



Xylazine Detection and Involvement in Drug Overdose Deaths

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General Disclaimer

The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

What is xylazine?



- Drug used in veterinary medicine as an animal sedative
- It is not approved by the Food and Drug Administration for use in humans
- In humans it acts as a central nervous system depressant and can cause respiratory depression
- When used as a toxic adulterant in opioids such as fentanyl or heroin, xylazine might increase the risk for fatal overdose
- It does not respond to opioid reversal agents such as naloxone

Xylazine in the news



PUBLIC SAFETY ALERT

DEA Reports Widespread Threat of Fentanyl Mixed with Xylazine

☰ **CNN** health Life, But Better Fitness Food Sleep Mindfulness Relationships Audio Live

Congress moves to make xylazine a controlled substance

What prompted our analysis?



Anecdotal reports of increasing presence of xylazine in drug overdose deaths

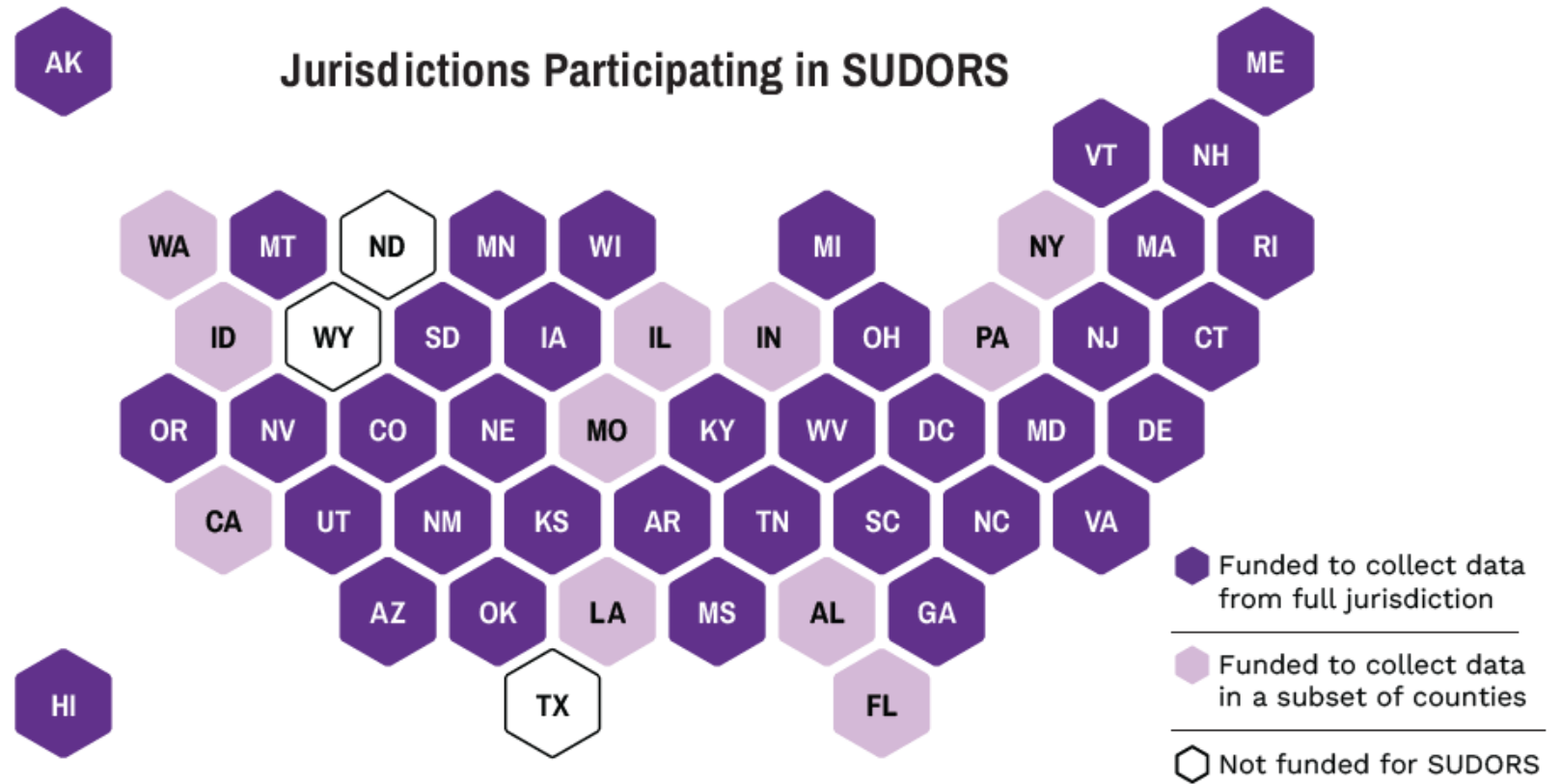


Medical examiners increasingly including xylazine as a contributing factor in the fatal overdose

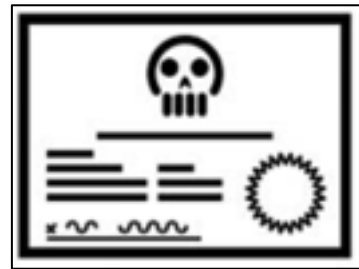


Unclear how many states reporting increases in xylazine-related overdoses

State Unintentional Drug Overdose Reporting System (SUDORS)



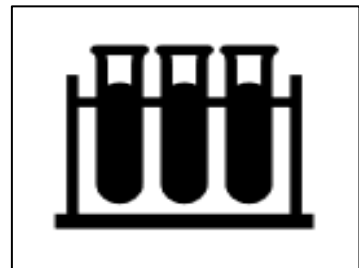
SUDORS* data used for analysis



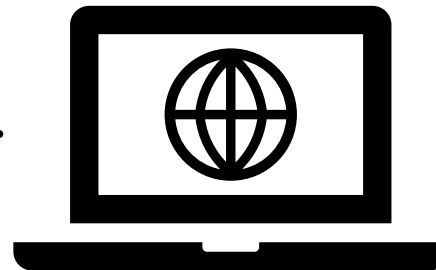
Death Certificates



Medical Examiner/
Coroner Reports



Post-mortem
toxicology results



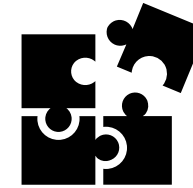
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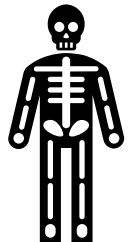
Demographics



OD risk factors



Circumstances



Comorbidities



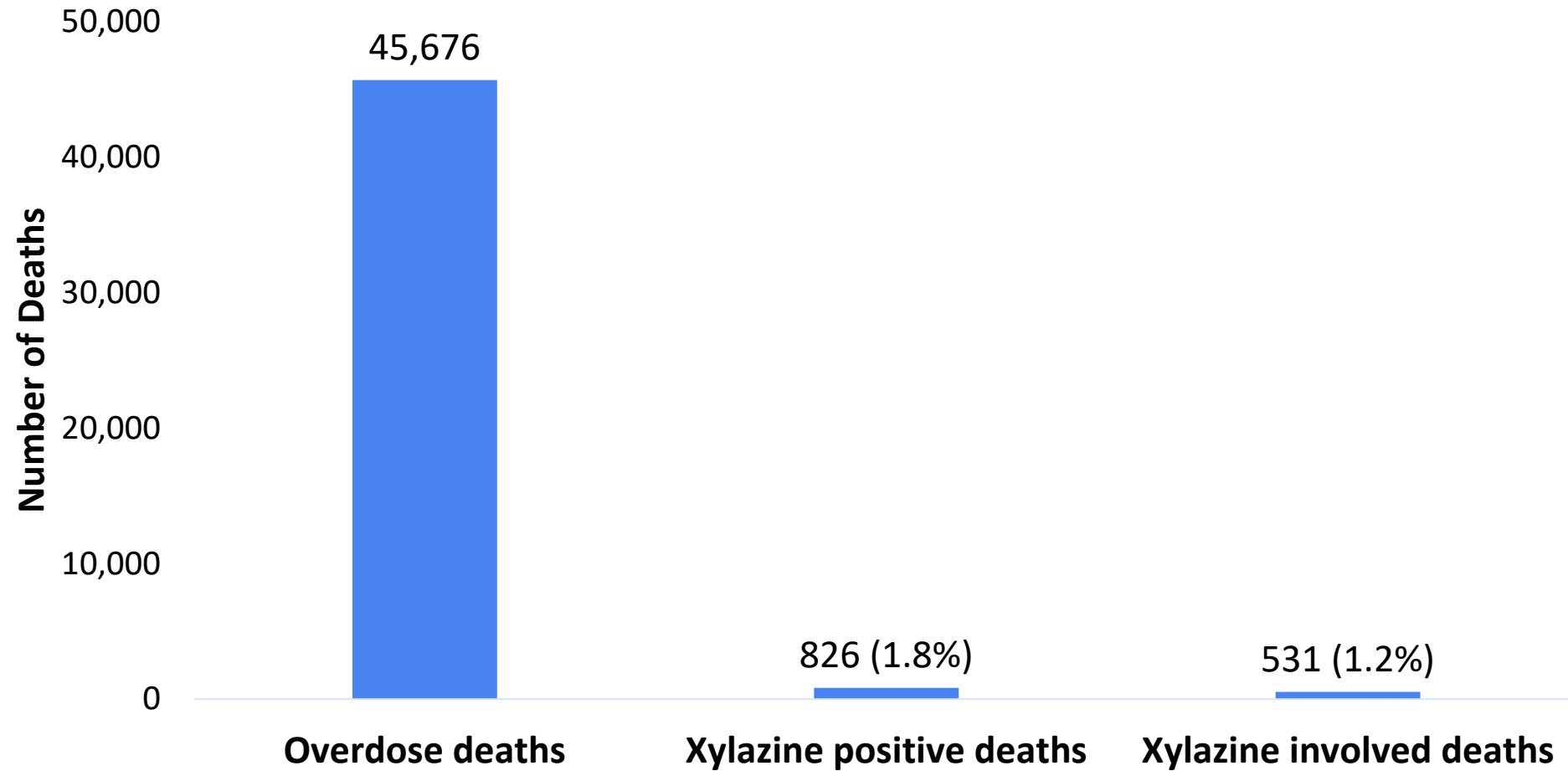
Contributing drugs

*State Unintentional Drug Overdose Reporting System

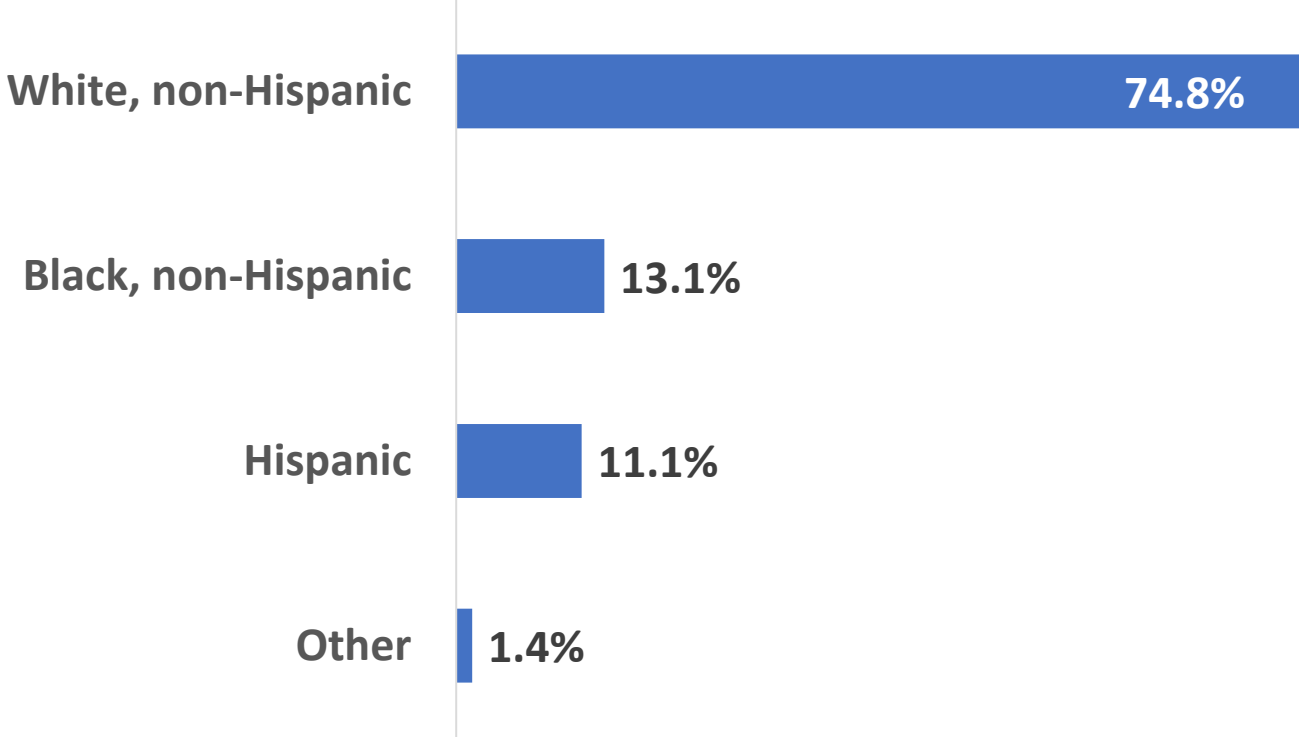
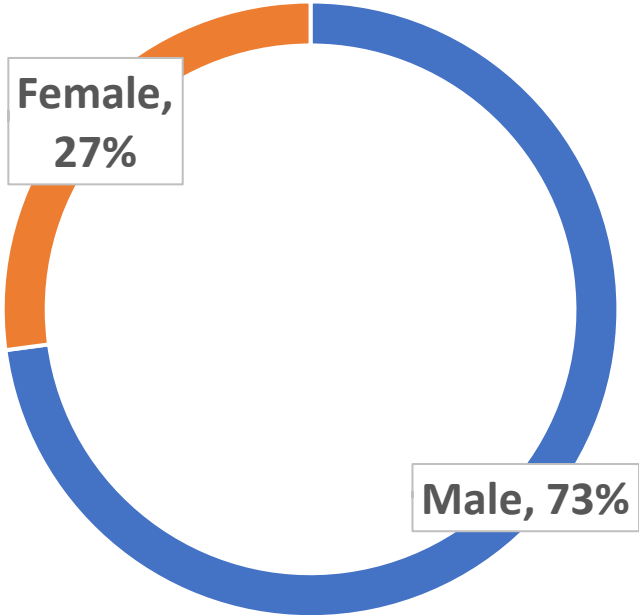
What was our analytic approach?

- Included 39 jurisdictions (38 states and DC) with complete 2019 SUDORS data
- A SUDORS case was defined as xylazine-positive if xylazine was detected on postmortem toxicology or if xylazine was listed on the death certificate as a contributing cause of death
- A SUDORS case was defined as xylazine-involved if xylazine was listed on the death certificate as a contributing cause of death.
- Xylazine-involved and xylazine-positive cases were examined by demographics, region and other co-occurring drugs contributing to the death

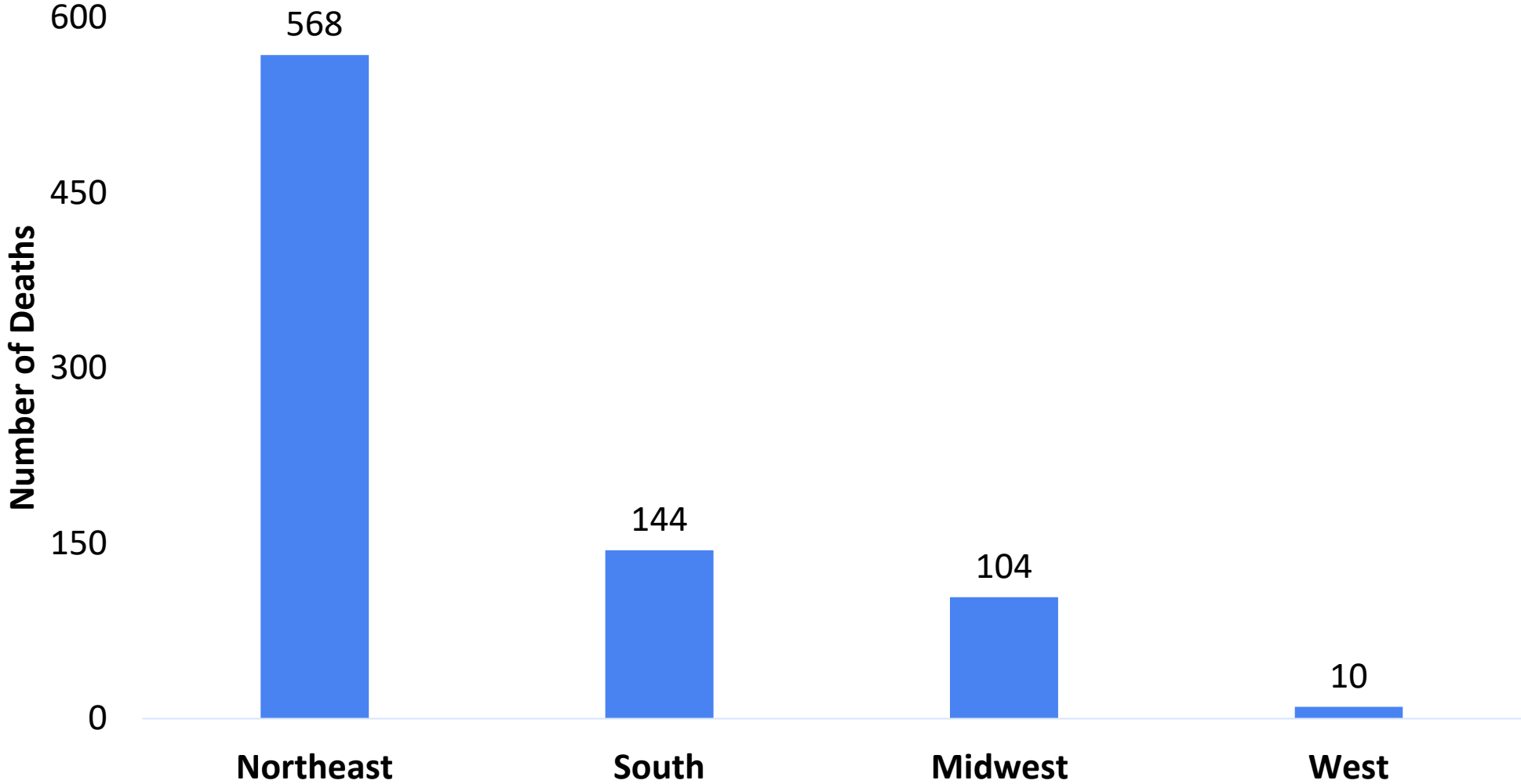
Xylazine prevalence in SUDORS deaths in 2019



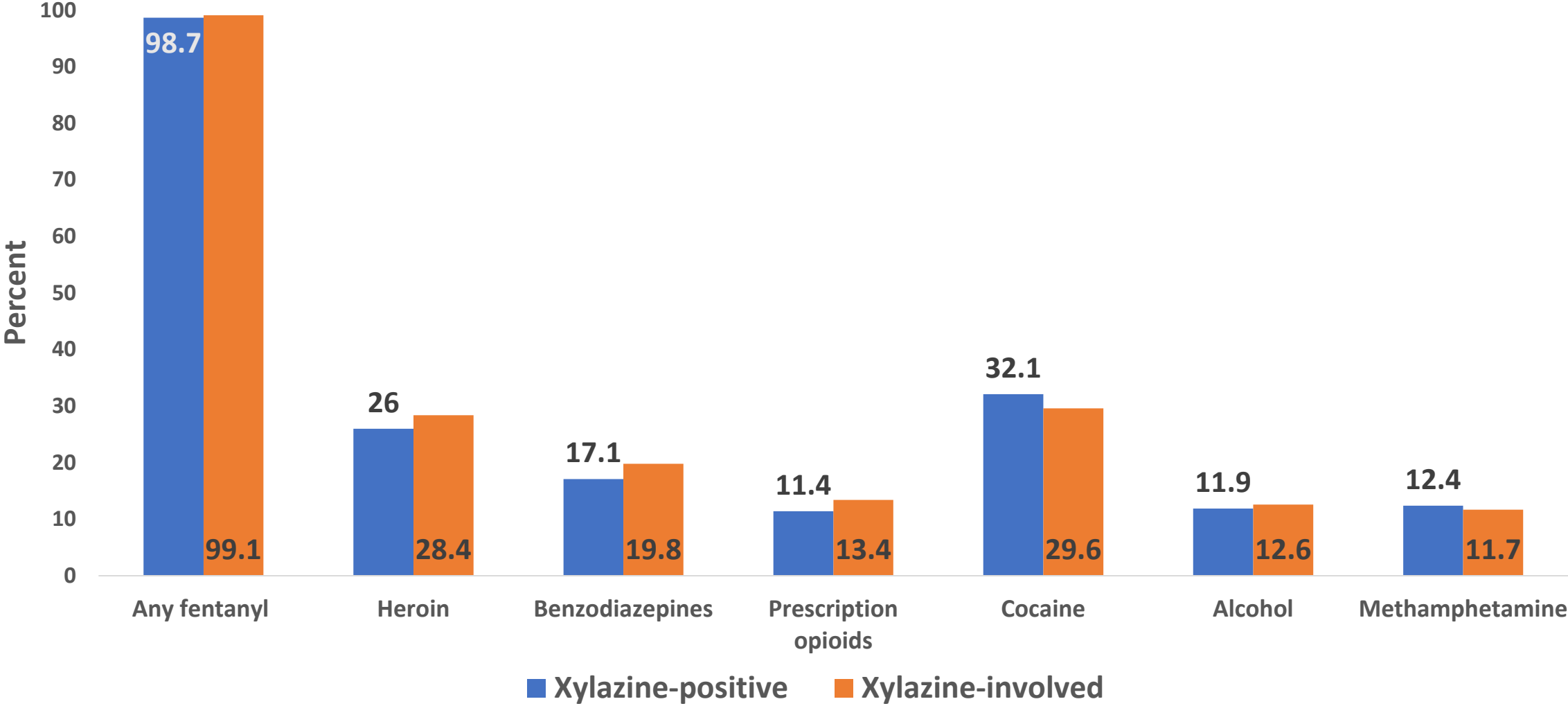
Demographic Characteristics among Xylazine-Positive Deaths



Regional Distribution of Xylazine-Positive Deaths



Prevalence of co-occurring drugs listed as a cause of death among xylazine-positive and xylazine-involved deaths, 2019



Key takeaways

- During 2019, fewer than 2% of SUDORS overdose deaths from 38 states and DC were xylazine-positive; 1.2% of SUDORS deaths involved xylazine.
- Xylazine contributed to death in almost two thirds of deaths in which it was detected
- Xylazine deaths almost always co-involved with fentanyl
- The majority of xylazine-positive deaths were among males (73.1%), non-Hispanic White persons (73%), and from states in the Northeast Census region (68.7%)

Continued surveillance of xylazine in overdose deaths is warranted

- Naloxone administration might not be as effective at fully reversing overdoses involving xylazine and potent opioids like fentanyl
- No pharmaceutical antidote is specific to xylazine in humans
- Supportive care is critical in event of overdose involving xylazine
- Implementation of routine standardized toxicology testing for xylazine needed to better understand role of xylazine in overdose deaths
- Xylazine prevalence may be underestimated due to variability in testing frequency across the US
- Xylazine testing strips could potentially aid in intervention efforts

Emerging substances and other considerations

- Identification of veterinary sedative **medetomidine** in Maryland
- Drug being co-detected in deaths involving fentanyl and xylazine
- Limited information on the effects of medetomidine in humans and no information of its effect when combined with other sedatives or opioids
- Too early to know whether the presence of medetomidine in the drug supply will change

Acknowledgments

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- + Vital registrar offices

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- + Kim Miller, MPH, Epidemiologist, CDC Division of Overdose Prevention

Thank you!

Questions?

For more information, contact CDC
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