

MASSACHUSETTS LANE DEPARTURE CRASH and CODES DATA ANALYSES



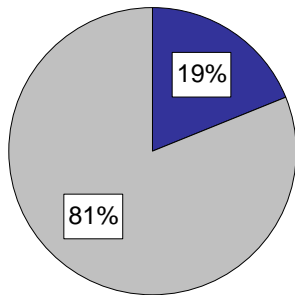
A lane departure crash occurs when a vehicle leaves its travel lane resulting in a collision. For the purpose of this analysis, lane departure crashes were classified into two categories: 1) *single vehicle run off the road crashes* where the vehicle leaves the road and collides with a fixed object or a parked vehicle and 2) *lane departure head on crashes* where the vehicle leaves its travel lane crossing into the opposing travel lane and colliding with another vehicle in traffic.



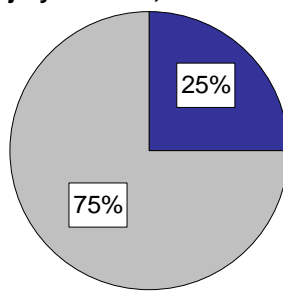
Massachusetts Lane Departure Crash Data Analysis, 2002-2004*

Lane departure crashes account for a larger percent of crashes as injury severity increases. While lane departure crashes account for **less than 1/5** of all crashes, they account for **nearly 1/2** of all fatal crashes in Massachusetts.

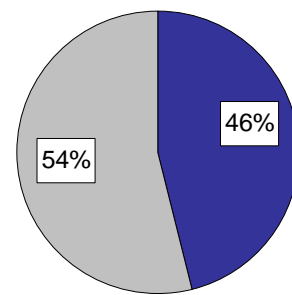
All Massachusetts Crashes, 2002-2004



Massachusetts Incapacitating Injury Crashes, 2002-2004



Massachusetts Fatal Crashes, 2002-2004



■ Lane Departure Crashes ■ Non Lane Departure Crashes

The KABCO scale is a measure of the functional injury level of the victim at the crash scene. The codes are selected based on the on-site judgment of the investigating police officer completing the crash report.

Although the vast majority of lane departures are single vehicle run off the road crashes, lane departure head on are more likely to be more severe and costly. Lane departure head on crashes are **four times** more likely to result in a fatality or an incapacitating injury than single vehicle run off road crashes.

Massachusetts Lane Departure Crashes by Crash Severity and Lane Departure Category

Crash Severity (KABCO scale)	Lane Departure Head On Crashes		Single Vehicle Run Off Road Crashes	
	Frequency	Percent	Frequency	Percent
(K) Fatal	105	3%	507	1%
(A) Incapacitating Injury	484	13%	2,556	3%
(B) Non Incapacitating Injury	918	25%	9,503	13%
(C) Possible Injury	664	18%	6,924	9%
(O) Property Damage Only	1,470	40%	55,410	74%
Total	3,641	100%	74,900	100%

* Analysis partially funded by MassHighway

Massachusetts Lane Departure CODES Data Analysis, FY2003

Data Linkage
CODES
The Crash Outcome Data Evaluation System

Comprehensive, Complete Data are the Key...

To understanding why the injury outcome and financial consequences of motor vehicle crashes remain a major public health problem.

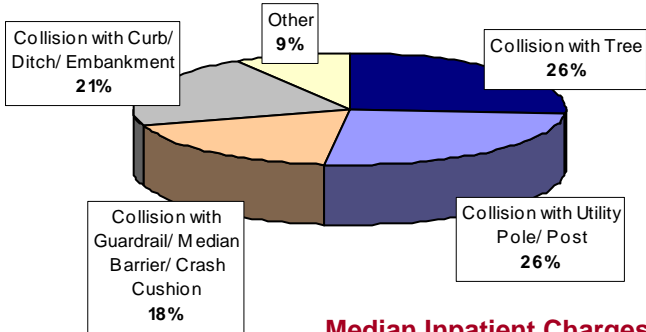
The **Crash Outcome Data Evaluation System (CODES)** links data collected at the crash scene to hospital databases that contain specific injury data; this provides an enhanced understanding of crash injury outcomes by tracking crash victims through the health care system. Massachusetts CODES data were analyzed to examine injury outcomes of lane departure crashes considering inpatient charges and length of stay.

Median inpatient charges were higher for lane departure crashes than for all crash types (\$18,460 vs. \$16,302). In addition, lane departure head on crashes had higher median inpatient charges than single vehicle run off road crashes (\$20,413 vs. \$17,918). Median length of stay associated with injuries from lane departure head on crashes were one day longer than length of stay associated with single vehicle run off road crashes.

Median Inpatient Charges and Median Length of Stay Associated with Lane Departure Crashes

Type of Crash	Median Inpatient Charges	Median Length of Stay (days)
All Crashes	\$16,302	3.0
Lane Departure Crashes	\$18,460	3.0
Single Vehicle Run Off Road Crashes	\$17,918	3.0
Lane Departure Head On Crashes	\$20,413	4.0

Incapacitating Injury Single Vehicle Lane Departure Crashes by Object Collided With



Trees and utility poles are the most common objects collided with for incapacitating injury single vehicle run off road crashes, accounting for **52%** of these crashes.

Median Inpatient Charges and Median Length of Stay Associated with Single Vehicle Lane Departure Crashes by Object Collided With

Inpatient cases resulting from collisions with **trees and running off the road left or crossing median** were the two types that had the highest median charges and also the highest median length of stay.

Object Collided With	Median Inpatient Charges	Median Length of Stay (days)
Tree	\$22,197	4.0
Ran off road left or cross median	\$21,281	3.0
Parked vehicle	\$18,480	4.0
Curb, ditch, or embankment	\$16,361	3.0
Guardrail, median barrier or crash cushion	\$16,289	3.0
Post, utility pole or light pole	\$15,709	3.0
Ran off road right	\$14,838	3.0
Other/unknown	\$17,827	3.5