



Status Summary 2023:
Road Safety Risk Factors

Bloomberg Philanthropies Initiative for Global Road Safety

**MEXICO CITY,
MEXICO**



Beginning in 2022, the Johns Hopkins International Injury Research Unit, through the Bloomberg Philanthropies Initiative for Global Road Safety, has been conducting observations in Mexico City to reduce road injuries and fatalities.

The following report highlights results from an ongoing study that captured observations of three risk factors:* speed, helmet use, and seat-belt and child restraint use. The results are based on data collected between October 2022 and May 2023.

*This study did not observe drink driving due to COVID-19 risks.

Speeding was high among all observed vehicles



Almost half of observed motorcycles exceeded the speed limit



Correct helmet use was low among all motorcyclists

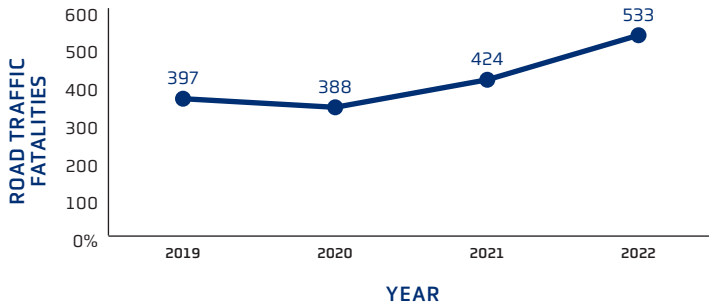


Seat-belt use among occupants ≥ 12 years old was low

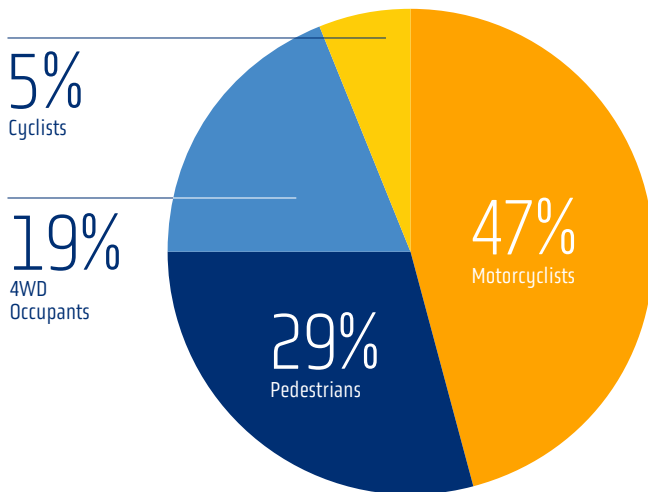


Road Traffic Fatalities in Mexico City

Road traffic fatalities have been increasing



Deaths by road user, 2022



Vulnerable road users (motorcyclists, pedestrians, and cyclists) **accounted for 81% of road traffic fatalities.**

Note: Data from existing sources was used for the outcome data indicators. Police crash data systems are prone to underreporting.

In this report, motorcyclists and 4WD occupants are both drivers and passengers of motorcycles and 4WD, respectively.

Recommendations

Transit Agents

- Increase enforcement of:
 - Speed limits, particularly among motorcycles and on local roads and expressways.
 - Correct helmet use, especially among passengers and motorcyclists on arterial roads.
 - Seat-belt use, particularly among rear-seat passengers.
 - Age-appropriate child restraint use.

Secretary of Mobility

- Implement a maximum speed limit of 30 km/h on roadways where motorized traffic mixes with pedestrians and cyclists, and 50 km/h in urban areas.
- Implement mass-media campaigns in combination with increased enforcement on:
 - The dangers of speeding.
 - Correct helmet use.
 - Seat-belt and child restraint use.
- Strengthen penalties for all vehicles exceeding the posted speed limit.

Speed in Mexico City

Higher speeds lead to a greater risk of a crash and a higher probability of serious injury. An increase of 1 km/h in average vehicle speed results in an increase of 3% in the incidence of crashes resulting in injury and an increase of 4%–5% in the incidence of fatal crashes.*

*Save Lives: A road safety technical package. Geneva: World Health Organization; 2017.



More than a third of all observed vehicles were speeding (34%).



Of all observed motorcycles, 46% exceeded the posted speed limit.



Of all observed motorcycles, 73% were traveling above 50 km/h.



Observed speeding was higher on expressways (80%) and local roads (63%) compared with arterial roads (29%).



Applying the global recommendation (30 km/h for local and collector roads and 50 km/h for arterial roads), 76% of the observed vehicles were speeding.

Functional classification of roads

Local road: These roads provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas.

Arterial road: These are roadways with high traffic volume; they provide a high degree of mobility and carry a high proportion of travel for long distance trips. These roadways carry the major portion of trips entering and leaving an activity center, as well as the majority of movements that either go directly through or bypass the area.

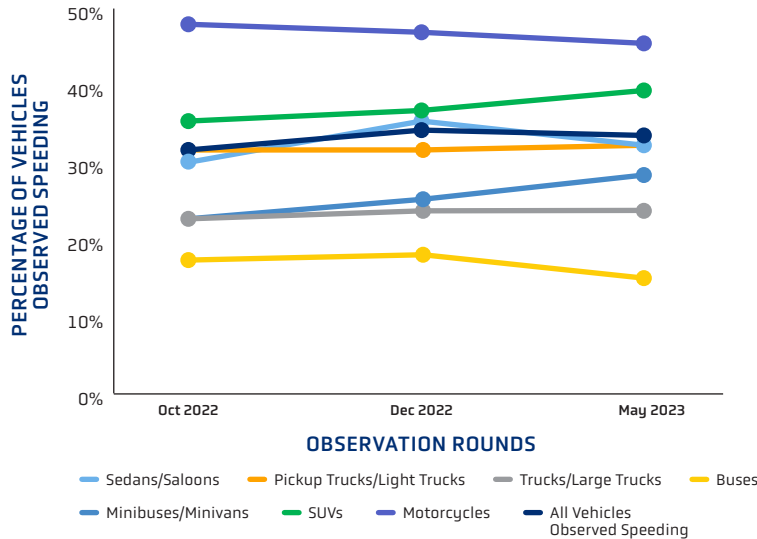
Collector road: These roads collect traffic from local roads and connect to arterial roadways. They penetrate neighborhoods and communities, collecting and distributing traffic between neighborhoods and arterial roads. Collector roads are shorter than arterial but longer than local roads.

These roads provide less mobility than arterials at lower speeds and for shorter distances.

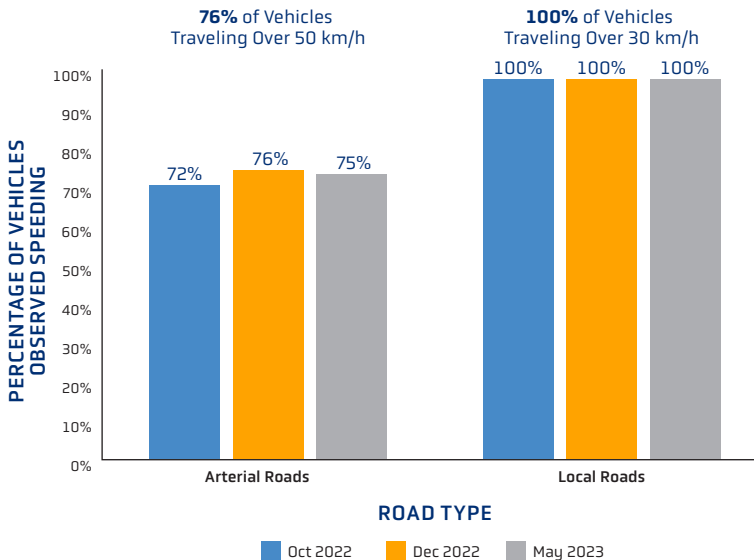
Expressways: These are six- to eight-lane controlled access highways with modern features, such as access ramps, grade separation, lane dividers, and elevated sections.

Key Findings on Speed in Mexico City

Speeding was most common among motorcycles



Speeding above the recommended speed limit was high on arterial and local roads



Recommendations

Transit Agents

- Increase enforcement of speed limits, particularly among:
 - Motorcycles.
 - Local roads and expressways.

Secretary of Mobility

- Implement mass-media campaigns in coordination with enhanced enforcement efforts, emphasizing the dangers of driving at unsafe speeds (exceeding 30 km/h on roadways where motorized traffic mixes with pedestrians and cyclists, and 50 km/h in urban areas).
- Implement a maximum speed limit of 30 km/h on roadways where motorized traffic mixes with pedestrians and cyclists, and 50 km/h in urban areas.
- Strengthen penalties for all vehicles exceeding the posted speed limit.
- Engage the Secretary of Works and Public Services to implement infrastructure changes in order to promote safe speeds, prioritizing areas with the most fatalities and serious injuries.

Helmet Use* in Mexico City

Using a motorcycle helmet correctly** can reduce the risk of fatality by 42% and the risk of serious head injury by 69% in the case of a crash.

*Overall helmet use was defined as strapped or unstrapped use of a helmet of any type.

**Correct helmet use was defined as the use of a standard helmet that was worn correctly and with the chin strap fastened.



Correct helmet use was low among all motorcyclists (74%).



Correct helmet use was lower among passengers (59%) compared with drivers (77%).



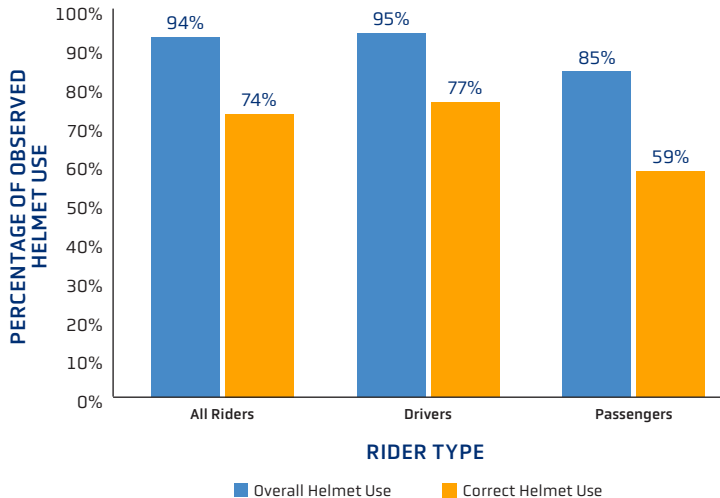
Correct helmet use was lower on local roads (57%) compared with arterial roads (77%) and expressways (75%).



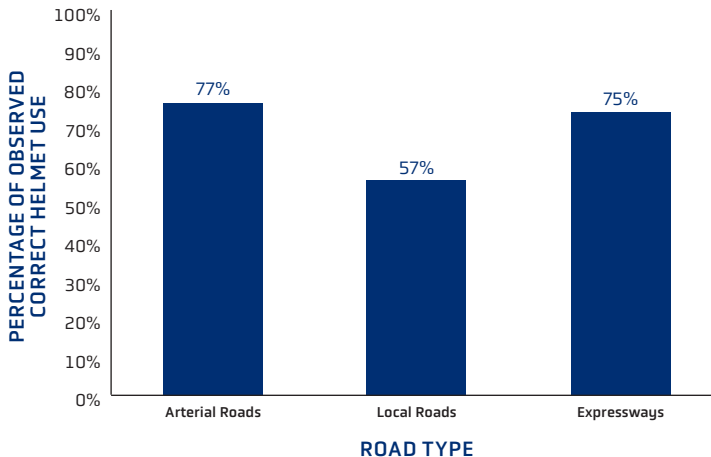
Correct helmet use was lower among females (64%) compared with males (76%).

Key Findings on Helmet Use in Mexico City

Correct helmet use was low, especially among passengers



Correct helmet use was lower on local roads



Recommendations

Transit Agents

- Increase enforcement of correct helmet use, focusing on:
 - Passengers.
 - Local roads.

Secretary of Mobility

- Advocate for enforcement of penalties and fines for driving without wearing a helmet correctly.
- Implement mass-media campaigns in coordination with enhanced enforcement efforts of correct helmet use, focusing on passengers.

Seat-Belt and Child Restraint Use in Mexico City

Seat-belts and child restraints play a significant role in reducing the severity of injuries in the event of a crash; they reduce mortality by 50% in crashes in which motorists, passengers (including rear-seat passengers), and children would otherwise die. Children in front seats have a 40% higher road traffic injury risk than children in rear seats.



Approximately one third of drivers were using seatbelts.



Seat-belt use was very low among adult male passengers (28%) and low among adult female passengers (48%).



Seat-belt use was very low among adult rear-seat passengers (11%) and low among adult front-seat passengers (47%).



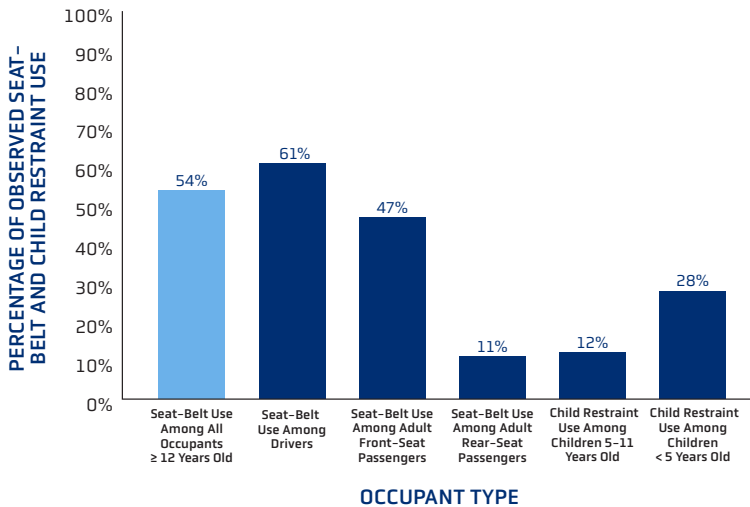
Age-appropriate child restraint use among children 5-11 years old was very low (7%).



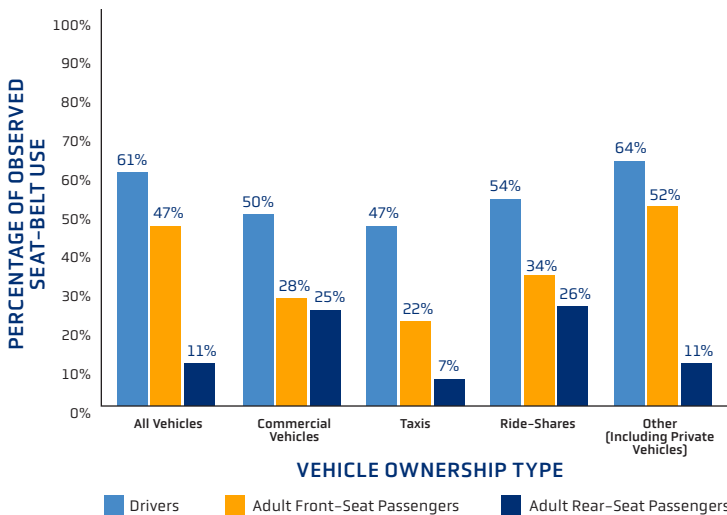
Only half of occupants \geq 12 years old were observed using seat-belts (54%).

Key Findings on Seat-Belt and Child Restraint Use in Mexico City

Seatbelt use among adult rear-seat passengers and child restraint use among children 5-11 years old was very low



Seat-belt use was low among passengers, especially those in taxis



Recommendations

Transit Agents

- Increase enforcement of:
 - Seat-belt use among all vehicle occupants, focusing on passengers and occupants in taxis.
 - Age-appropriate child restraint use.

Secretary of Mobility

- Implement mass-media campaigns in coordination with enforcement efforts, focusing on:
 - Seat-belt use among passengers.
 - Seat-belt use among rear-seat passengers in taxis and private vehicles.
 - Seat-belt and child restraint use, as required by the State Mobility Law.*

*According to Article 71 of the State Mobility Law, children under 12 years old should travel with a child restraint in the center-rear seat.



Two-way road in
Mexico City, Mexico.

METHODS

Since 2022, the Johns Hopkins International Injury Research Unit has partnered with the Instituto Nacional de Salud Pública to conduct roadside observations. The methods for these findings were developed by the Johns Hopkins International Injury Research Unit and implemented in collaboration with the Instituto Nacional de Salud Pública. This report provides results from observational surveys that represent the population-level (citywide) prevalence of important road safety risk factors—speed, helmet use, and seat-belt and child restraint use—at baseline, followed by additional speed observations to show changes over time. In the last round of observations, for speed, there were 121,917 observations (May 2023); for helmet use, there were 27,061 observations (October 2022); and for seat-belt and child restraint use, there were 51,982 observations (October 2022).

Observation sites were randomly selected, conditional on the safety of observers. Fifteen sites were randomly selected to capture the prevalence of risk factors that could be attributed to either implementation of targeted interventions or secular trends. For each risk factor, a standardized protocol for data collection was implemented. All risk factors were observed by selecting vehicles in a systematic quasi-

random fixed sequence for five to six weeks in 15 observation sites of the city. Selection of the observation sites was done proportionally to population size and the number of roads in each district. Observations were performed between 7:00 a.m. and 7:00 p.m. on both weekdays and weekend days. The methods were designed to estimate citywide prevalence and cannot provide insights into interventions conducted in specific locations in the city. The data management team at Johns Hopkins International Injury Research Unit reviewed and cleaned the data to produce the analyses available in this report.

ACKNOWLEDGMENTS

Technical support was provided by officials in Mexico City, Mexico; a consortium of international initiative partners; and local collaborators at the Instituto Nacional de Salud Pública.

CONTACTS: jhsph.iiru@jhu.edu
elisa.hidalgo@insp.mx

CITATION:

Status Summary Report 2023: Road Safety Risk Factors in Mexico City, Mexico, 2022–2023. Baltimore: Johns Hopkins International Injury Research Unit; 2023.

