ISSUE BRIEF:
Xylazine, Health Risks and Harm Reduction Strategies

Xylazine, also known as "tranq,"[1] is an animal tranquilizer that is ***not*** approved for human use. Studies have confirmed the presence of xylazine in the U.S. illicit drug supply and have linked it to increasing numbers of overdose deaths, particularly in the Northeastern U.S.[2] From 2015 to 2020, the percentage of all drug overdose deaths involving xylazine increased from 2% to 26% in Pennsylvania. Xylazine was involved in 10% of all overdose deaths in Connecticut in 2020 and in 19% of all overdose deaths in Maryland in 2021.[3]

People who use drugs may use xylazine intentionally for its potent analgesic effect, or unintentionally when it is added to opioids, primarily fentanyl.[4] Xylazine can be swallowed, inhaled, smoked, snorted, or injected into the muscle or vein; the effects of xylazine typically last 20 - 50 minutes. It can significantly increase the risk for fatal overdose by depressing the central nervous system, causing slowed heart rate, reduced breathing, and sedation.

Naloxone, the opioid reversal medication, has no effect on xylazine when administered during an overdose, and fentanyl test strips cannot detect its presence.

Xylazine use can also cause severe skin infections that can lead to necrosis.

Xylazine is still a new and potentially emerging issue in California and there is no evidence to suggest that xylazine is common in California's drug supply at this time. However, the U.S. illicit drug supply is unpredictable, and experts are concerned that xylazine may eventually penetrate the California drug supply and increase the instances of fatal overdose and serious skin infections.[5-6]

HEALTH RISKS

Fatal Overdose - Xylazine is not an opioid and there is no reversal agent such as naloxone to reverse its effects during an overdose. Like opioids, it targets the respiratory system and can intensify the symptoms of an overdose, such as slowed heart rate and breathing. Although naloxone cannot reverse a xylazine-related overdose, naloxone administration remains a critical tool in preventing death, as xylazine is often added to fentanyl: a 2021 study found fentanyl was present in 98.4% of xylazine-related overdose deaths.[3] Rescue breathing can also play a role in preventing death by increasing blood and oxygen circulation in the body to keep the brain and vital organs functioning during a xylazine-related overdose.

People who use drugs may be unaware of xylazine in their illicit drug supply, and there is currently no drug testing technology like fentanyl test strips to test for the presence of xylazine in a personal drug supply.

Severe withdrawal symptoms may occur when xylazine is abruptly stopped.

Skin Infections and Necrosis - Frequent xylazine use is associated with a higher prevalence of skin problems including abscesses, ulcers and infections when compared with incidence of skin infections among people who use drugs but do not use xylazine.[7] Severe infections and necrotic skin ulcerations among people who repeatedly inject xylazine can appear beyond the site of injection. A 2022 alert released by the Food and Drug Administration[8] warns that health care professionals who see patients with severe, necrotic skin ulcerations should provide supportive measures and consider screening patients for xylazine use.

CONCLUSION

The U.S. illicit drug supply is unpredictable and xylazine is expected to contribute to increased fatal overdose and skin infections when it reaches California. Health professionals, drug treatment providers, local policy makers, and harm reduction programs can prepare by taking these steps:

- **Support the development, implementation and scale-up of harm reduction services**, including syringe services programs and drug checking, to inform people of the contents of their drugs and help monitor California's illicit drug supply.

- **Scale-up community-based naloxone distribution to people who use drugs** and education on the intentional and unintentional use of more than one drug (polysubstance use) to service providers working directly with people who use drugs. Overdose education and naloxone training should be updated to include training to recognize situations where xylazine is contributing to respiratory depression in which case rescue breathing may be needed.

- **Advise health care professionals and first responders to consider xylazine exposure** in cases where an overdose is not responsive to naloxone. Respiratory depression may need to be managed with rescue breathing/ventilation and oxygen in these situations.

- **Encourage clinicians to include xylazine exposure** in the differential diagnosis of necrotic skin ulcerations in a person who is using drugs. Health care professionals should report adverse events resulting from possible xylazine exposure to their local health department and poison center.

- **Communicate xylazine trends to people who use drugs and those who work directly with them**. Core harm reduction messages to communicate are:

    - While naloxone will not reverse the effects of xylazine, it remains an effective harm reduction tool for preventing overdose deaths, even when xylazine is used as an additive in fentanyl.

    - Xylazine cannot be detected with fentanyl test strips and people using them should be aware that their drugs could contain xylazine, increasing overdose risk even when the test for fentanyl is negative.

- **Expand access to medication for opiate use disorder (MOUD)** and reduce entry-point barriers to MOUD in mobile clinic, emergency department, and criminal justice settings.

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