

## **Episode 49: How Urgent Diagnostic Testing Can Help Prevent Drug Overdose Deaths**

**Josh Casey:** Hi, I'm Josh Casey, welcome to *QuidelOrtho Science Bytes*, your trusted source for diagnostic insights and innovations. Today, we're diving into the ever-evolving world of substance use detection. In emergency departments across the country, healthcare providers are facing a perfect storm of deadlier drugs, unpredictable combinations and a race against time where minutes, even seconds, can significantly impact outcomes for patients suspected of overdose. Emergency departments and their staff often see patients presenting with a range of symptoms including altered mental status, chest pain, loss of consciousness, and varying degrees of trauma and respiratory issues. The ability to determine if a drug may be contributing to the cause can provide data to assist clinicians with timely assessment and treatment.

In this episode, we'll discuss how early detection can help save lives, spotlight the hidden dangers and counterfeit medications, detail some of the nuances of Narcan and explore the critical importance of continuous monitoring even after an overdose appears to be resolved. Joining us for the podcast is Vonda McAllister, director of global product management for QuidelOrtho. Vonda's diagnostics experience spans from R&D and program management to marketing, and prior to moving into the point of care business unit, Vonda managed the Triage portfolio of assays and clinical labs team for North America. She is now focused on supporting the global regions with our toxicology and PIGF, or placental growth factor, assays as well as expanding the triage toxicology and women's health testing portfolios. She also serves as global leadership co-chair for the QuidelOrtho Women's Leadership Network.

Welcome, Vonda, thank you for being with us today.

**Vonda McAllister:** Hey, Josh, thanks for having me. It's a pleasure to be here to discuss such an important topic.

**Josh Casey:** Great, thank you. So, there's a lot of focus now on early testing and rapid diagnosis. Why is it crucial for the emergency department to quickly determine if drug use is indicated in patient presentation?

**Vonda McAllister:** Ah, great question, Josh. So early detection of drug use or abuse in the emergency department is really essential. It allows for timely intervention and reduces the risk of fatal overdose, as well as it helps prevent complications from drug interactions or delayed effects, especially with potent synthetic opioids like fentanyl and emerging drugs, which we'll discuss, but prompt identification also enables appropriate monitoring and referral for addiction treatment. Also, as you mentioned before, the determination if drugs might be the



cause of other symptoms, such as altered mental status, is really critical. A patient experiencing acute psychosis is extremely disruptive for patients and staff in an emergency department, especially a busy over-run emergency department with limited resources. A rapid drug screen can assist in patient assessment and timely disposition to either psychiatric care or admission for further observation. Also, unintended misuse of medications such as benzodiazepines that can also lead to overdose, especially in the elderly. And that can't be reversed like opioid overdoses with Narcan, but it requires alternative treatment, so it's important to have additional information to really assess these patients properly.

**Josh Casey:** Thinking next about the broader trends and what we've seen recently, what are some current and emerging drugs of abuse that are causing concern in 2025?

**Vonda McAllister:** So, prescription opioids remain a problem, and synthetic opioids like fentanyl continue to dominate overdose statistics, but we are seeing even more potent analogs such as nitazenes and adulterants like xylazine, a veterinary tranquilizer, and it's referred to as "tranq" on the street. And they're increasingly found in street drugs. These substances are often mixed together, making overdoses more severe and unpredictable, because the interactions can compound the overdose effects, and additional and varied treatment to counteract these effects is required by physicians.

**Josh Casey:** How have pain management drugs like opioids contributed to the crisis?

**Vonda McAllister:** So if you recall, the onset of the opioid epidemic really began with many individuals being prescribed opioids for pain management, and we really didn't understand the dangers of prolonged use. Obviously, that's changed, but misuse or overuse can quickly lead to dependence, and this increases the risk of seeking out stronger, illicit opioids, which may be adulterated with other drugs. This progression has fueled the opioid crisis, as well as the trend in polydrug use.

**Josh Casey:** Let's explore that a bit further. What challenges do drug combinations present in overdose cases?

**Vonda McAllister:** Well, as I mentioned, so you've got illicit drugs, and those are frequently mixed like fentanyl with xylazine, or other unknown substances and this creates really unpredictable effects. Also, users will take multiple drugs known as polydrug use. This is a new trend. Opioids plus stimulants like cocaine and methamphetamine and benzodiazepines are used in combination, increasing the risk of fatal overdose and making symptoms harder to diagnose and requiring more aggressive or specialized treatment in the emergency department.

**Josh Casey:** Understood, makes sense. So what are the typical or maybe more common signs that someone is experiencing an opioid overdose?



**Vonda McAllister:** So common signs can include or will include sudden respiratory depression, loss of consciousness, blue lips or fingertips, unresponsiveness and pinpoint pupils. Recognizing these symptoms quickly is critical for effective intervention.

**Josh Casey:** Right, and with regard to intervention, there are steps we can take to help combat overdoses like Narcan. How does Narcan help an opioid overdose? What are its limitations?

**Vonda McAllister:** Yeah, so Narcan can rapidly reverse an opioid overdose by restoring normal breathing, and thankfully, due to its increased availability to the public, we're actually seeing a reduction in the incidence of overdose. In fact, a recent CDC opioid overdose statistic showed a decline as of last October, October 2024, so we're headed in the right direction and this is good news; however, we have learned that with potent synthetics or drugs absorbed through the gut like fentanyl, symptoms can reoccur after initial reversal with Narcan. What this means is that Narcan may need to be administered multiple times. And its effects may not last as long as the drugs themselves. Because of this phenomenon, Tyler's law was put in place in California requiring acute care facilities to test for fentanyl for suspected overdose patients, and actually several other states have started following suit.

**Josh Casey:** OK, so the effect of some drugs can outlast Narcan. Is that part of what makes repeat testing and monitoring so important after the initial overdose reversal?

**Vonda McAllister:** Yeah, actually, drugs like fentanyl and its analogs can have longer durations of action. Patients are at risk for recurrent overdose symptoms even after Narcan is given. So, continuous monitoring and repeat testing in the ED is really essential to catch and treat these delayed effects. To give a little bit more detail, Narcan is what is called an opioid receptor agonist, meaning it displaces the drug on the receptor and blocks the opioid from binding to the receptors in the brain, rapidly reversing the effects of the overdose. Fentanyl potency and gastrointestinal absorption can lead to what is called fentanyl rebound. As more is released into the system, it requires additional doses of Narcan be administered to continue to block those receptors.

**Josh Casey:** Why is it difficult to identify fentanyl and other synthetics and street drugs? How does this impact care in the ED?

**Vonda McAllister:** Well, as I mentioned, fentanyl and similar substances are often mixed into other drugs without users' knowledge, like cocaine or methamphetamine. Also, counterfeit versions of common prescription medications such as oxycodone or Xanax, containing fentanyl and xylazine, are also sold on the street. So it's anyone's guess what the user may have ingested when they show up to the emergency department. Fentanyl testing is more available now, however, drugs like xylazine are not yet included in many drug screening devices or even lab



analyzers, and a more complex method like LCMSMS, is really required to identify what's onboard. The illicit drug landscape is continuously evolving and information and education is so important for healthcare providers and laboratorians alike to anticipate what they may be encountering in their patient population.

**Josh Casey:** Given these challenges, how can emergency departments adapt to the changing landscape of drug abuse?

**Vonda McAllister:** Well, EDs must expand routine screening, right? First and foremost, they need to include emerging drugs if possible. They need to update toxicology panels and stay informed on new trends. Ongoing staff education and early warning systems help ensure rapid, effective responses to evolving drug threats and what's showing up in their emergency department.

**Josh Casey:** OK, so considering all the changes and emerging issues in this area, what's the bigger picture for patients and providers today?

**Vonda McAllister:** Yeah, it's really concerning. So early identification, comprehensive monitoring and awareness of new drug trends are all critical, right? By adapting protocols and staying vigilant, ED teams can save lives and be the first step in a patient's path to recovery, even as the drug landscape continues to evolve. Expansion and destigmatizing of addiction therapies and rehabilitation programs and intervention is exceedingly important for harm reduction socially and economically.

**Josh Casey:** Great, thank you for that. So the emergency department is on the front lines of the drug abuse crisis. Early diagnosis, awareness of new and emerging substances, prompt use of reversal agents like Narcan, and vigilant monitoring are all essential to saving lives and improving outcomes in this rapidly changing environment. That's all the time we have for today.

Thank you, Vonda, for joining us to share your knowledge on this important topic. I hope everyone enjoyed the conversation. Please be sure to review the sections and links within the podcast description. You can always go back and listen again if you'd like more details. And thank you all for tuning in. If you haven't already, please subscribe to *QuidelOrtho Science Bytes*, our monthly podcast brought to you by QuidelOrtho Corporation, where we are transforming the power of diagnostics into a healthier future.

Until next time, take care, everyone.