



# Ketamine Involvement in Fatal and Nonfatal Overdoses, Prescribing Patterns, and Seizures in Tennessee

## What is Ketamine?

Ketamine is a type of medicine that helps people feel less pain and forget things for a short time. It has been used by doctors and veterinarians since 1964. At first, it was used to help soldiers during the Vietnam War fall asleep for surgery. Today, doctors sometimes use it to help people with pain and some mental health problems like depression.<sup>1,2</sup>

## Why is Ketamine Important in Tennessee?

Tennessee had the greatest number of seizures and the highest weight of ketamine seized from 2017 to 2022 in the United States.<sup>2</sup> Ketamine has recently drawn attention from the media due to celebrity deaths and use. In the United States, there has been an increase in both medical and recreation use of ketamine. Because of this, we explore trends of ketamine use in Tennessee.

## Identifying Ketamine Fatal and Nonfatal Overdoses, Prescriptions, and Seizures in Tennessee

Suspected cases of nonfatal overdoses involving ketamine were identified in patients seen in the emergency department through the Electronic Surveillance System for the Early Notification of Community-based Epidemics (TN ESSENCE). Ketamine-involved nonfatal overdoses were identified using a text-only definition with the terms: ketamine, ketalar, ketaset, ketajet, ketavet, vetamine, vetaket, special k, kit kat, cat valium, super acid, special la coke, cat tranquilizer, jet k, kitkat, super k, horse trunk, blind squid, cat killer, honey oil, k-hold, k-hole, k-ways, kelly's day, kitty flipping, speedballing, and super c in the context of an overdose event.

Fatal ketamine-detected overdoses were identified using a text search for the terms "ketamine" or 'norketamine' in toxicology results and cause of death text using data from the State Unintentional Drug Overdose Reporting System (SUDORS) data.

Prescription trends were identified using Tennessee Controlled Substances Monitoring Program Database (CSMD) data.

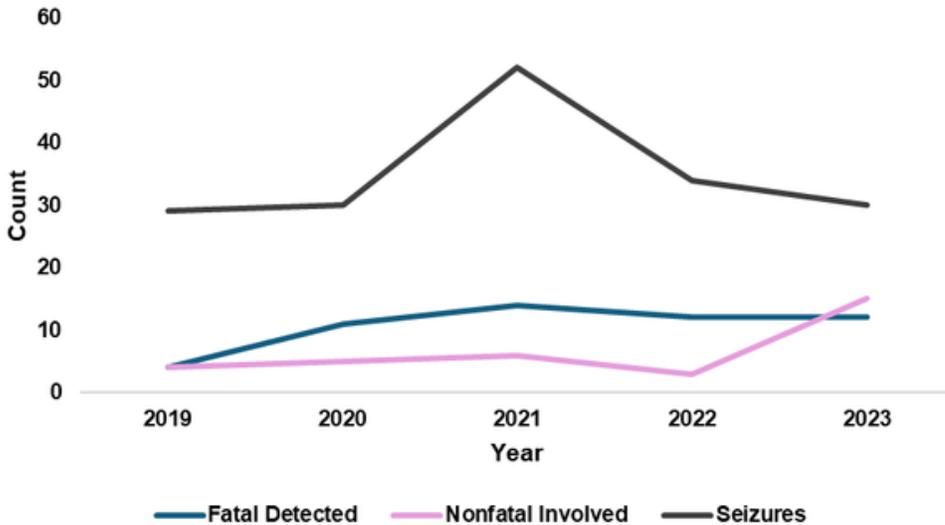
Drug seizures were identified using the National Forensic Laboratory Information System (NFLIS).

**Detected** = Ketamine tested positive on toxicology

## Ketamine Trends in Tennessee, 2019-2023

From 2019 to 2023, 53 ketamine-detected fatal overdoses, 32 ketamine-involved nonfatal overdoses, and 175 seizures of ketamine occurred in Tennessee. As seen in the chart below, the trend of seizures increased 79% from 2019 to 2021 then decreased. Nonfatal ketamine-involved overdoses increased significantly from 2022-2023.

### Trend of Ketamine Overdoses, Seizures, and Prescriptions, 2019-2023



The number of patients filling prescriptions for ketamine has increased significantly from 2019 to 2023; however, **no decedents had a prescription** for ketamine suggesting most **fatal overdoses are from recreational or diverted use.**

Source: TN SUDORS, ESSENCE, CSMD, & NFLIS Data

## Circumstances of People Experiencing a Ketamine Overdose in Tennessee

**3 out of 4**

People Experiencing a Fatal or Nonfatal Ketamine Overdose had a Substance Use Disorder



**96.2%** of fatal ketamine-detected overdoses involved other substances. Naloxone will not reverse a ketamine overdose but since **roughly half** of ketamine-detected overdoses **involved fentanyl**, naloxone should be administered for suspected overdoses.

Ketamine has been detected in fatal and nonfatal overdoses in Tennessee. Ketamine has therapeutic benefits when taken as prescribed; however, nonmedical use poses a dangerous risk. Polysubstance use of ketamine especially in combination with opioids can be dangerous. No fatal overdose decedents had a prescription for ketamine suggesting recreational or diverted use. We will continue to monitor trends in ketamine use and misuse in Tennessee.