Identification of Patient Factors Predictive of Naloxone Prescription:
A Retrospective Cohort Study

Elizabeth Eastman PharmD Candidate, Riley Skube PharmD Candidate,
Timothy Cruz PharmD, Christopher Herndon PharmD BCACP

Abstract

Purpose: In 2018 alone, there were a total of 67,367 deaths from drug overdose in the United States. 69.5% of these deaths have been attributed to opioid overdoses. The United States Department of Health and Human Services recommends naloxone be accessible to all patients at high risk of opioid overdose to reduce overdose deaths. Despite increasing rates of naloxone distribution, widespread access to this medication is still lacking. The purpose of this study was to elucidate factors predictive of naloxone prescription in a large federally qualified health center (FQHC) to better target educational efforts and reduce barriers to access.

Methods: A retrospective chart review was conducted of all patients who were prescribed naloxone within a FQHC from August 1st, 2015 through August 1st, 2020. Only 114 patients were identified as having received naloxone via prescription during this time frame. A second chart query was performed to identify patients receiving long-term opioid prescriptions (defined as three or more opioid prescriptions in a rolling 12-month time period) and no naloxone during the same time frame. From this sample, 114 patients were randomly selected from the queried charts to serve as a comparison to those patients who were prescribed naloxone. A chart abstraction was conducted to collect additional patient factors. A binomial logistic regression analysis was performed to ascertain the effects of race, sex, age, income level, opioid indication, primary opioid, and concurrent co-prescription of benzodiazepines, sleep hypnotics, or skeletal muscle relaxants on the likelihood that a patient receiving any opioid over a five-year span would be prescribed naloxone.

Results: The model explained 33.3% of the variance in naloxone prescription and correctly classified 70% of the cases. Caucasians were seven times more likely to receive naloxone when prescribed an opioid compared to non-Caucasian patients (OR 7.43, 95% CI 3.46 – 15.95). Additionally, patients categorized as having opioid use disorder were 22 times more likely to receive a prescription for naloxone compared to patients receiving opioid therapy for a chronic pain indication (OR 22.71, 95% CI 2.86 – 180.53). Patient sex, income level, and concurrent use of non-opioid medications known to increase the risk of opioid overdose did not predict receipt of naloxone. When primary opioid was modeled, only buprenorphine and oxycodone predicted receipt of naloxone.

Conclusion: These findings suggest there are numerous disparities in terms of naloxone prescribing and significant opportunity for prescriber education. Within this study Caucasian patients were more likely to be prescribed naloxone than their non-Caucasian counterparts. Additionally, the results also highlighted a need for intervention regarding patients with concurrent use of medications known to increase the risk of an opioid overdose. These were no more likely to receive naloxone than patients prescribed a long-term opioid alone. In order to reduce barriers to naloxone access for patients, these disparities in its prescription should be a focus of future prescriber education efforts.