

COHORT AT A GLANCE – Q3 2022–2025 DECEDENTS

5,267

Linked fatal overdose decedents

24,906

All-cause total EMS encounters
linked across the cohort

84%

Decedents linked to ≥ 1 EMS
encounter, Q3 2022–2025

21,021

Prior all-cause EMS encounters
before date of death

Of 6,260 eligible decedents statewide, 993 were not linked to any EMS encounter and are not reflected in the demographic profile below.

BACKGROUND & RATIONALE

The Kentucky Injury Prevention and Research Center's Drug Overdose Fatality Surveillance System (DOFSS) tracks fatal overdoses in Kentucky and feeds into the Centers for Disease Control and Prevention's national tracking system (SUDORS). Kentucky's **120 county coroners** are elected, not centrally trained or overseen, and are not required to order autopsies. How much gets documented, and how well, can vary significantly from county to county, and often leaves DOFSS records with limited patient history and scene detail.

EMS responders, by contrast, record what they see and do while they're treating the patient, not after the fact, as a coroner does. If a decedent had an earlier, nonfatal overdose that EMS responded to, that EMS record can supply exactly the patient history and scene detail that's often missing from DOFSS.

WHAT EMS DATA ADDS

- Scene location, patient disposition (transport, refusal, or deceased on scene), and bystander presence
- Naloxone administration and other life-saving interventions
- Patient demographics, medical history, and social context
- A longitudinal record of prior nonfatal overdose episodes, including timing since the most recent response

Linked decedents' EMS narratives also ran longer and richer: median word count **188** vs. **121** unlinked, with consistent gains across all five topic areas (see Key Findings, page 2).

5,189

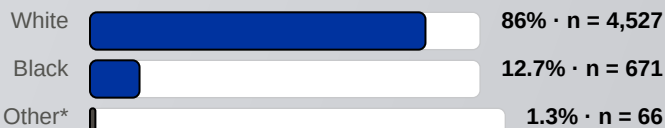
Prior overdose-related EMS encounters identified across 5,267 linked decedents, before each decedent's date of death — each one a point of contact with care. (A single decedent may account for more than one encounter.)

WHO IS CAPTURED BY EMS LINKAGE?

SEX & REGION



RACE



*Small subgroup within the linked cohort; interpret with caution.

Note: Demographic breakdown of the linked decedent cohort (n = 5,267), Q3 2022–2025.

AGE GROUP



IMPLEMENTATION TIMELINE

Late 2019

Pilot: 75 overdose deaths randomly sampled from linked records; feasibility confirmed (not yet used by abstractors)

2019–2022

Kentucky State Ambulance Reporting System joined to DOFSS records in batch; linkage infrastructure built out

Q3 2022–Present

Abstractors used linked EMS data to inform DOFSS/SUDORS records; operational start of analysis period

KEY FINDINGS

PRE-DEATH EMS ENCOUNTER HISTORY AMONG LINKED DECEDENTS

76.9%

Had ≥ 1 prior nonfatal EMS encounter

38.1%

Had ≥ 1 prior *overdose-related* encounter

Mean prior nonfatal EMS encounters per decedent: 4 · Median: 2

NALOXONE ADMINISTRATION DOCUMENTATION IN PRIOR OVERDOSE EMS ENCOUNTERS (N = 5,189)

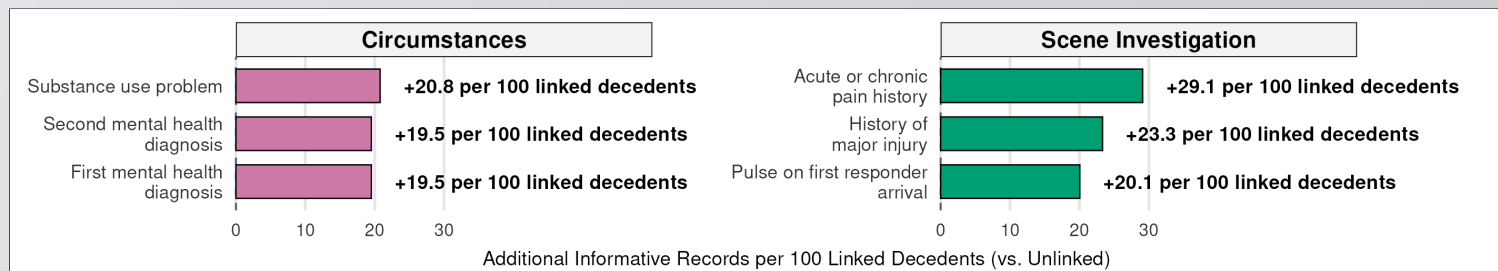
70.2% naloxone administration documented
3,643 encounters with naloxone

29.8% (1,546) no naloxone administered

Among *decedents*: **30.8%** had ≥ 1 prior naloxone administration-documented encounter

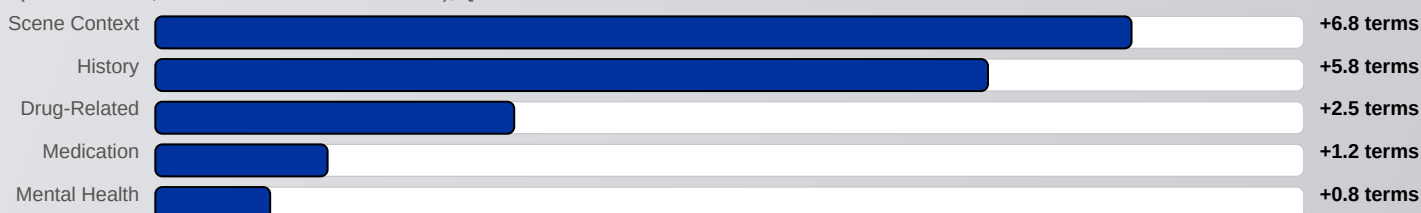
STRUCTURED FIELD COMPLETENESS: LINKED VS. UNLINKED RECORDS

EMS-linked decedents' records more often have complete medical and social history since there are one or more EMS records from which to pull that information. Bars show the average size of that gap between linked decedents and unlinked decedents by category, per 100 decedents.

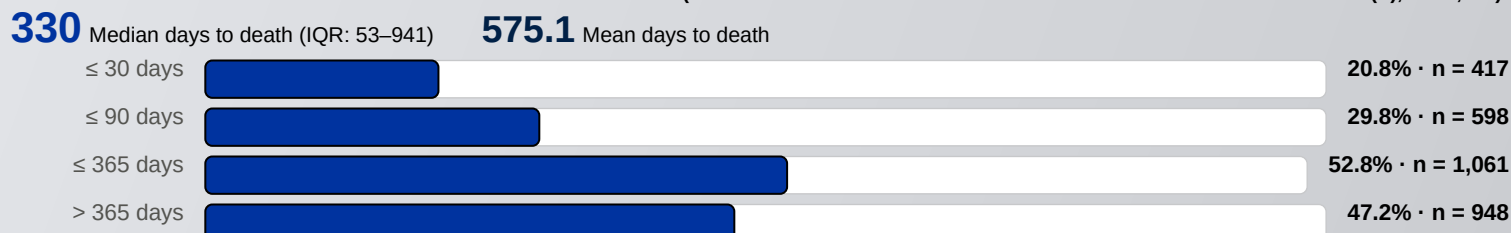


LONGER, RICHER NARRATIVES AMONG LINKED DECEDENTS

A linked EMS record gives abstractors more real-world detail to draw from — about the patient, the scene, and the circumstances of death. The word-count comparison on page 1 measures overall DOFSS narrative length; the bars below measure additional domain-specific terms per narrative, on average, compared to unlinked decedents (main narrative; scene narrative about the same), Q3 2022–2025.



TIMING FROM LAST PRIOR OVERDOSE EMS ENCOUNTER TO DEATH (AMONG DECEDENTS WITH PRIOR OVERDOSE-RELATED ENCOUNTER(S), N = 2,009)



LESSONS LEARNED & IMPLICATIONS

Kentucky's experience demonstrates how both centralized and decentralized death investigation systems can improve overdose fatality surveillance through EMS record linkage. EMS records provide an ongoing, population-level archive of medical encounters, documenting recent overdose activity, naloxone administration, bystander involvement, and timing since the last known nonfatal episode, which fills documentation gaps regardless of whether death investigation is coroner-based or medical-examiner-based. Among decedents with a prior overdose-related EMS encounter, 20.8% had a contact within 30 days of their fatal overdose, underscoring EMS's role as both a surveillance data source and a frontline touchpoint for secondary overdose prevention and treatment linkage.

DISCLAIMER

These findings are based on preliminary linked data. Numbers may not match previously reported figures due to differences in record linkage methodology, reporting period, or case definition. A subsequent linkage correction identified 49 additional linked decedents and additional EMS encounters for 294 previously linked decedents, not yet incorporated into this abstraction. Data are subject to revision. This project is supported by the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) as part of cooperative agreement 1 NU17CE010186 totaling \$16,222,256 with 0% financed with nongovernmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, CDC, HHS, or the U.S. government. For more information, please visit [CDC.gov](https://cdc.gov).

Data sources: Drug Overdose Fatality Surveillance System (DOFSS) · CDC State Unintentional Drug Overdose Reporting System (SUDORS) · Kentucky State Ambulance Reporting System (KStARS) | **Period:** Q3 2022–2025 | **Contact:** Kentucky Injury Prevention and Research Center (KIPRC) at KIPRC@uky.edu