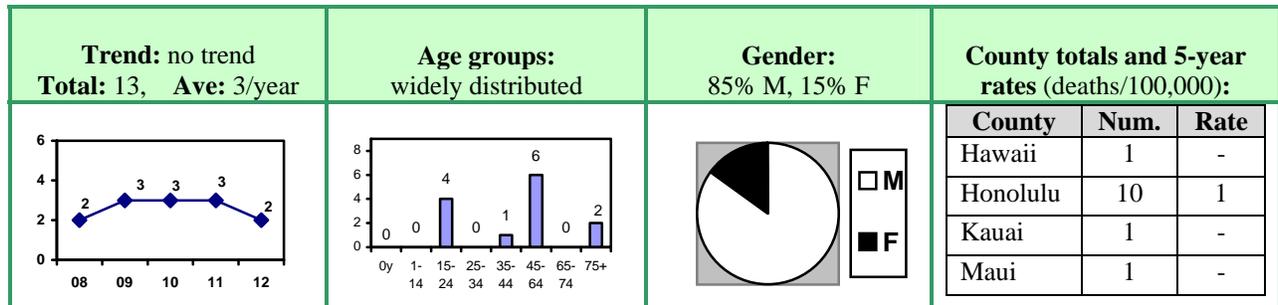


Motor vehicle crashes, bicyclists

Fatal injuries

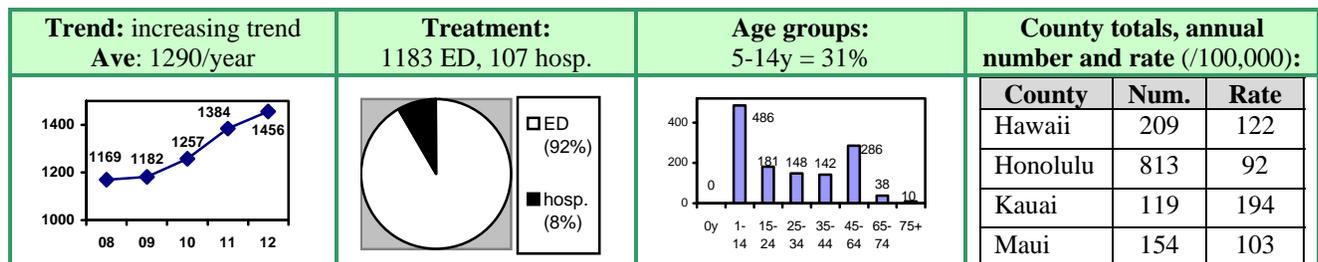
There were between 2 and 3 bicyclists killed in Hawaii each year, and 77% (10) of the 13 deaths occurred on Oahu. There was no apparent high-risk age group. Almost all (85%, or 11) of the bicyclists killed over the 5-year period were males. Most (87%, or 13) of the victims were hit by a car; 2 others died after falling off their bicycles. Only 2 of the victims were wearing helmets at the time of the crash (status unknown for 4 others). There was no notable peak time of the day for the crashes; most (67%, or 8) occurred between during daylight hours between 7:31 a.m. and 7:00 p.m.



FARS data, 2007-2010: Almost all (91%, or 10) of the 11 traffic-crashes involved cars traveling straight on the road; only 1 crash was due to a car making a turn. Two (18%) of the 11 bicyclists tested positive for alcohol, and 4 (36%) tested positive for drugs. Overall, about half (54%, or 6) of the victims tested positive for either alcohol or drugs. Besides substance use 2 bicyclists were traveling against traffic at the time of the crash and another failed to yield the right-of-way. Four (36%) of the 11 drivers made an error which contributed to the crash, most commonly substance use and speeding (2 instances each).

Nonfatal injuries

There were nearly 1300 nonfatal injuries to bicyclists each year, with an increasing trend. Most (92%) of the injuries were treated in EDs. Males comprised 75% of the patients, including 79% of those who were hospitalized. The highest injury rates were computed for 5 to 14 year-olds, who comprised nearly one-third (31%) of the patients.



The injury rate for Kauai County residents was significantly higher than the rates for any other county, and approximately double the rate estimates for residents of Honolulu or Maui counties. Almost all (87%) of the injuries were coded as “non-traffic”, or occurring on private roads, driveways, or off-road environments. Most of the injuries treated in EDs (87%) and

requiring hospitalization (72%) were coded to indicate crashes that did not involve a collision with another vehicle or object, but were probably due to the patient falling off of the bicycle. Although 92% of the patients were treated in EDs, hospitalizations comprised 32% of the treatment days and 62% of the total medical charges of \$6.2 million/year. Most (66%) of the hospitalized patients had fractures, including 16% with skull fractures and 20% with leg fractures. More than one-third (37%) of these patients had a traumatic brain injury.

EMS data and 2007 linked data (EMS, DOT, HHIC, FARS, death certificates)

Most (73%) of the EMS-attended bicyclist crashes were distributed over the 11-hour period of 7:31 a.m. to 6:29 p.m., with a peak from 4:31 p.m. to 6:29 p.m. (17%). About half (53%) of the injuries involved motor vehicles and 47% did not. Only 27 of the injured bicyclists wore helmets. Unhelmeted riders had a significantly higher proportion of “critical” or fatal injuries (2.1%, or 22 of 1031), compared to helmeted riders (0.7%, or 3 of 458). These differences were accentuated among crashes that involved motor vehicles, as the proportion of unhelmeted bicyclists with critical or fatal injuries was 3.1% (17 of 540), compared to 0.9% (2 of 214) among helmeted riders. Probable alcohol use was noted for about 9% of the patients. If only the bicyclists with known alcohol and helmet status were considered, helmet use was 5 times higher among those who did not consume alcohol (35%), compared to the drinkers (5%).

Linked data from 2007 showed odds of sustaining an injury that required hospitalization or resulted in death were 80% higher among unhelmeted rides compared to helmeted riders, although this estimate was only of “borderline” statistical significance ($p=0.11$).

Hawaii Trauma Registry (toxicology data)

Only 11% of the injured bicyclists in the HTR had been drinking at the time they were injured. This percentage was nearly three times higher among those hurt in crashes that did not involve a motor vehicle compared to those who were hit by motor vehicles (15% vs. 6%, respectively). About one-quarter of the bicyclists tested positive for illicit drugs, most commonly narcotics (17%), and this proportion did not differ by the type of crash. Overall, one-third (33%, or 89) of the 271 patients tested positive for either alcohol or drugs. None of the 28 bicyclists who had been drinking were wearing a helmet at the time of the crash, compared to 27% usage among those who tested negative for alcohol, and 31% among those who were not tested.