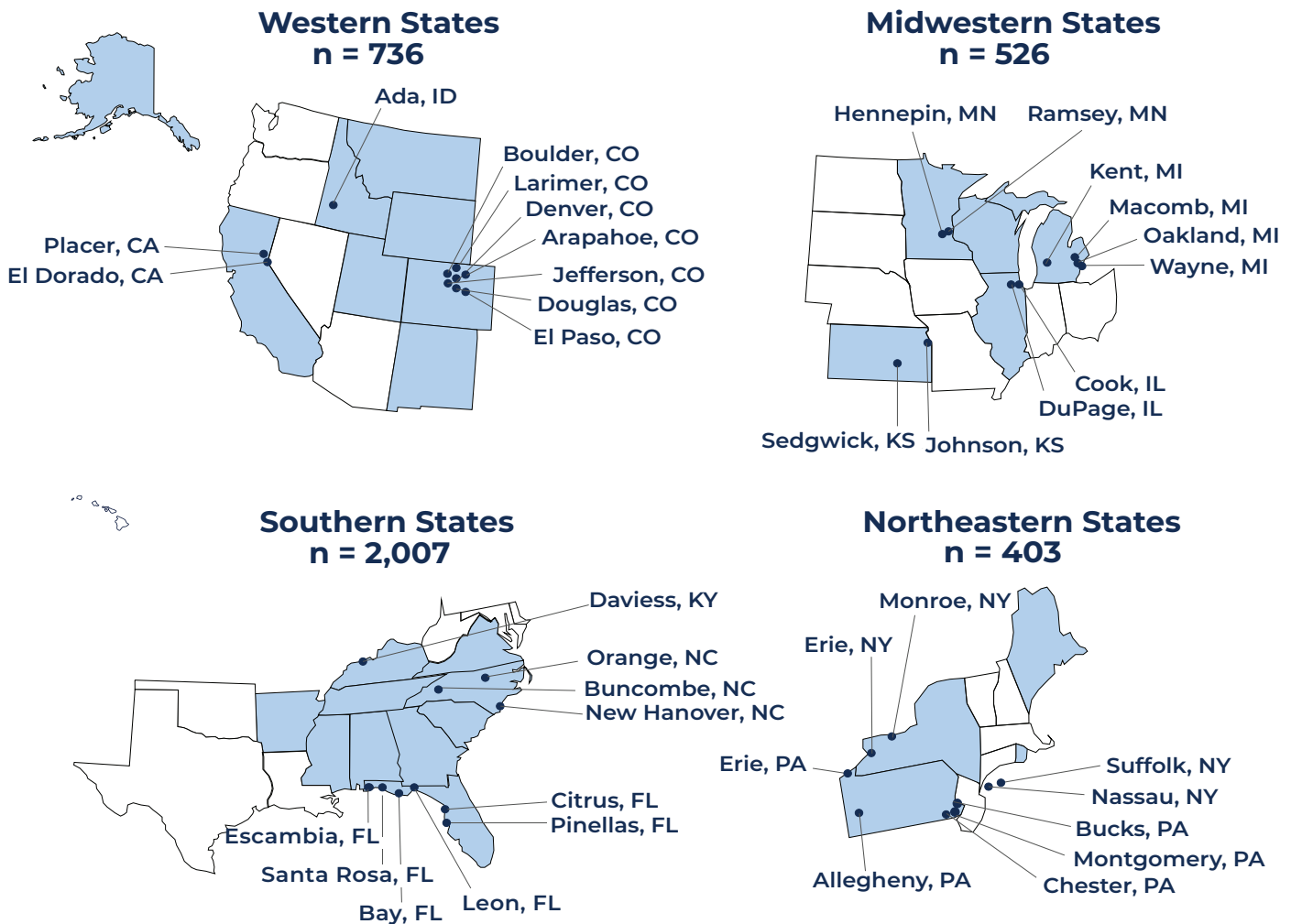


NDEWS Special Report

Top 10 US counties per region with the highest rates of EMS encounters involving nonfatal 7-OH, Mitragynine, or Kratom use per 10,000 population
January 1, 2023 - April 30, 2026

From January 1, 2023 to April 30, 2026, 3,672 suspected nonfatal overdose EMS encounters involving 7-OH, Mitragynine, or Kratom use were recorded nationally across 841 incident counties from 38 incident states. Regionally, 736 encounters occurred in Western states, 526 in Midwestern states, 2,007 in Southern states, and 403 in Northeastern states. Counties with ≥ 10 encounters are presented below as encounters per 10,000 population; counties with fewer than 10 encounters have been suppressed.

Top 10 US counties per region with the highest rates of EMS encounters involving nonfatal 7-OH, Mitragynine, or Kratom use per 10,000 population January 1, 2023 - April 30, 2026



Data Reporting Coverage:

□ $\leq 61\%$ ■ $\geq 62\%$

See page 2 for tables detailing EMS encounters by county

Top 10 US counties per region with the highest rates of EMS encounters involving nonfatal 7-OH, Mitragynine, or Kratom use per 10,000 population
January 1, 2023 - April 30, 2026
n = 3,672

Western States
n = 736

Midwestern States
n = 526

County*	EMS encounters per 10,000 population	County*	EMS encounters per 10,000 population
El Dorado, CA	0.52	Johnson, KS	0.41
Larimer, CO	0.47	Sedgwick, KS	0.37
Douglas, CO	0.47	Hennepin, MN	0.27
Placer, CA	0.47	DuPage, IL	0.25
Boulder, CO	0.46	Kent, MI	0.24
Ada, ID	0.44	Macomb, MI	0.22
Denver, CO	0.44	Oakland, MI	0.21
Jefferson, CO	0.39	Ramsey, MN	0.18
Arapahoe, CO	0.38	Wayne, MI	0.11
El Paso, CO	0.38	Cook, IL	0.05

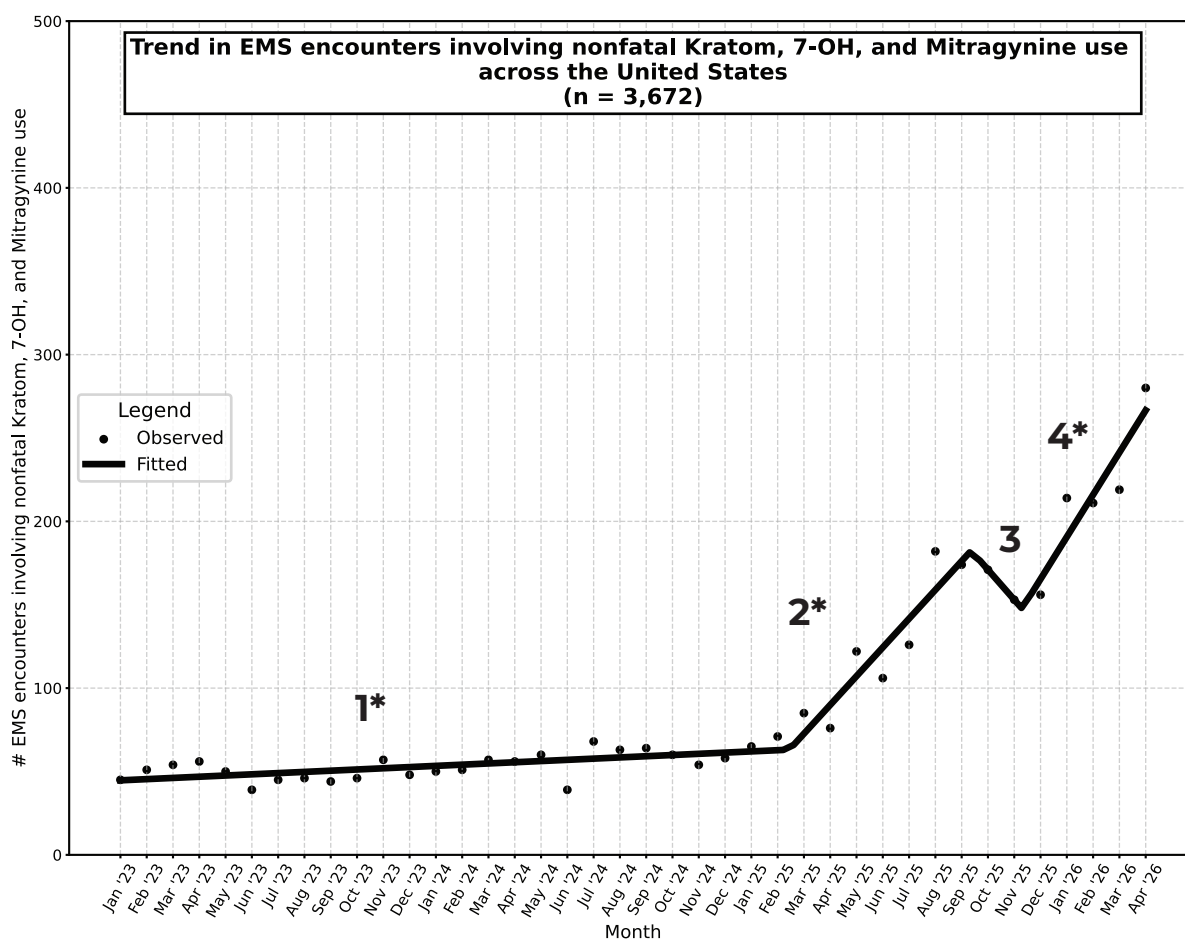
Southern States
n = 2,007

Northeastern States
n = 403

County*	EMS encounters per 10,000 population	County*	EMS encounters per 10,000 population
Escambia, FL	66.71	Erie, PA	0.56
New Hanover, NC	38.79	Allegheny, PA	0.28
Bucombe, NC	28.53	Monroe, NY	0.27
Pinellas, FL	25.84	Bucks, PA	0.24
Daviess, KY	23.70	Suffolk, NY	0.22
Santa Rosa, FL	22.85	Chester, PA	0.21
Orange, NC	22.69	Erie, NY	0.16
Citrus, FL	21.51	Montgomery, PA	0.16
Bay, FL	20.58	Nassau, NY	0.1
Leon, FL	20.23		

*Note: Colors reflect EMS encounters grouped by state

Continued on the next page



Numbered segments (1–4) represent distinct trend periods identified by joinpoint regression. Asterisks (*) denote segments with statistically significant slopes ($p < .05$).

Nationally, EMS encounters involving 7-OH, Mitragynine, or Kratom use increased from January 2023 to February 2025 (Slope 1, $\beta = 0.01$, $p = 0.01$). From March 2025 to September 2025 encounters continued to rise (Slope 2, $\beta = 0.14$, $p < 0.001$). From December 2025 to April 2026 encounters increased (Slope 4, $\beta = 0.12$, $p < 0.001$).

Methodology: Trends in EMS encounters involving nonfatal alcohol use were examined using joinpoint regression. This method fits weighted least-square regression models to EMS encounters on a log transformed scale. It also uses Monte Carlo permutation tests with a Bonferroni correction for multiple testing and identifies models with the best-fit set of joinpoints. These are points (or knots) in trends that indicate significant shifting points. Poisson models were specified under the assumption of non-constant variance or heterogeneity over time. A National model was run and produced statistically significant results.

EMS encounters involving nonfatal kratom, 7-hydroxymitragynine (7-OH), mitragynine, MGM-15, other mitragynine derivatives, and kratom byproducts were included if the encounter involved an emergency response with patient contact and a documented mention of one or more of these substances in the patient complaint, narrative, provider impressions, cause of injury, or other elements in the record (including common misspellings). Encounters were identified to detect incidents involving suspected nonfatal drug overdose, Virginia's definition of non-opioid overdose, or Rhode Island's definition of opioid overdose.

All dispatch types above follow the guidelines set by the National Emergency Medical Services Information System (NEMSIS).

Limitations: Biospatial.io data reflect pre-hospital EMS encounters and do not include hospital outcomes, or toxicology confirmation. Much of the data relies on clinical impressions, self-report, or bystander accounts. Additionally, EMS encounters involving nonfatal alcohol use may be underreported, overreported, or misclassified.