Drug Profile, Expanded Targeted Panels

Last Literature Review: July 2022 Last Update: June 2024

In 2020, more than 59 million people in the United States used illicit drugs.[1] Furthermore, according to recent preliminary data from the Drug Abuse Warning Network (DAWN), opioids, methamphetamine, cannabis, and cocaine were among the top substances involved in emergency room visits.[2] Other substances, such as prescription medications, are also common factors in the need for emergency medical care. For situations in which the identity or class of one or more drugs is unknown, multidrug analysis may be useful.

Test Interpretation

Sensitivity/Specificity

- Analytic sensitivity: dependent on the cutoff concentrations for applicable analytes (127 analytes included). The concentration at which a drug or metabolite can be detected varies within a drug class. See below for a complete list of analytes and cutoff concentrations.
- Specificity: high; mass spectrometric methodology.

Drug Class/Drug/Drug Metabolite	Drug Profile, Expanded Targeted Panels Cutoff Concentrations (ng/mL)
Anticoagulants	
Apixaban	25
Rivaroxaban	25
Warfarin	100
Anticonvulsants	
Brivaracetam	100
Carbamazepine	100
Carbamazepine-10,11-epoxide[a]	100
Felbamate	100
Gabapentin	100
Lacosamide	100
Lamotrigine	100
Levetiracetam	100
Oxcarbazepine	—
10-hydroxycarbazepine[a]	100
Pregabalin	100
Primidone	100

Drug Class/Drug/Drug Metabolite	Drug Profile, Expanded Targeted Panels Cutoff Concentrations (ng/mL)
Rufinamide	100
Tiagabine	5
Topiramate	100
Zonisamide	100
Antidepressants	
Amitriptyline	50
Nortriptyline[ab]	50
Bupropion	5
Hydroxybupropion[a]	5
Citalopram	5
N-desmethylcitalopram[a]	5
Clomipramine	50
Desipramine	50
Doxepin	50
Desmethyldoxepin[a]	50
Duloxetine	50
Fluoxetine	10
Norfluoxetine[a]	50
Imipramine	50
N-desmethyltrimipramine[a]	50
Mirtazapine	5
Paroxetine	10
Protriptyline	50
Sertraline	20
Trimipramine	50
Venlafaxine	10
O-desmethylvenlafaxine[a]	10
Antidiabetics	
Glimepiride	50
Glipizide	50
Glyburide	50
Antihistamines	

Drug Class/Drug/Drug Metabolite	Drug Profile, Expanded Targeted Panels Cutoff Concentrations (ng/mL)
Chlorpheniramine	100
Diphenhydramine	20
Doxylamine	50
Hydroxyzine	5
Pheniramine	5
Antipsychotics	
Aripiprazole	50
Clozapine	10
N-desmethylclozapine[a]	10
Haloperidol	5
Loxapine	5
Quetiapine	5
Risperidone	5
9-hydroxyrisperidone[a]	5
Trazodone	50
Ziprasidone	5
Benzodiazepines	
Alprazolam	5
Alpha-hydroxyalprazolam[a]	20
Chlordiazepoxide	20
Clobazam	20
Clonazepam	5
7-aminoclonazepam[a]	5
Diazepam	20
Nordiazepam[ab]	20
Oxazepam[ab]	20
Temazepam[ab]	10
Lorazepam	20
Midazolam	5
Alpha-hydroxymidazolam[a]	20
Zolpidem	5
Cardiac Medications	

Drug Class/Drug/Drug Metabolite	Drug Profile, Expanded Targeted Panels Cutoff Concentrations (ng/mL)
Atenolol	20
Atropine	5
Diltiazem	10
Disopyramide	100
Flecainide	50
Lidocaine	100
Metoprolol	5
Mexiletine	50
Propafenone	50
Propranolol	10
Sotalol	50
Verapamil	10
Norverapamil[a]	10
Cough Suppressants	
Dextromethorphan	5
Muscle Relaxants	
Baclofen	20
Carisoprodol	100
Cyclobenzaprine	5
Meprobamate	100
Nicotine	
Cotinine	5
NSAIDs	
Acetaminophen	100
Opioids	
Buprenorphine	5
Norbuprenorphine[a]	5
Codeine	5
Dihydrocodeine	5
Fentanyl	2
Norfentanyl[a]	5
Heroin	—

Drug Class/Drug/Drug Metabolite	Drug Profile, Expanded Targeted Panels Cutoff Concentrations (ng/mL)
6-acetylmorphine[a]	5
Hydrocodone	5
Hydromorphone[ab]	5
Meperidine	10
Normeperidine[a]	10
Methadone	10
EDDP[a]	10
Morphine	5
Naloxone	10
Oxycodone	5
Oxymorphone[ab]	5
Tapentadol	5
N-desmethyltapentadol[a]	5
Tramadol	10
O-desmethyl-cis-tramadol[a]	100
Sedative-Hypnotics	
Ketamine	20
Norketamine[a]	20
Stimulants	
Amphetamine	10
Cocaine	10
Benzoylecgonine[a]	20
Cocaethylene[a]	10
Ephedrine	10
Methamphetamine	10
Methylenedioxymethamphetamine (MDMA)	10
Methylphenidate	5
Ritalinic acid[a]	5
Phencyclidine (PCP)	5
Phentermine	10
Pseudoephedrine	5

[a]Substance is a metabolite of the preceding parent drug.

Drug Class/Drug/Drug Metabolite	Drug Profile, Expanded Targeted Panels Cutoff Concentrations (ng/mL)

[b]Substance can be administered as a prescription drug.

Results

Result	Clinical Significance
Detected	One or more drug analytes were detected in the sample
Not detected	No drug analytes were detected
	Result does not exclude the possibility of drug use or exposure

Limitations

- Minimum reporting limits and estimated concentrations are established for each compound, but quantitative results are not reported.
- Drug concentrations must be greater than or equal to the cutoff to be reported as positive.
- Drug detection depends on specimen quality and the timing of specimen collection relative to drug exposure.

References

1. Substance Abuse and Mental Health Services Administration. 2020 NSDUH Annual National Report. Published Oct 2021; accessed Jul 2022.

2. Substance Abuse and Mental Health Services Administration. 2021 Drug Abuse Warning Network (DAWN) releases. Accessed Jul 2022.

Related Information

Emergency Toxicology