

NJ-SHO Data Dashboard
Safety Topics: New Jersey Bicyclists Involved in Crashes
Data Documentation
<https://www.njsho.chop.edu>

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New Jersey Safety and Health Outcomes (NJ-SHO) Center for Integrated Data

As part of the Center for Injury Research and Prevention (CIRP) at Children’s Hospital of Philadelphia (CHOP), researchers created the NJ-SHO Center for Integrated Data to address data gaps needed for critical research in traffic safety, injury, and prevention. The Center is focused on expanding access to holistic traffic and injury information using a public-facing dashboard developed in consultation with New Jersey traffic safety experts.

New Jersey Safety and Health Outcomes (NJ-SHO) Data Warehouse

The NJ-SHO Data Warehouse integrates statewide administrative traffic safety and injury databases. By conducting novel linkage techniques to integrate data from various sources into a centralized data warehouse, we established a comprehensive and compelling resource to be used for high-priority safety and health research. The data warehouse comprises census tract-level indicators, driver licensing data, traffic-related citation data, police crash reports, birth certificate data, death certificate data, hospital discharge data, and electronic health records of New Jersey residents who were patients of the Children’s Hospital of Philadelphia pediatric health care network. For detailed information on the NJ-SHO Data Warehouse, see the NJ-SHO Data Warehouse Technical Documentation [here](#).

Dashboard View – Safety Topics: New Jersey Bicyclists Involved in Crashes

The Safety Topics: New Jersey Bicyclists Involved in Crashes provides information on people involved in crashes on New Jersey roads from 2010 through 2019. This dashboard view focuses on bicyclist characteristics (sex, race and ethnicity, age), where they live and incorporates equity measures. Aggregated data was used to calculate crash, injury, and fatality rates at the county and state level. In addition to this data dictionary, the zip file contains aggregated data text (.csv) files that serve as the underlying data of this dashboard view.

Zip file list of materials:

File Description	File Name
Data Dictionary	v9_st_bicyclists_data_dictionary_20240429.docx
Dataset 1	v9_equity_bicyclists_20240429.csv
File Description	File Name
Dataset 2	v9_trend_bicyclists_20240429.csv

Data Elements

Crash Years

This dashboard view is restricted to crash years 2010-2019.

Injury Rates

Injury rates are restricted to crash years 2016-2019.

Driver Age

The dashboard views are restricted to drivers ages 16-99.

Race and Ethnicity

While race and ethnicity are not collected on the NJ crash report, we were able to determine the race and ethnicity of crash-involved individuals through linked records. We first identified known values from other sources (e.g., hospital discharge records, death certificates). For any individuals with missing or unknown values, the Bayesian Improved Surname Geocoding (BISG) algorithm was used to estimate the probability that an individual belongs to six mutually exclusive racial/ethnic groups: non-Hispanic White, Hispanic, non-Hispanic Black or African American, non-Hispanic Asian and Pacific Islander, non-Hispanic Multiracial, and non-Hispanic American Indian and Alaska Native. Briefly, BISG combines information from the 2000 US Census surname list with information on the racial/ethnic composition of each 2010 US Census block group to produce this set of probabilities. Given that individuals who identify as Hispanic may belong to any race, non-Hispanic racial categories were created to differentiate those who do not identify as Hispanic.

Rates

In order to calculate a crash rate for a particular driver population, the same demographic and geographic characteristics were used for the drivers involved in crashes and the total number of licensed drivers. For example, the crash rate for male residents of Atlantic County was calculated using the number of male residents of Atlantic County with a crash and the total number of male licensed drivers residing in Atlantic County. This also applies to bicyclists and pedestrians except that the denominator uses the *total New Jersey population* with the same demographic and geographic characteristics rather than licensed drivers.

Driver Crash Rate

Driver Crash Rate is calculated by dividing the number of drivers involved in crashes (numerator) by the total number of licensed drivers (denominator). The rate is then expressed per 10,000 licensed drivers to make it easier to understand and compare.

$$\text{Driver crash rate per 10,000 licensed drivers} = \frac{\# \text{ of drivers involved crashes} \times 10,000}{\text{total number of licensed drivers}}$$

Bicyclist Crash Rate

Bicyclist Crash Rate is calculated by dividing the number of bicyclists involved in crashes per 100,000 residents by the number of licensed drivers.

$$\text{Bicyclist crash rate per 100,000 residents} = \frac{\# \text{ of bicyclist crashes} \times 100,000}{\text{total New Jersey population}}$$

Pedestrian Crash Rate

Pedestrian Crash Rate is calculated by dividing the number of pedestrians involved crashes per 100,000 residents by the number of licensed drivers.

$$\text{Pedestrian crash rate per 100,000 residents} = \frac{\# \text{ of pedestrian crashes} \times 100,000}{\text{total New Jersey population}}$$

Data Dictionary

The table(s) contain variable and value descriptions that users should reference when exploring the data. Users are provided with a data dictionary that corresponds to the data downloaded from the dashboard. For more information about the metadata please consult the technical document.

Dataset 1: v9_equity_bicyclists_20240429.csv

Variable Name	Data Type	Description
name	Character	Name of state or county
fips_state	Character	FIPS code state
fips_county	Character	FIPS code county
year_min	Numeric	Calendar year of crash (yyyy) first year in period
year_max	Numeric	Calendar year of crash (yyyy) last year in period
bicyclists_all_rate	Numeric	Crash rate calculated by the number of bicyclists involved in crashes per 100,000 residents
bicyclists_injury_rate	Numeric	Crash rate calculated by the number of bicyclists injured in crashes per 100,000 residents (2016-2019 only)
bicyclists_fatal_rate	Numeric	Crash rate calculated by the number of bicyclists killed in crashes per 100,000 residents
cre3	Numeric	Community Resilience Estimate (CRE) 2019: proportion of individuals with 3+ risk factors
cre3_rank	Numeric	Community Resilience Estimate (CRE) 2019: county rank (1 = greatest proportion...21 = lowest proportion)

Data dictionary for **v9_equity_bicyclists_20240429.csv** continued...

Data Type	Data Type	Description
cre3_quintile	Numeric	Community Resilience Estimate (CRE) 2019: county quintile (1st = greatest proportion...5th = lowest proportion)
SVI	Numeric	Social Vulnerability Index (SVI) 2018: county percentile rank (higher values indicate greater vulnerability)
SVI_rank	Numeric	Social Vulnerability Index (SVI) 2018: county rank (1 = highest values...21 = lowest values)
SVI_quintile	Numeric	Social Vulnerability Index (SVI) 2018: county quintile (1st = highest values...5th = lowest values)
CHR_HF	Numeric	County Health Rankings 2019 - Health Factors: health behaviors, clinical care, social & economic factors, physical environment (lower ranking indicate worse health with 1 = best health...21=worst health)
chr_hf_rank	Numeric	County Health Rankings 2019 - Health Factors: county rank (inverse of original rank with 1 = worst health...21=best health)
chr_hf_quintile	Numeric	County Health Rankings 2019 - Health Factors: county quintile (1st = worst health...5th = best health)

Dataset 2: v9_trend_bicyclists_20240429.csv

Variable Name	Data Type	Description
name	Character	Name of state or county
fips_state	Character	FIPS code state
fips_county	Character	FIPS code county
demographic	Character	Demographic characteristic
demographic_value	Character	Demographic characteristic value
year_min	Numeric	Calendar year of crash (yyyy) first year in period
year_max	Numeric	Calendar year of crash (yyyy) last year in period
bicyclists_all_rate	Numeric	Crash rate calculated by the number of bicyclists involved in crashes per 100,000 residents
bicyclists_injury_rate	Numeric	Crash rate calculated by the number of bicyclists injured in crashes per 100,000 residents (2016-2019 only)
bicyclists_fatal_rate	Numeric	Crash rate calculated by the number of bicyclists killed in crashes per 100,000 residents