

Prevalence of Positive Urine Drug Screen for Fentanyl and its Analogs in Indianapolis

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Background and Hypothesis: IU Health Pathology Laboratory (IUHPL) recently added qualitative fentanyl screening to its test menu. However, fentanyl screening is not currently part of the urine drugs of abuse (DAU) panel which includes amphetamine, barbiturates, benzodiazepines, buprenorphine, cannabinoids, methadone, cocaine, opiates, oxycodone, and phencyclidine. Since fentanyl screen is a standalone test, we were interested in determining how often specimens had this ordered in conjunction with the DAU, as we suspected not all of them did. Our hypothesis was that positive urine drug screens may also be positive for fentanyl/fentanyl analogs.

Project Methods: Urine specimens sent for routine drug screens at IU Health Arnett, Ball, Bloomington, and IUHPL between June and mid-July 2023 were subjected to fentanyl screening. Specimen that screened positive were confirmed by LC-MS/MS for presence of fentanyl and norfentanyl. Additionally, specimens were tested for 4ANPP (fentanyl precursor) and xylazine; if they were positive for either, they were sent to an outside laboratory to ascertain if other fentanyl analogs or designer opioids were present.

Results: Of the 1,893 DAU specimens received, 51.2% were positive for at least one drug class. Only 28 had an associated fentanyl screen order. Cannabinoids represented the most prevalent drug class with a 26.7% positivity rate. Only 1,724 samples were available to screen for fentanyl as part of this study. Of these, 214 specimens were positive for fentanyl, with a positivity screen rate of 12.4%. Confirmatory testing by LC-MS/MS indicated 206 of the 214 were true positives.

Conclusion and Impact: These results highlight the need for fentanyl testing and continued clinician education to increase awareness about the inability of standard urine drug screens to detect fentanyl. Dialogue between patients and clinicians would potentially decrease overdoses and/or result in more treatment referrals. Additionally, integrating fentanyl screening into the DAU panel will facilitate qualitative fentanyl testing.