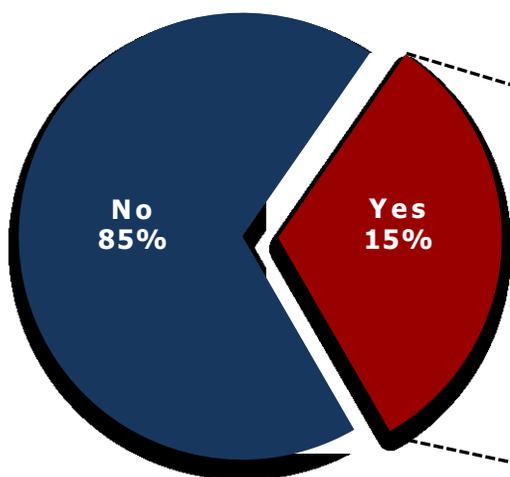


### SAFETY DEVICE USE AND MOTOR VEHICLE CRASHES

The use of seatbelts and other safety devices while driving can reduce the risk of serious injury and death. The Arizona Prehospital Information and EMS Registry System (AZ-PIERS) received 4,878 records involving motor vehicle crashes in 2012. This factsheet discusses these crashes and the importance of safety devices. This factsheet does not reflect the statewide prevalence of Arizona crashes. Please visit [Arizona Crash Facts](#) for a complete description of crashes reported to the Arizona Department of Transportation.

FIGURE 1: Motor Vehicle Crash Injury Indicators

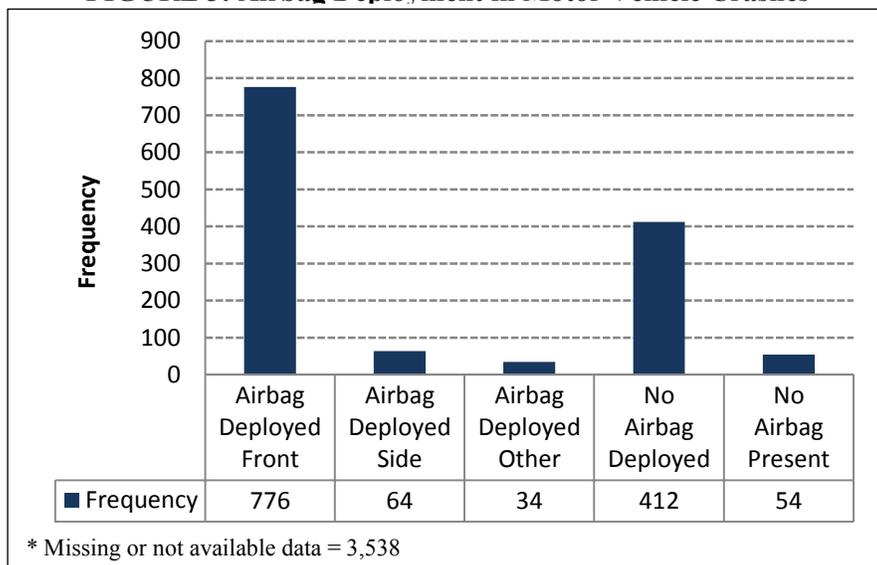


| Crash Categories                     | Frequency | Percent of All Crashes |
|--------------------------------------|-----------|------------------------|
| Total Motor Vehicle Crashes          | 4,878     | --                     |
| Crashes w/ Vehicle Injury Indicators | 746       | 15.29%                 |
| <b>Vehicle Injury Indicators</b>     |           |                        |
| DOA in Same Vehicle                  | *         | *                      |
| Dash Deformity                       | 75        | 1.54%                  |
| Ejection                             | 83        | 1.70%                  |
| Fire                                 | *         | *                      |
| Intrusion                            | 192       | 3.94%                  |
| Rollover/Roof Deformity              | 245       | 5.02%                  |
| Side Post Deformity                  | 279       | 5.72%                  |
| Spiderweb/Starring of Windshield     | 283       | 5.80%                  |
| Steering Wheel Deformity             | 55        | 1.13%                  |
| * 10 or fewer observations           |           |                        |

FIGURE 2: Frequency of Vehicle Injury Indicators

Of the 4,878 motor vehicle crashes reported to AZ-PIERS in 2012, first responders identified 746 (15%) crashes where vehicles had injury indicators. The presence of such indicators implies the occupant(s) may have sustained serious injury (Figure 1). A motor vehicle can have more than one injury indicator (for example, Steering Wheel Deformity and Dashboard Deformity); therefore, the total number of injury indicators identified by first responders exceed the 746 reported crashes (Figure 2).

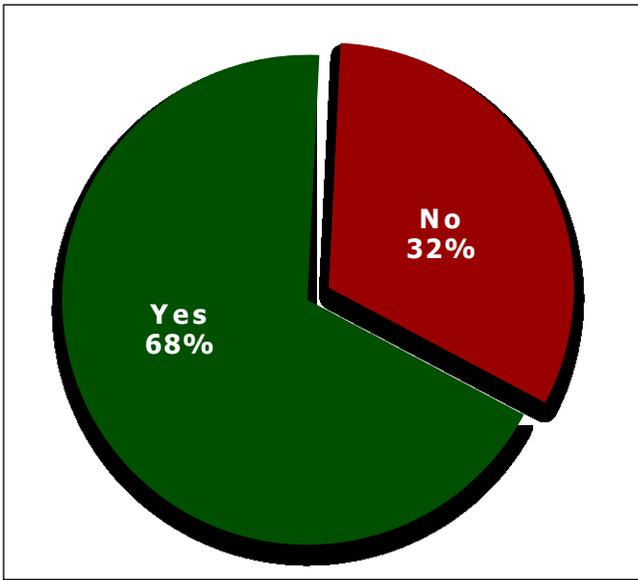
FIGURE 3: Airbag Deployment in Motor Vehicle Crashes



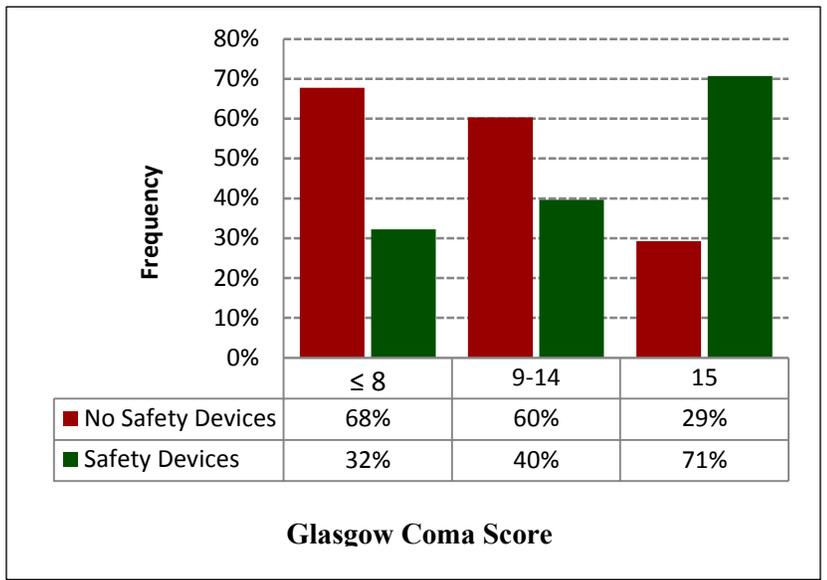
Of the 1,340 records submitted to AZ-PIERS in 2012 where airbag data were recorded, 65% (874) had airbags deployed in motor vehicle crashes (Figure 3). In just under 35% (466) of crash records, there was no airbag deployment or an airbag present.

A large number of crash-related records were missing airbag data; therefore, the results in Figure 3 may not be reflective of the true distribution of airbag deployment.

Of the 277,035 persons involved in motor vehicle crashes in 2012, slightly more than 86% used a safety device at the time of the crash ([Arizona Crash Facts](#)).



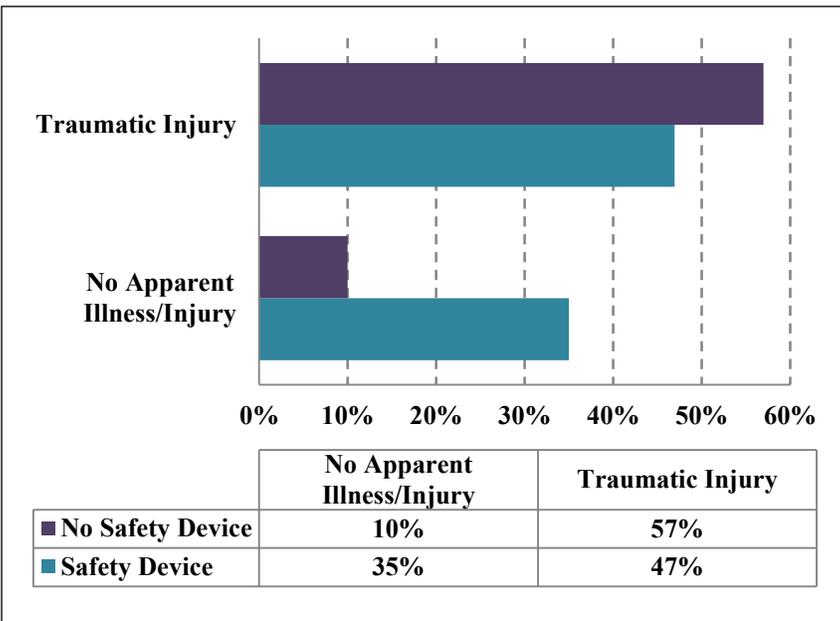
**FIGURE 4: Safety Device Use and GCS ≤ 8**



**FIGURE 5: Safety Device Use**

The [Glasgow Coma Score \(GCS\)](#) is a tool used by first responders and hospital emergency department personnel to assess the level of consciousness of patients with suspected head injury. The GCS is composed of three response criteria (eyes, verbal, and motor) that are scored separately and together, with a total score ranging from a low of 3 (unresponsive) to a high of 15 (alert and awake).

Of those crash-related patients reported to AZ-PIERS in 2012 with a GCS of 8 or less, only 32% were using a safety device at the time of the crash (Figure 4). Those crash-related patients with a GCS of 15, 71% were using a safety device at the time of the crash (Figure 5).



When assessing patients to determine the best course of treatment, EMS personnel record their primary impression of a patient's most significant condition. For patients involved in motor vehicle crashes, the EMS personnel's first impression of Traumatic Injury and No Apparent Illness/Injury was compared with the use of a safety device (Figure 6).

The data shows fewer first impressions of injuries when safety devices are used at the time of the crash. For purposes of Figure 6, safety device excludes airbags.

The term "Traumatic Injury" is used to categorize any injury identified by first responders and not just life-threatening major trauma requiring trauma center level care.

**FIGURE 6: Safety Device Use and EMS First Impression of Injury**

**ADDITIONAL RESOURCES:**

- Governor's Office of Highway Safety: <http://www.azgohs.gov/>
- Arizona Crash Facts: <http://www.azdot.gov/mvd/statistics/crash/index.asp>
- Arizona Department of Health Services: <http://www.azdhs.gov/>
- Bureau of Emergency Medical Services & Trauma System: <http://www.azdhs.gov/bems/index.htm>
- National Highway Traffic Safety Administration: <http://www.nhtsa.gov/>