Exploring Novel Psychoactive Substances

Podcast Transcript

Joe Lavelle: Welcome to NMS Intelligence, an exciting new podcast series from NMS Labs. I am your host Joe Lavelle, and I am really looking forward to this conversation with another trailblazing innovator.
We're going to get right to it today, we are joined by Donna Papsun. Donna is a forensic toxicologist at NMS Labs. Donna welcome to the show!

Donna Papsun: Thank you very much for having me.

Joe Lavelle: Well thank you so much for joining us today. Donna, could you first start by giving us a 10,000-foot overview of what you guys do at NMS Labs?

Donna Papsun: NMS Laboratories is a forensic and clinical toxicology lab based in Willow Grove, Pennsylvania and we provide toxicology testing for a variety of biological specimens for many different things mostly recreational prescription drugs And we provide that testing for clients such as medical examiners, law enforcement, hospitals and other reference laboratories.

Joe Lavelle: Perfect, thank you so much! And then could you take a couple of minutes here and tell the audience what you do in your role at NMS Labs?

Donna Papsun: So, my role is a forensic toxicologist. My primary responsibility is the review of analytical data generated in the testing of biological specimens for prescription drugs, recreational substances and anything else. I review those results and then I provide reports to clients and then I'm responsible for the interpretation of those results in different medical legal investigations, such as what role a drug has in someone's driving performance, or what role they have in someone's death.
In addition, I'm also responsible as a co-leader of the NPS strategy team dedicated to novel psychoactive substances or NPS and what we'll talk about today.

Joe Lavelle: Perfect, you set me up perfectly. Donna, what are NPS's and how are they different from other drugs that are abused?

Donna Papsun: NPS or novel psychoactive substances are substances which have emerged onto the recreational drug market which are either chemically modified from current drugs of abuse and/or more frequently compound that were investigated for pharmaceutical research for alternatives to certain drugs such as morphine or marijuana and have now been repurposed for recreational abuse.

Joe Lavelle: Perfect. What's so special for these kinds of drugs?

Donna Papsun: These drugs are appealing or special and they are appealing to recreational users because they act on the body similar to other abuse substances. They're wildly available due to the internet, they also can occupy a legal gray zone so that may not fall exactly into regulation. And more commonly when people use these substances they fall outside of routine toxicology testing, so they circumvent that drug testing.

Joe Lavelle: Interesting. Do these drugs have a different lifespan than other drugs?

Donna Papsun: They can and it varies per drug and sometimes these can be longer and sometimes these can be very short. What we have seen happen in the past is that a drug emerges on to the recreational market and there's a gap in time between emergence and detection by toxicological assays, because these assays take time

to develop and then validate. Once we have those tests available to detect these new substances, there's a period of time where we can detect them in biological specimens. And then there's basically this data set that these substances are being detected in people, and then this typically prompts legislation. And in response to that legislative action either home or abroad, often a substance drops in popularity and then a new one emerges. So then we have to cycle back and start at the beginning of building a new test. So, sometimes a substance is only in the market for a period of months, which is difficult for a toxicology laboratory to stay on top of, because we're building new tests and the tests are only irrelevant for a small period of time.

Joe Lavelle: Wow! How does an average person get access to this kind of information so we know what to be on to look at for?

Donna Papsun: Well, we spend a lot of resources trying to figure out what's out there. A lot of it is communicating with other drug monitoring agencies, which maybe not the average person be able to do. But there's also reading literature, reading conference proceedings, attending conferences related to the drug monitoring community, looking at seized drug casework and toxicology casework, and what can be very interesting is reading drug user forums and chat rooms.

Joe Lavelle: Really interesting. So, are you working with law enforcement and hospitals? Is that who you are looking to educate as opposed to the end consumer?

Donna Papsun: Yes, there were certainly two agencies that we want to make sure we communicate what we are finding as well as medical examiners, local and federal governments. It's important for everyone to understand what's out there so we can develop an approach to dealing with the substances, and then educating the end users who may or may not know what they're using. If you're ordering from the Internet you probably know assuming that the manufacturers are giving you what you are expecting to get. But there are other times when people think they're getting something but then are getting something else, like for example, they think they might be getting heroin, but really they're getting psycho propyl pentanal, which can increase the risk to those end users who have an adverse event like overdosing.

Joe Lavelle: Got it. Donna, can you provide insight as to how these drug trends are popping up as increased usage and decreased usage regionally across the nation?

Donna Papsun: Sure. So, really what we have here is a public health concern in regards to NPS. So what we've been trying to do more recently is track the emergence and time and geographic locations for these substances. So then we can provide more information to various agencies such as the laboratories, emergency personnel, law enforcement, medical examiners, hospitals, also they know what's happening in their area.
For example, we have reported over 120 3-methyl-1-pentanol cases between 2016 and 2017 in Pennsylvania, and mostly in Pennsylvania. That information is helpful for Pennsylvania agencies to know that the substance is out there because if they have a suspicious case that isn't positive for routinely seen opiates, they need to consider testing for this substance. In addition, this information should get out to the public because recreational users who may or may not know what they're getting, may be purchasing the adulterated or substituted product which again will increase the risk of adverse events to them.

Joe Lavelle: What is it that makes NMS Labs a leader in this area?

Donna Papsun: Well, at NMS we have decided as a company priority to dedicate the resources to stay on top of these emerging substances. As part of this position, this includes staying abreast of any NPS trends and emerging substances through the meetings, literature and media reports. We communicate with the other agencies including any other drug monitoring agencies who do seized-drug case Toxicology casework, we identify and then develop testing needed to make sure that our testing is up-to-date for any of these newer substances that are coming out. And then we also evaluate to make sure that our tests are what the client need.

Then in addition, we also try to engage in educational opportunities so that people understand why this testing is needed and why it's relevant. NPS testing really requires constant attention, assessment, resources and updating, and NMS has made that commitment to do so.

Joe Lavelle: You mentioned law enforcement and healthcare entities, how does the information that you develop benefit those type of organizations?

Donna Papsun: So, it's really important our responsibility to communicate to law enforcement and healthcare, because they're affected by what's out there. Law enforcement may encounter individuals who are under the influence of these substances who may be out in the roads endangering others and themselves, and routine testing most likely won't pick up these drugs and then you can't prosecute these individuals for impaired driving. So, law enforcement needs to know what is out there and that additional specialized testing maybe needed in certain cases when routine toxicology is negative or does not support their observations. And healthcare officials need to know the same kind of information because they maybe encountering these individuals when they come into the emergency department and their treatment might be altered depending on what substance may be involved. Or again their routine toxicology maybe negative and really it's one of these NPS that is causing the issue.

Joe Lavelle: Perfect. Donna, from your vantage point what do you see for the future related NPSs?

Donna Papsun: Well, what I hope for is a greater public understanding that NPS is a Public Health Concern and there's a need for a coordinated multi-faceted approach into from different agencies to combat NPS. Consistent, sensitive and comprehensive toxicology testing is needed and should include the most relevant popular substances. With this we can get a better understanding of the true scope of the issue, but without it, there will continue to be underestimation of the problem as well as opportunities to exploit the loopholes, and if they are continued to be loopholes then I fear that the problem will continue and more people will be at risk for these substances.

Joe Lavelle: Well, I for one. I'm glad you're out there. I'm so glad to be a part of this new podcast. I want to take this time to thank the great folks at NMS Labs for creating NMS Intelligence and helping to make this podcast happen. While we have your attention, go to www.nmslabs.com and see what other great things they are doing in addition to helping combat illegal drugs. Donna, it was so great to have you on the show, thanks for stopping by and joining us!

Donna Papsun: Thank you very much.

Joe Lavelle: Well, thank you. That wraps this broadcast. On behalf of our guest, Donna Papsun, I am Joe Lavelle, we'll see you soon on NMS Intelligence.

About Donna Papsun

Donna Papsun is a forensic toxicologist at NMS Labs in Horsham, PA. She has dual Bachelor of Science degrees in Chemistry and Forensic & Investigative Science and a Master of Science degree in Pharmacology. She is also certified as a Diplomate in Forensic Toxicology through the American Board of Forensic Toxicology and is a member of both the Society of Forensic Toxicologists (SOFT) and the American Academy of Forensic Sciences (AAFS).

Ms. Papsun has been with NMS Labs since 2008, first as a bench analyst before promotion to toxicologist in 2012. Ms. Papsun's main areas of interest are drug-impaired driving and NPS. As one of the two leaders of NMS's NPS strategy team, she continuously works to help maintain NMS's leadership in identifying the newest trends in the changing landscape of the designer drug market and developing tests for their detection in forensic toxicology casework.

About Joe Lavelle
Editor-in-Chief, Healthcare at intrepidNow

Joe Lavelle is a Healthcare Management and Technology Consultant with a record of successfully meeting the business and technology challenges of diverse organizations including health plans, health delivery networks, and health care companies for 25 years. Joe worked his way up through Cap Gemini and Andersen Consulting to the partner/VP level of at First Consulting Group, Technology Solutions Group and Santa Rosa Consulting. After running his own company, Results First Consulting, for 12 years Joe Co-Founded intrepidNow with Todd Schnick to create incredible content to dramatically improve the sales and marketing efforts of their clients.

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