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Factors Associated With Emergency Medical Services Transport Refusal After Naloxone Reversal: A Multi-City Analysis From the Real-World Examination of Naloxone for Drug Overdose Reversal (RENDOR) Cohort

Amanda M. Sutphin, Alyssa Falise, Kim Aldy, Shaoye Li, Sharan Campleman, Rachel Culbreth, Jeffrey Brent, Paul Wax, On Behalf of the ToxIC RENDOR Study Group

American College of Medical Toxicology, Phoenix, AZ, USA; Baylor University School of Medicine, Dallas, TX, USA; University of Colorado School of Medicine, Aurora, CO, USA

Background: Naloxone is frequently administered by bystanders, non-medical responders, and emergency medical services (EMS) during opioid overdoses. While effective, some patients elope or refuse transport after reversal. Understanding how transport outcomes vary by demographics, naloxone administration, and clinical response is crucial for overdose prevention and response efforts.

Objectives: This study examines factors associated with EMS transport refusal following naloxone administration.

Methods: We analyzed 1,609 overdose cases from four EMS sites (Denver, Detroit, Pittsburgh, San Francisco) in the Real-World Examination of Naloxone for Drug Overdose Reversal (RENDOR) study, which examines prehospital patterns of naloxone use and patient outcomes. Differences in age, sex, race/ethnicity, naloxone route/dose, and precipitated withdrawal were observed by outcome (transported vs. eloped/refused). Multivariable logistic regression identified sociodemographic and naloxone-related predictors of outcomes among patients who received intranasal naloxone only (n = 951).

Results: Patients transported by EMS were older than those who eloped/refused (48.2 vs. 45.2 years; p = 0.002). Black patients were transported more often (52.5%) than White patients (38.5%), while more White patients eloped/refused care (46.1% vs. 42.7%; p = 0.047). Intranasal (IN)-only naloxone was more commonly used among those who eloped/refused (71.5%) than those who received naloxone by intravenous (IV), intramuscular (IM), or intraosseous (IO)-only (15.0%, p = 0.001). IN-only recipients received a mean dose of 5.0 mg (SD = 3.8), versus 1.6 mg (SD = 1.0) for those treated with IV/IM/IO-only. Despite this variation, dose was not significantly associated with transport status (p = 0.832 for IN-only; p = 0.099 for IV/IM/IO-only). Precipitated withdrawal occurred in 11.5% of cases and was not significantly linked to transport (p = 0.705). In comparison to Non-Hispanic White cases, Black cases had lower transport odds (OR 0.7, 95% confidence interval [CI] [0.49, 0.95]); however, after adjusting for naloxone dose and other sociodemographics, it was no longer significant.

Conclusions: Higher refusal rates were observed among White patients and those receiving IN-only naloxone, suggesting that less invasive administration routes, especially without advanced EMS care, may influence transport decisions. IN use may reflect timely bystander

intervention in areas with strong naloxone distribution. These findings highlight the need for targeted post-reversal strategies to reduce elopement and improve engagement.