive relationship ($r = 0.76$, $P < 0.0001$) between provider knowledge and attitudes about OPS. (Figure 1)
- Emergency medicine had the highest scores in knowledge and attitude. (Figure 2)
- Providers working at a hospital affiliated with a harm reduction center had a higher mean score. (Figure 3)
- Trend in increasing knowledge and attitudes scores with an increase in number of encounters with people who inject drugs in a typical workday except past 9+ encounters. (Data not shown)

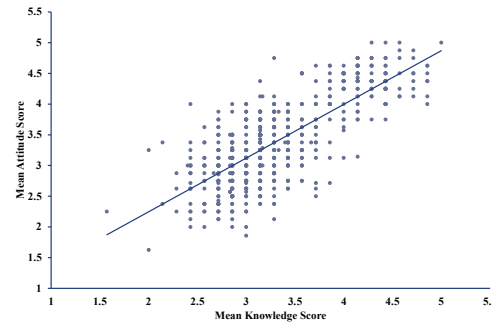


Fig. 1. Correlation between Mean Knowledge and Attitude Scores of Providers.

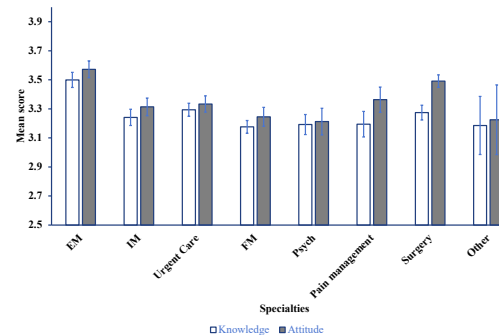


Fig. 2. Mean Knowledge and Attitude Scores by Medical Specialty.

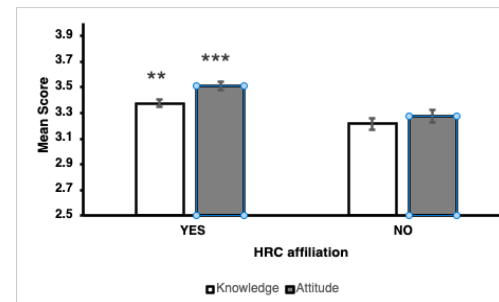


Figure 3. Mean Knowledge and Attitude Scores by Harm Reduction Center (HRC) Affiliation. Asterisks indicate the level of statistical significance (* ≤ 0.05 ** ≤ 0.01 *** ≤ 0.001).

DISCUSSION

- There is a positive correlation between providers with more knowledge about OPS and having a more positive attitude about OPS.
- Higher knowledge and attitude scores among providers affiliated with harm reduction centers, emphasizes the potential value of exposure to harm reduction strategies in shaping healthcare professionals' perspectives.
- Increasing collaboration and integration of harm reduction centers with hospitals and clinics could potentially improve provider's understanding and attitudes about OPS.
- Further research is needed to explore the factors behind the observed trends, and targeted interventions should be developed to improve providers' understanding and support for harm reduction strategies.

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Emily Paz
Emily.paz@rvu.edu



Vahid Mashhour
Vahid.mashhour@rvu.edu

Xylazine Usage and Awareness among People who use Drugs in the Denver Metro Area

Marina Yamada^{1*}, Brittany Quinn^{1*}, Sophie Zachary^{1*}, Megan Schrage^{1*}, Ruth Kanatser², Andreas Edrich MD, MBA FASM, MRO³, Mark Payton PhD¹, Jean Bouquet DO¹

¹College of Osteopathic Medicine, Rocky Vista University; ²Harm Reduction Action Center; ³Heritage Hills Family Medicine, Addiction Medicine and Mental Health, *OMS-II

INTRODUCTION

- Xylazine (aka "tranq") is an alpha-2 agonist with various effects including nervous system depression, respiratory depression, analgesia, and vasoconstriction that can lead to necrotic skin wounds.^{1,2}
- Xylazine is not reversed by naloxone (an over-the-counter medication used to reverse opioid overdoses), complicating the treatment for xylazine overdose.³ Xylazine is rarely present on its own, so naloxone should still be administered in the event of an overdose.⁴
- Use of xylazine has been involved in a variety of crimes, including drug facilitated sexual assault in children.^{5,6}
- Skin necrosis caused by repeated injection of xylazine can include costly procedures and even lead to limb amputation. There is no current routine management for these skin wounds (see Figure 1).²
- Many healthcare providers are unaware of its potential contributions to patients' symptoms and health care facilities often do not have the proper equipment to test for its presence.³
- Drug traffickers have been lacing fentanyl and other drugs with xylazine to decrease production costs and increase profits.⁷
- Xylazine has become increasingly prevalent in the drug supply in the United States, notably on the East Coast.^{8,9} In 2023, xylazine presence has been reported in 48 states.³
- While xylazine has been reported in 48 states, most data has been collected from the East Coast.^{3,8,9} Data about xylazine prevalence is limited in Colorado and the Denver Metro Area.

OBJECTIVE

The objective of this study was to understand xylazine awareness and usage among people who use drugs in the Denver Metro Area. We hypothesized that awareness of xylazine was limited, that xylazine usage was unintentional, and that usage of xylazine was associated with fentanyl use.

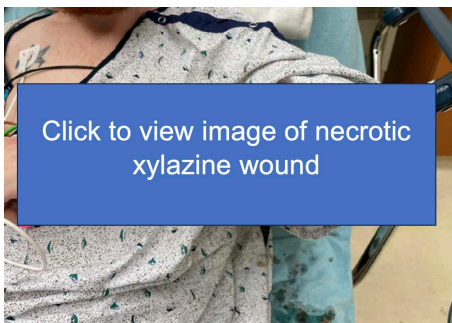


Figure 1: Necrotic skin wound from repeated xylazine injection in Pennsylvania.²

METHODS

- This project was done in collaboration with the Harm Reduction Action Center in Denver, a public health agency that works specifically with people who use drugs.
- An IRB-exempt anonymous 16-question survey was conducted among its participants (n=148) from July to August 2023. The survey was administered on paper and took 5-10 minutes to complete.
- Participants were given candy for completing the survey.
- Questions asked about demographic information, drug of choice, route of drug usage, awareness of xylazine, usage of xylazine, if usage was intentional, and usage of xylazine testing strips.
- Responses that were contradictory or blank were excluded from analysis.
- A chi-square test was performed to determine the level of significance between the four most selected drugs of choice (fentanyl, heroin, meth, and THC) and xylazine usage.
- For this analysis, responses "yes" and "unsure" to the question "have you ever used xylazine" were combined to compare against those that responded "no". This was done to analyze the significance of those who had never used xylazine compared to those who had used xylazine or were unsure.

RESULTS

- Out of 148 participants, 53% had heard of xylazine, 42.1% had not and 4.8% were unsure if they had. (Figure 2)
- Xylazine was used with knowledge by 16.3% of participants, while 66% and 17.7% of participants said they had not used xylazine or were unsure if they had used xylazine respectively (Figure 3).
- Out of the participants that said that they had used or were unsure if they had used xylazine (n= 37), 75.7% said that it was unintentional use (Figure 4).
- Eighty-three percent of participants reported that they had never used xylazine testing strips while only 14% said they had (Figure 5).
- None (0%) selected xylazine as their primary drug of choice.
- The four most selected primary drugs of choice were fentanyl, heroin, meth, and THC. Figure 6 shows the complete distribution of primary drug of choice.
- Those who selected fentanyl or heroin as their primary drug of choice were significantly more likely to have used xylazine (p=0.0002 and p= 0.0125 respectively) while those that selected meth or THC as their primary drug of choice were significantly less likely to have used xylazine (p=0.9906 and p=0.9997 respectively (Figure 7).

CONCLUSION

- Awareness of xylazine is still limited despite its presence in the community.
- Participants who selected heroin or fentanyl as their primary drug of choice were more likely to have used xylazine.
- This finding is consistent with several other studies, including Holt et al 2023. Most xylazine usage is unintentional.

Limitations of this study included:

- Self-reported.
- Intoxication of participants.
- Minimal usage of xylazine testing strips.

Future Research

- More accurate and assessable way to test for xylazine.
- Pharmacokinetic data.
- Clinician knowledge about xylazine.

Raising awareness about xylazine and its effects will be pivotal in not only helping people who use drugs make informed medical choices but also in reducing the rates of overdose, sexual assault and other drug related tragedies in the community.

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FIGURES

Have you ever heard of xylazine?

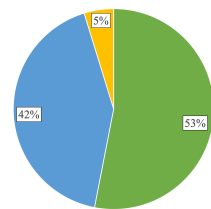


Figure 2: Xylazine Awareness Distribution

Have you ever used xylazine?

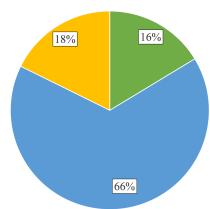


Figure 3: Xylazine Usage Distribution

If you have used xylazine, was it intentional use?

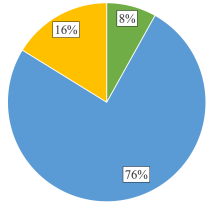


Figure 4: Xylazine Usage Intentionality Distribution

Have you ever used xylazine testing strips?

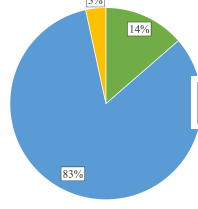


Figure 5: Testing Strip Usage Distribution

What is your Primary Drug of Choice?

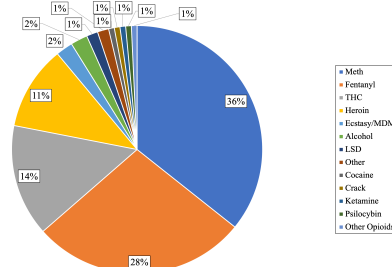


Figure 6: Primary Drug of Choice Distribution

Primary Drug of Choice vs. Xylazine Usage

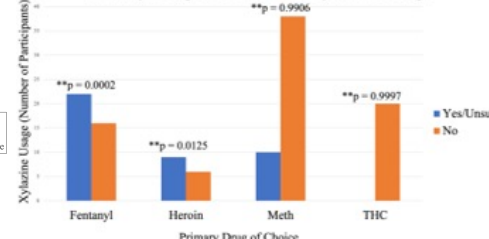


Figure 7: Primary Drug of Choice vs. Xylazine Usage

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DIGITAL POSTER FILE:



October 26, 2023; Colorado Consortium for Prescription Drug Abuse Prevention's Annual Meeting

