

Title: A Description of Naloxone Administration by Law Enforcement Officers in South Carolina

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Introduction: To combat the opioid overdose epidemic, in 2016, Law Enforcement Officers (LEO) in South Carolina began administering naloxone to patients prior to EMS arrival. Research into the success of initiatives allowing prehospital LEO administration of naloxone are scant. The South Carolina (SC) Department of Health and Environmental Control (SCDHEC), Bureau of EMS requires LEOs to complete a form, similar to a prehospital care report, anytime naloxone is administered.

Objective: To evaluate the success of the SC initiative allowing LEO administration of naloxone and to describe patients receiving LEO administered naloxone.

Methods: This retrospective observational study evaluated all patients who received LEO administered naloxone from June 11, 2016 to April 13, 2018. Study data were obtained from the Law Enforcement Officer Naloxone Reporting Portal (LEON) located within the EMS Performance Improvement Center at the University of North Carolina – Chapel Hill. Analysis included a description of the patient indicators that initiated LEO administration of naloxone, calculation of the proportion of successful reversals, the patient level of responsiveness following a reversal, and the amount of time it took for the naloxone to take effect following LEO administration of naloxone, and any other patient care related actions that were taken by the LEOs. Descriptive statistics were calculated to describe patient age and gender. The number of repeat patients was also calculated. Finally, where available, the type of opioid causing the overdose was described. Information regarding the type of opioid causing the overdose was obtained by follow-up investigations from the SCDHEC, Bureau of EMS.

Results: Since 2016, 243 patients received LEO administered naloxone. Of these, there were 24 (10.0%) patients that had received EMS administered naloxone within 12 months or less from the date of the LEO naloxone administration. There were 5 (2.0%) repeat patients who received LEO administered naloxone on separate dates during the study period. The majority of patients were male (67.9%). Patient age ranged from 14 to 65. The average age was 35.2 (standard deviation 11.2) and the median age was 33 (interquartile range 27-42). Slow breathing (68.7%) was the most commonly reported indicator for naloxone administration followed by pinpoint pupils (43.2%), blue lips (43.2%), no pulse (25.9%), slow pulse (14.8%), no breathing (10.3%), paraphernalia on scene (9.5%), and bystander report of overdose (9.1%). There were 201 (82.7%) of patients that had more than one indicator reported and 10 (4.1%) that did not have an indicator reported. The patients response to the first dose of naloxone was most often reported as “responsive but sedated” (48.6%) followed by “responsive and alert” (40.7%) and no response to naloxone (10.7%). There were 105 (43.2%) times when a second naloxone administration was required. Overall LEO administered naloxone led to successful reversal (96.3%) in total. When evaluating the time it took for naloxone to take effect, LEO reported it took less than one minute 20.6% of the time, 1 to 3 minutes 28.0% of the time, 3 to 5 minutes 33.3% of the time, and greater than 5 minutes 17.7% of the time. Following naloxone administration LEOs delivered the following additional patient care related actions: place the patient in the recovery position (28.8%), performed CPR (26.3%), performed a sternal rub (18.1%), and applied an AED (3.7%). Finally, the type of opioid causing the overdose was reported on 67 calls. Of those 67, this free text question returned the following information: Heroin (80.6%), Heroin and Meth (7.5%), Oxycodone (3.0%), Fentanyl (1.5%), Fentanyl and Roxy (1.5%), Heroin and Xanax (1.5%), Lortabs and ETOH (1.5%), Norco and Valium (1.5%), Roxycodone (1.5%).

Conclusion: The South Carolina LEON program allowing law enforcement administration of naloxone was highly successful. Over 96% of calls where LEO administered naloxone resulted in a patient reversal.

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