



Toxicology

Let's Talk Tox

A resource for drugs of abuse testing

Why polysubstance use has become pervasive and dangerous

In the June issue we touched on the impact the pandemic had on opioid overdose deaths from illicit synthetic opioids worsening across many age groups including adolescents. You can read that here: [Fentanyl-involved Deaths Reached Never Before Observed Levels](#).

Lockdowns, social isolation due to the COVID-19 pandemic and illicit drug contamination are believed to play a role in magnifying what clinicians face day-to-day. New research confirm that [polysubstance](#) use [impairs driver's perception of safety](#), starts with younger individuals, and has potential for deleterious [effects later in life](#).

Fortunately, proven evidence-based interventions, like medication-assisted treatment (MAT) and routine clinical drug screens for fast-acting opioids like buprenorphine, highly potent synthetic opioids like fentanyl and tramadol, and THC (marijuana) can aid clinicians in managing patients. In this issue we discuss the evolving crisis clinicians face.



Pat Pizzo: Forensic Toxicologist, DPB Consultants, Inc.

Want to learn more from a Toxicology industry expert?

Email us your questions to be featured in the next Let's Talk Tox Newsletter!

 Letstalktox@thermofisher.com

Growing concerns regarding a potential increase of cannabis-impaired drivers

With the legalizing cannabis for medical and recreational use, challenges emerge as to what extent the impact cannabis can have on users' ability to drive.

- Cannabis (THC) can clearly impair driving
- Users perceive that the effects begin resolving before performance improves.¹
- Study participants smoked either a 5.9 or 13.4 percent THC cannabis cigarette, "which is getting closer to what's available in the dispensaries," Dr. Fitzgerald says, noting several prior studies used lower percentages. "So this study used modern cannabis."²

Perceived driving impairment, refraining from driving, and Composite Driving Score (CDS) are detailed in Dr. Marcotte's study.

1. Thomas D. Marcotte, PhD, et al. *JAMA Psychiatry*. 2022;79(3):201-209. doi:10.1001/jamapsychiatry.2021.4037
2. <https://www.captodayonline.com/aacc-session-to-zero-in-on-cannabis-and-driving>

Long-term sequelae of substance use disorder from adolescence through adulthood

Drug overdose deaths are the leading cause of injury-related deaths in the United States. With increasing numbers, it is imperative to look towards early identification of individuals who may be at risk of developing substance related consequences such as overdose and substance use disorder (SUD). One in every three US individuals will develop a SUD in their lifetime and adolescents with SUD symptoms were more likely to report prescription drug use and PDM (Prescription Drug Misuse) in adulthood.³ These findings suggest that:

- Most adolescents with severe substance use disorder (SUD) symptoms do not transition out of symptomatic substance use, and the long-term sequelae for adolescents with more severe SUD symptoms are more deleterious than those for adolescents with no or low severity.
- Prescribers should be aware that many adults prescribed opioids, sedatives, or tranquilizers had multiple SUD symptoms during adolescence and require careful assessment and monitoring.
- The association between adolescent and midlife SUD may reflect underlying vulnerabilities that manifest early and persist throughout life.
- Patterns shown in the study could also reflect neuropathology triggered by the frequent use of drugs during adolescence, which results in symptoms that are then treated by physicians later in life.

3. *JAMA Network Open*. SE McCabe, JE Schulenberg, TS Schepis, VV McCabe, PT Veliz DOI:10.1001/jamanetworkopen.2022.5324 (2022)

Medication-Assisted Treatment (MAT)⁴

What is it? - MAT (Medication-Assisted Treatment) is a proven pharmacological treatment for opioid use disorder. The backbone of this treatment is FDA approved medications. Agonist drugs, methadone and buprenorphine, activate opioid receptors in the brain, preventing painful opioid withdrawal symptoms without causing euphoria; naltrexone blocks the effects of opioids.

Guiding principles

1. Know your epidemic, know your response
2. Make collaboration your strategy
3. Nothing about us without us
4. Meet people where they are

Screening for Fentanyl in routine clinical toxicology testing

The standard panel of substances included in routine clinical drug screens (carried out in hospitals, clinics, treatment centers, etc.) should include screening for fentanyl exposure, particularly in jurisdictions where fentanyl is known to be prevalent in the local illicit drug market.

Initiating Buprenorphine-based MAT in emergency departments

Patients receiving care in emergency departments who have untreated opioid use disorder are referred to a provider for long-term buprenorphine-based MAT. This referral is accompanied by initial doses of buprenorphine or a short-term prescription that can be filled right away. The patient can begin treatment immediately, instead of waiting several days for their appointment with a new provider.

MAT in criminal justice settings and upon release

In this intervention, MAT should be made available as a standard of care for incarcerated individuals with opioid use disorder. Those receiving MAT when they enter a criminal justice setting may continue receiving this treatment, and those who are not on treatment may initiate and continue this form of care while incarcerated and then be linked with appropriate care providers to continue MAT upon release.*

4. *Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States, 2018* <https://www.cdc.gov/drugoverdose/pdf/pubs/2018-evidence-based-strategies.pdf>

**Medicare and Medicaid generally do not pay for services rendered to individuals in custodial settings. Applicable statutory and/or regulatory exclusions will apply.*

For Provisional Drug Overdose Death Counts by state and class of drug, please refer to the state-specific database: <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>



Did you know?

Thermo Scientific DRI Fentanyl II Drugs of Abuse Assay is now FDA-cleared and can be run on the Mindray BS-480 and BA-800M Chemistry Analyzers and the Thermo Scientific Indiko Plus analyzer for clinical chemistry and specialty testing. [Learn more](#)



On-Demand webinars

Here you will find on-demand webinars from key opinion leaders, presentations, resources, and videos. [Learn more](#)



Learn more

Drugs of Abuse Testing matrices; urine, oral fluid, specimen validity and automated drug testing, as well as SAMHSA guidelines.

[Find out more](#)



Let's connect

Our goal is to deliver relevant information to keep you updated on current trends, current research and publications, educational content, technical tips, and future events. We invite you to send questions, comments, or suggestions for topics to help us better. **Contact us at**

LetsTalkTox@thermofisher.com