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Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health

Title

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Permalink

https://escholarship.org/uc/item/86n5t21t

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 27(3.1)

ISSN

1936-900X

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Publication Date

2026-06-14

DOI

10.5811/westjem.66262

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receiving either pre-EMS or EMS-only NLX.

Conclusion: In San Francisco, NLX is often administered by pre-EMS responders in public settings and among younger patients, while EMS use is more common in private residences. Most administrations are by bystanders, highlighting the critical role of layperson NLX use and supporting public health interventions that expand bystander distribution in urban settings.

26 E-Bike Injuries and Rider Characteristics at a Level 1 Trauma Center: A Retrospective Review

Kenny Nwadike, Jaydon Ike, Soheil Saadat, MD, PhD, Sigrid Burrus, MD, Danielle Matonis, MD

Background: MElectric bicycles (e-bikes) are an increasingly popular and convenient form of transportation, but with variable laws and regulations governing them across the country and the globe. With the increase in e-bikes in use, there has also been an increase in the number of e-bike-related injuries. This study aims to characterize the severity of injuries of patients presenting to a trauma center and to analyze characteristics of the riders.

Methods: This is a retrospective cross-sectional study of the trauma registry of patients presenting after e-bike incidents to a level 1 trauma center in Orange County, California from January 2021 - January 2025. We analyzed registry data including demographic information, mechanism of injury, helmet use, vitals, lab results, Injury Severity Score (ISS) and Abbreviated Injury Scale (AIS).

Results: 397 e-bike incidents were analyzed. 36 patients presented in 2021 with annual numbers increasing to 172 by 2024. 79.8% of riders were male, 16.3% were under 18 years of age, and 9.6% were 65 years or older. 26.8% of patients were wearing helmets at the time of collision. Patients without helmets were more likely to have a higher head and neck AIS score ($p = 0.03$). Other AIS scores were similar between helmeted and unhelmeted groups. Fall from e-bike (48.2%), e-bike vs automotive (35.1%), and e-bike vs stationary object (13.1%) made up the majority of specific mechanisms. Many riders tested positive for alcohol or drugs on urine and blood tests including marijuana (43.8%), alcohol (32.0%), methamphetamine (15.7%) and opiates (5.1%). Patients with alcohol or methamphetamine detected on drug screening were less likely to wear a helmet ($p < 0.001$). There was no difference in average ISS score between patients that tested positive or negative for substances.

Conclusion: This data reflects a trend seen globally of increasing e-bike incidents presenting to trauma centers and emphasizes the importance of addressing this public health concern. In our population, there are high rates of risky riding behavior including lack of helmet use and riding under the influence of drugs or alcohol. This data can help clinicians, public health officials, policy makers, and other community stakeholders design preventative interventions and target the appropriate populations.

27 Watch Out Below! A Comparison of Hiking and Rock-Climbing Falls at a Level I Trauma Center

Bridger Woods, BS, Allison McNickle, MD, FACS

Background: Over 60 million Americans participate in hiking and 8 million in rock climbing. Limited data is available regarding injury patterns associated with these activities. We hypothesize that lower extremity injuries would be more common in hiking and fewer head injuries would be seen in climbing due to helmet use.

Methods: This is a retrospective review of patients injured in a "fall from cliff" (W15.xxx) at a single Level 1 Trauma Center from January 2017 to December 2024. Event details were collected from Emergency Medical Services (EMS) and hospital documentation with patients excluded if not participating in rock climbing or hiking. Data collected included: initial vitals, interventions, and transport time/method from field to hospital. Hospital data included injuries, length of stay, interventions, and discharge disposition. The groups were compared using Stata with $p<0.05$ as significant.

Results: The cohort consisted of 127 patients, 51 rock climbers and 76 hikers, with similar demographics. Climbers more frequently used a helmet (65.2% vs. 5.3%, $p<0.001$). The median fall distance was similar (20 ft vs. 25 ft, $p=0.682$). Field extrication was mostly by helicopter (62.6%) and transport to the hospital by ground ambulance (65.4%). EMS interventions included spinal motion restriction (69.2%), medications (65.4%) and splinting (43.3%). Admission vital signs were similar. Frequency of traumatic brain injury and spine injuries were not different, but facial injuries were more common in hikers (25% vs 11.8%, $p=0.066$). Hikers had more upper extremity injuries (38.2% vs. 19.6%, $p=0.026$) but there was no significant difference in lower extremity injuries (36.8% vs. 51.0%, $p=0.114$). Almost equal numbers of hikers and climbers had surgery (34 climbers and 30 hikers), usually from orthopedic injuries. Hikers required more laceration repairs (39.5% vs 9.8%, $p<0.001$). Of the cohort, 22 (17.3%) were discharged from the ED while the remainder were admitted to the hospital, with an average length of stay of 4.6 days. Discharge disposition was mainly to home (83.5%), with 12.6% requiring inpatient rehabilitation and 2 mortalities, both climbers.

Conclusion: Despite differences in helmet use, the injury pattern and treatment for climbing and hiking were similar, except for hikers having higher rates of lacerations and upper extremity injuries. Fortunately, the in-hospital mortality was low, and most patients returned home after injury.