



# National older driver crash trends

Older Driver Safety Summit  
Boston, MA  
June 16, 2015

Jessica B. Cicchino

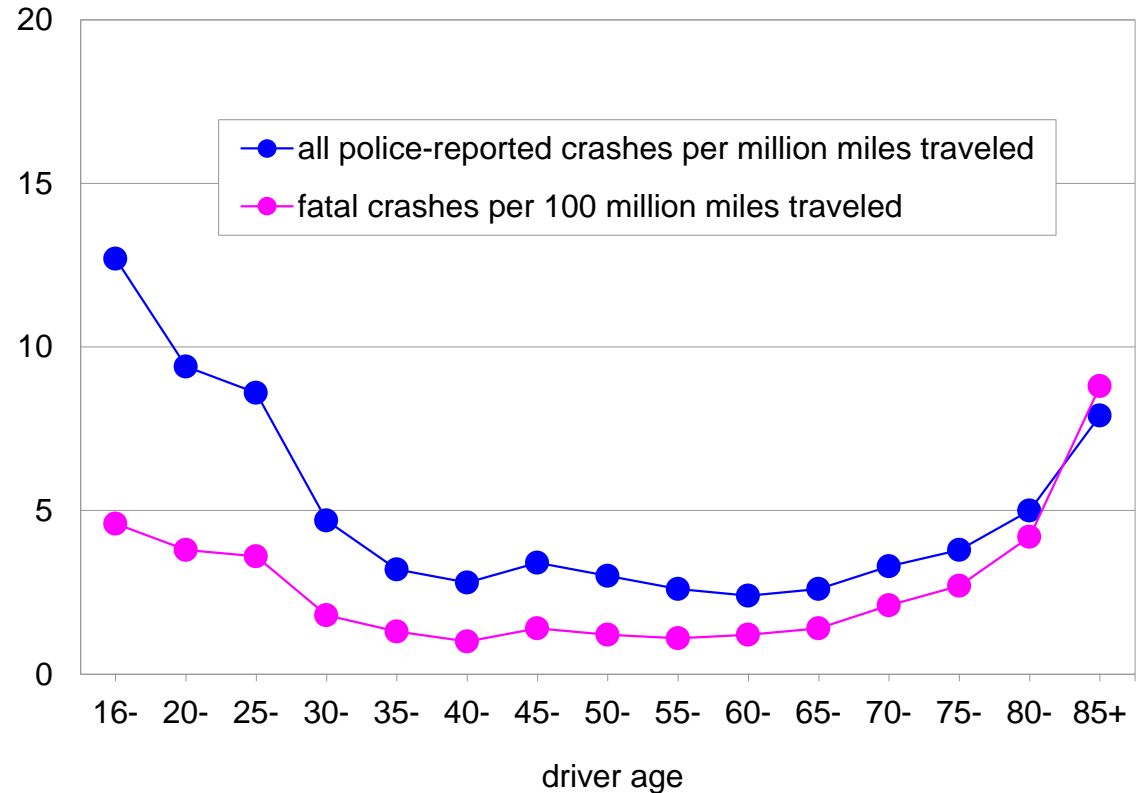
[iihs.org](http://iihs.org)



# Passenger vehicle driver crash rates

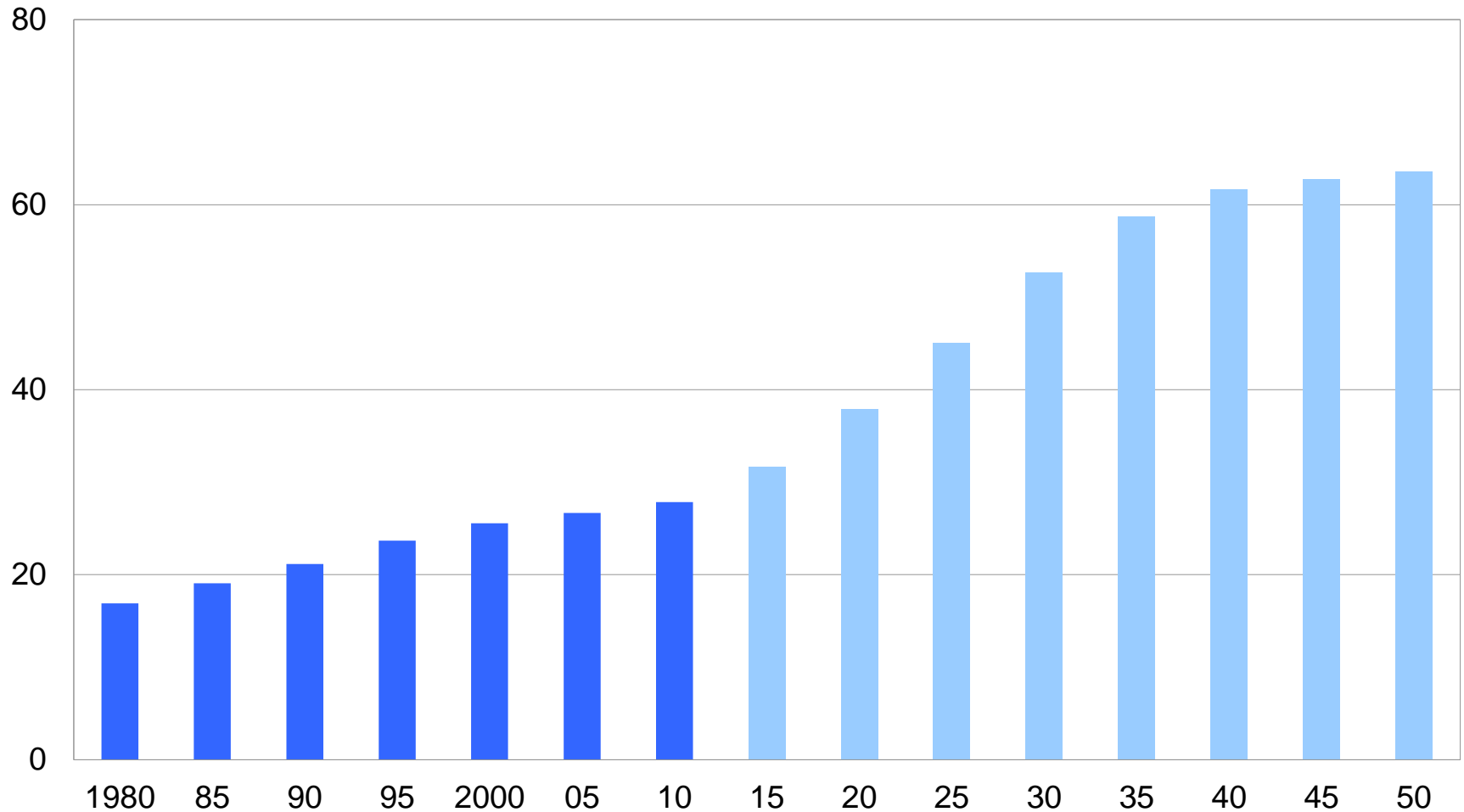
Per mile traveled, by driver age, 2008

Per mile traveled  
crash rates and fatal  
crash rates start  
increasing at about  
age 70.



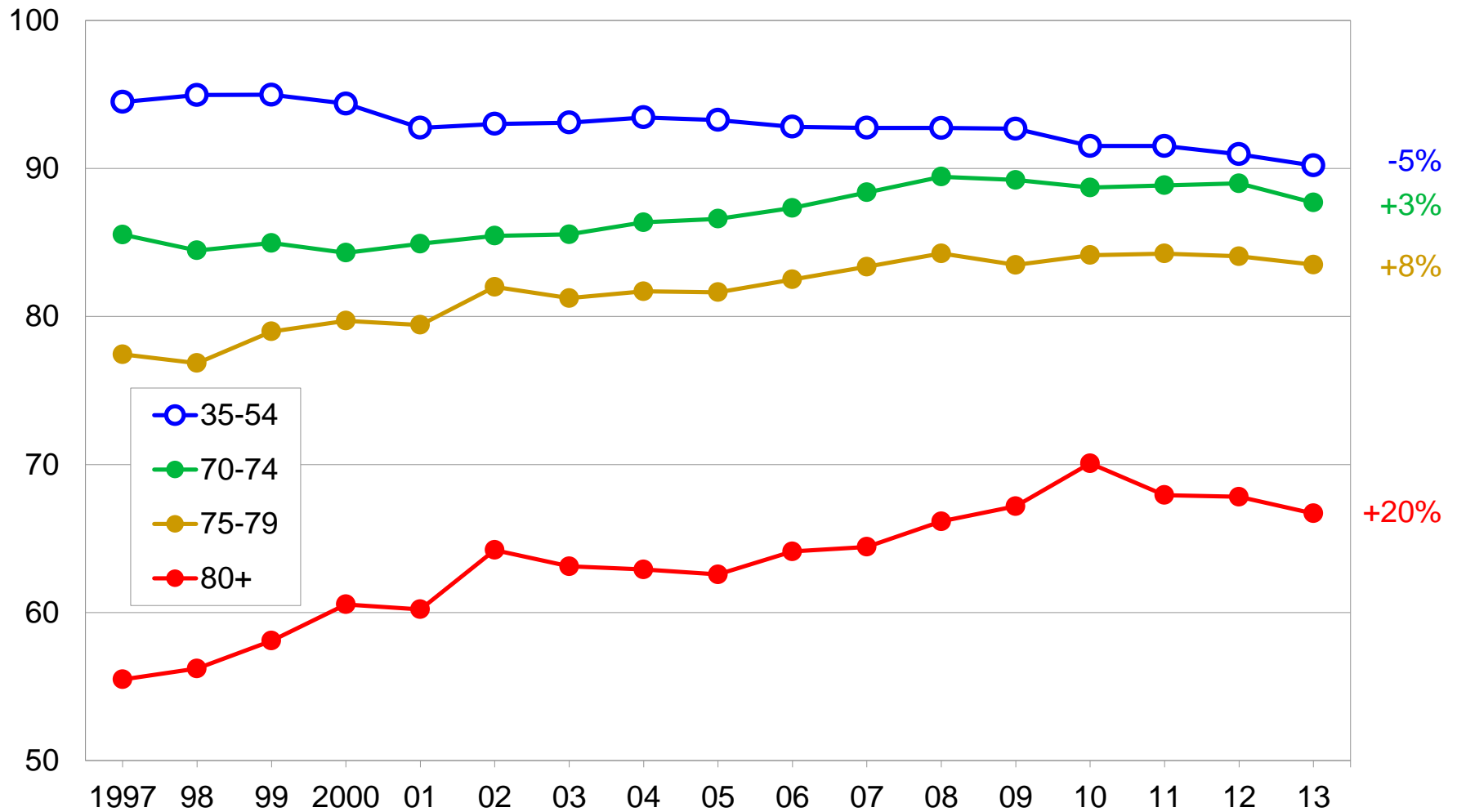
# Projected population of people 70 and older

In millions, 1980-2050



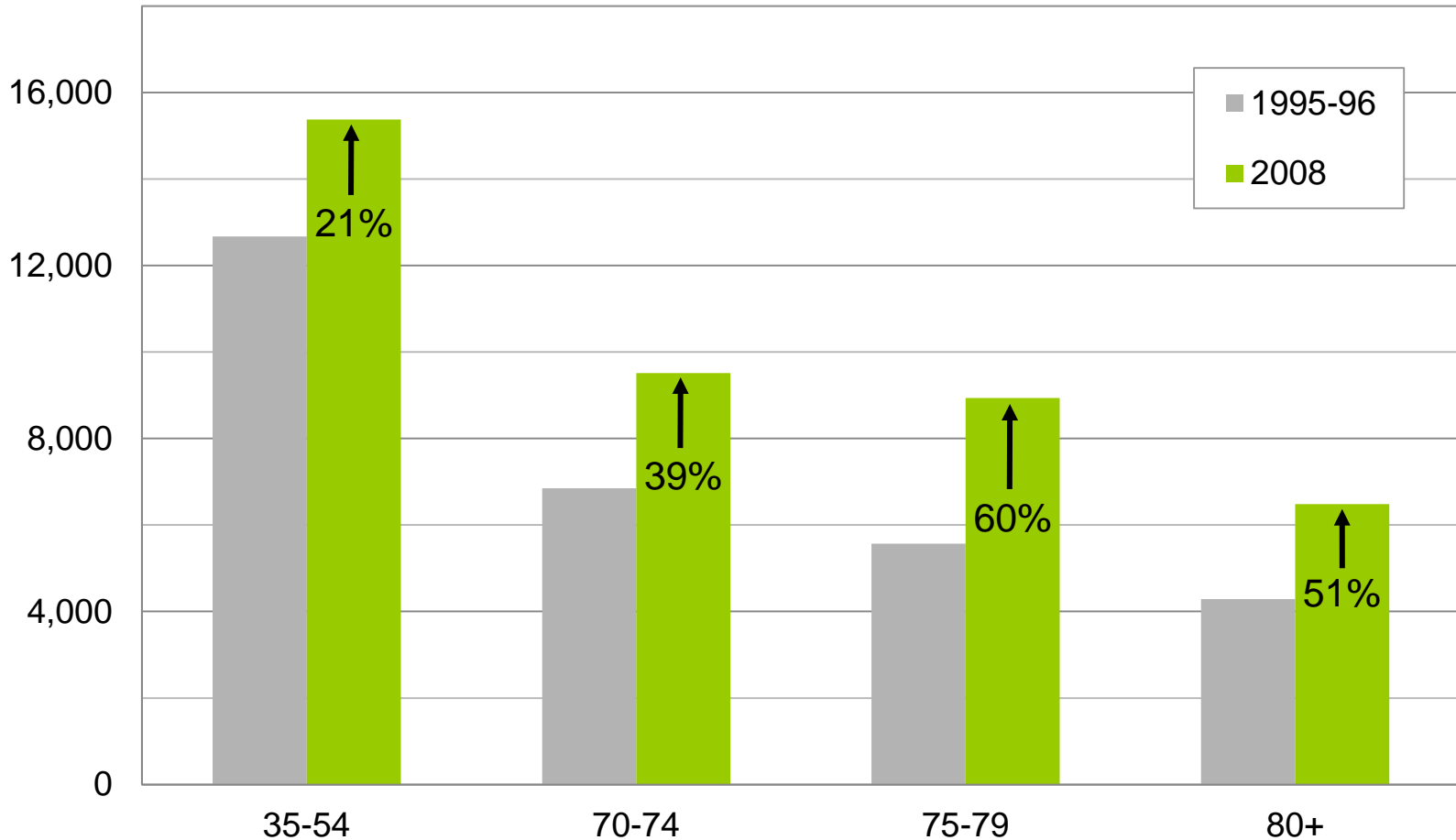
# Percent of population with licenses

By age, 1997-2013



# Average passenger vehicle miles driven per year

By driver age, 1995-96 and 2008



WTOP, December 7, 2011

## **'Silver tsunami' of drivers is coming**

Insurance Journal, January 31, 2011

## **New Mexico Considers Stricter Regs for Older Drivers**

USA Today, July 27, 2012

## **Make elderly driver limits tougher**

Associated Press, August 30, 2012

## **Police: 100-year-old driver hits 11 near LA school**

Tonawanda News (NY), July 12, 2012

## **Debate over senior drivers intensifies in wake of tragic crash**

NPR, February 27, 2012

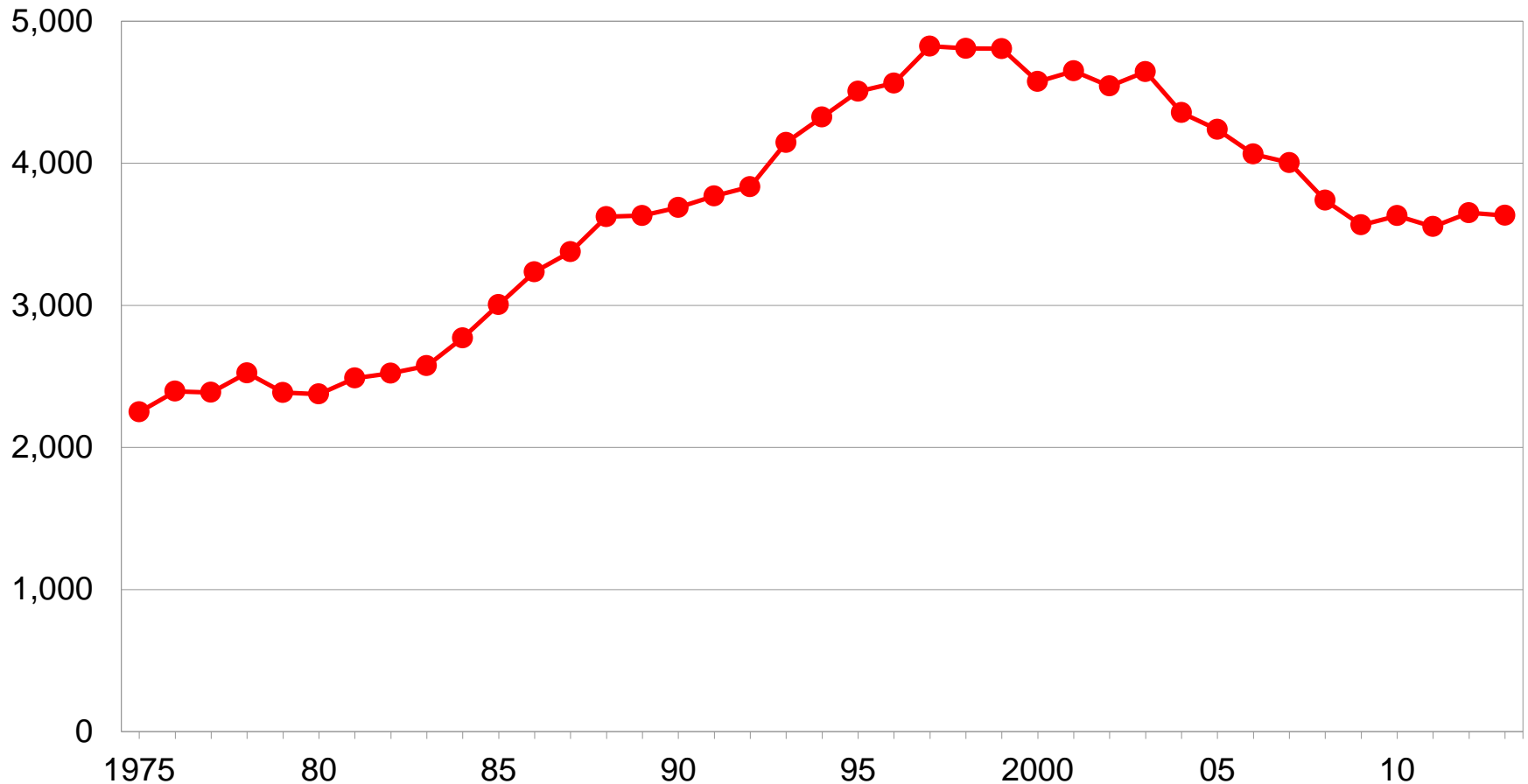
## **Elderly Drivers Take Toll On American Roads**

Sun-Sentinel (FL), March 20, 2012

## **Fatal crashes involving senior drivers renew debate over licensing, testing requirements**

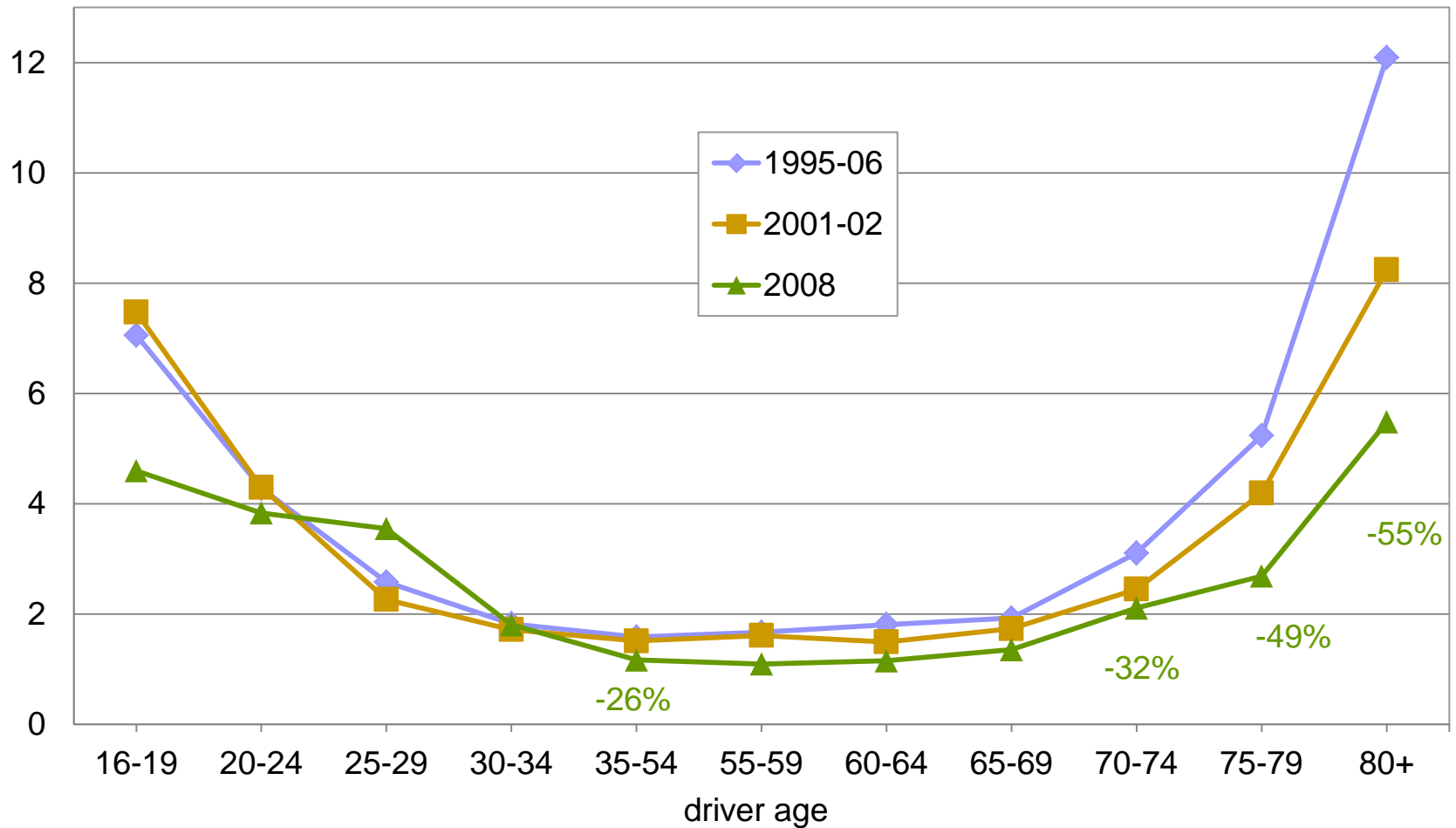
# Fatal passenger vehicle crash involvements of drivers age 70 and older

1975-2013



# Fatal crashes per 100 million miles traveled

By driver age, 1995-96, 2001-02, 2008

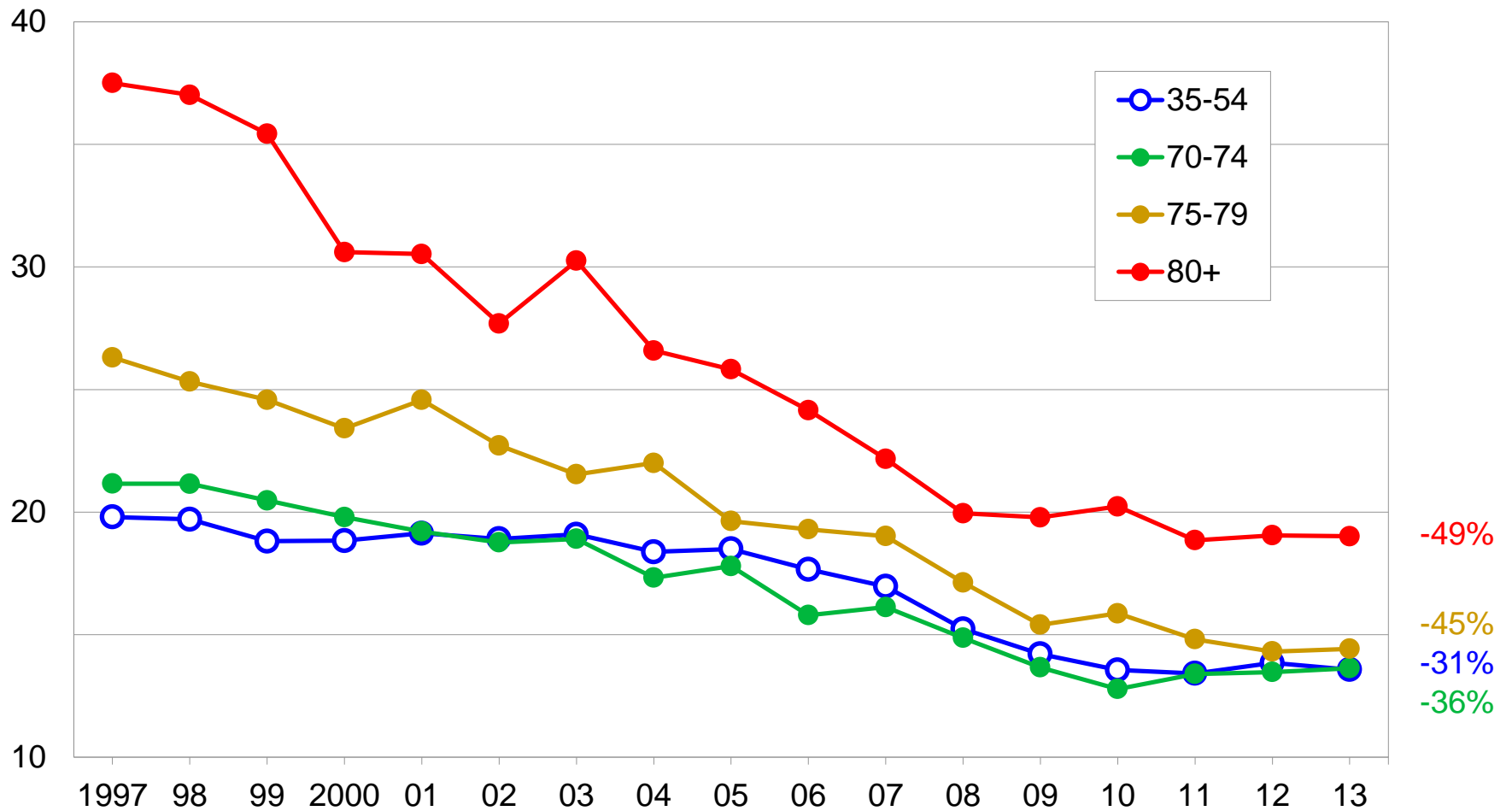






# Fatal crashes per 100,000 licensed drivers

By driver age, 1997-2013





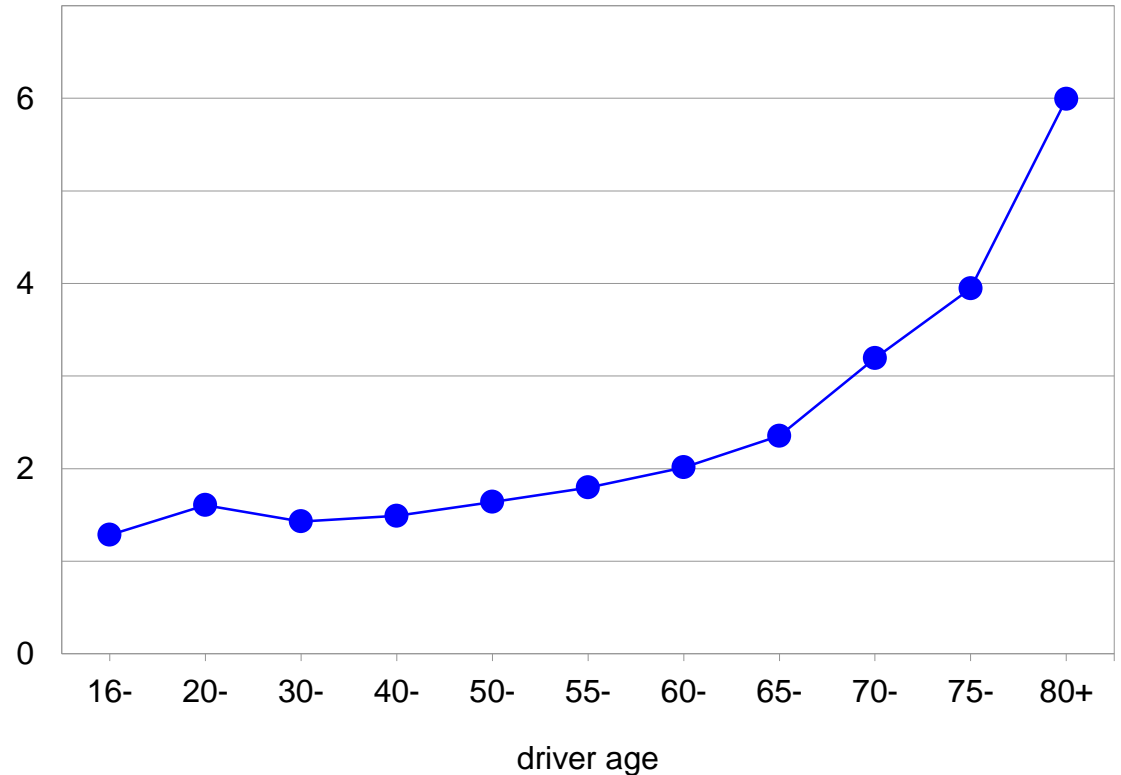
**What has changed more for older drivers: risk of crashing or survivability in a crash?**



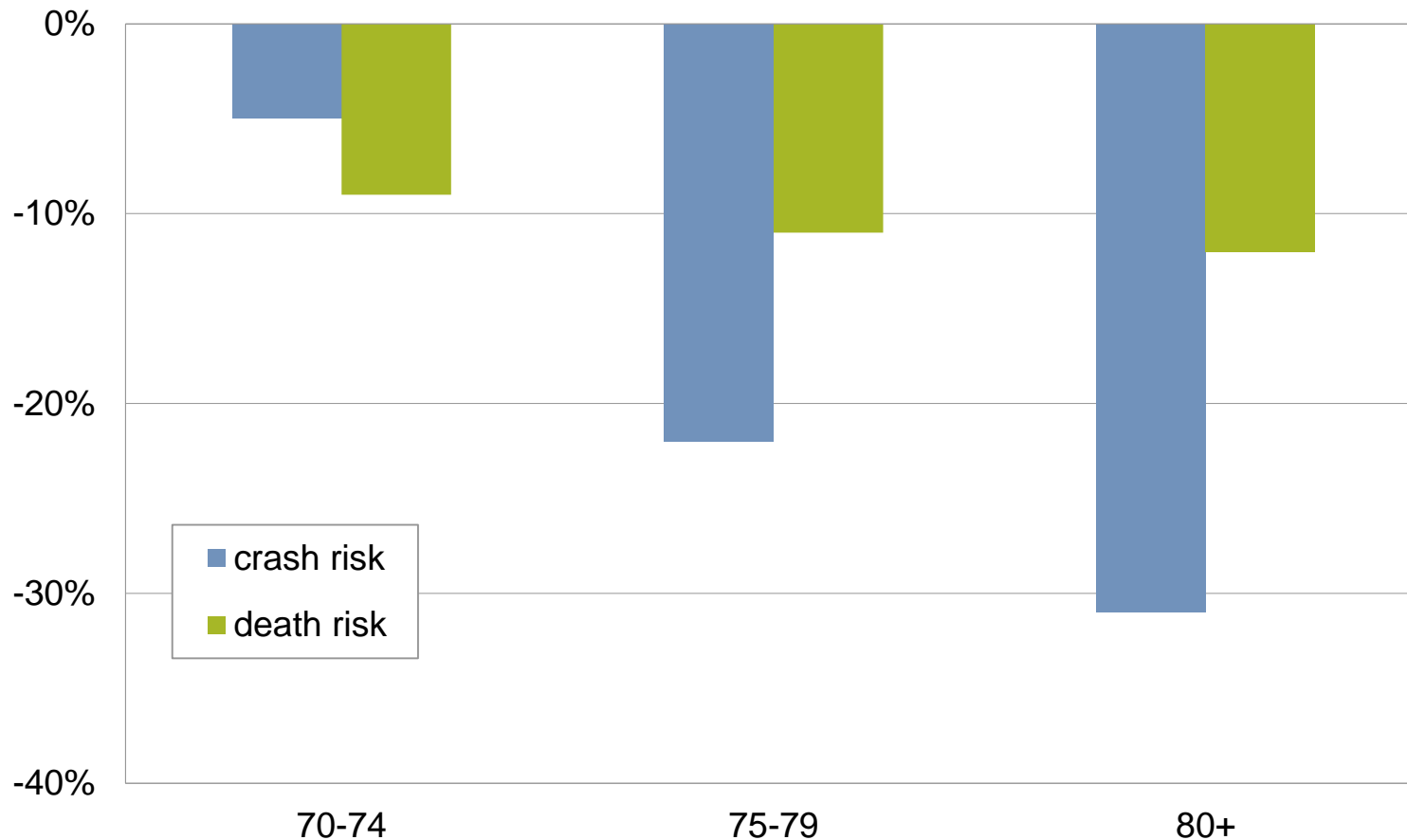
# Passenger vehicle driver deaths per 1,000 crashes

By age, 2009-13

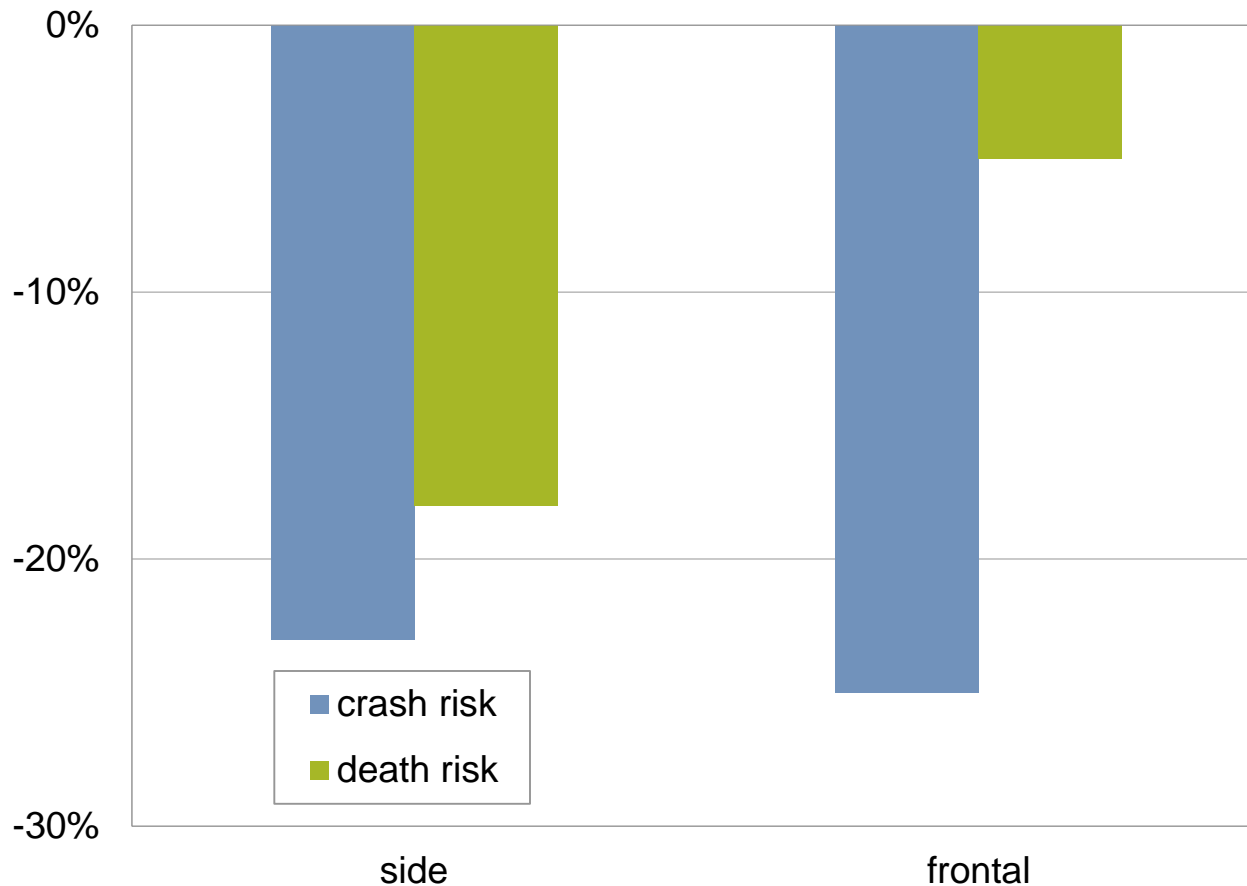
The high death rates for older drivers are predominantly because they are more likely than younger drivers to die from their injuries.



# Change in older drivers' crash risk and death risk from 1995-98 to 2005-08, relative to middle-age drivers

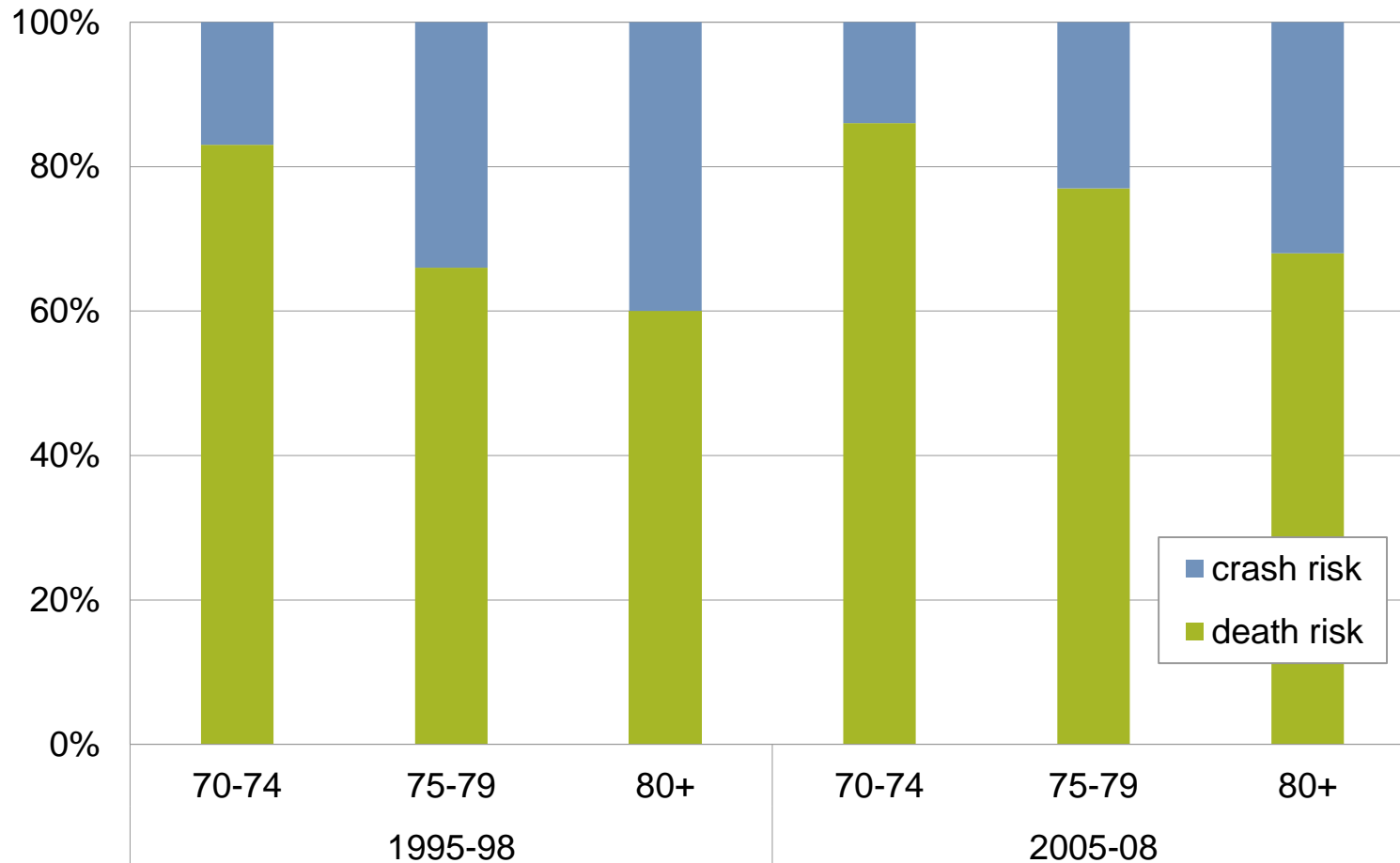


# Change in crash risk and death risk of drivers age 75 and older, relative to middle-age drivers, in side and frontal crashes



# Contribution of crash risk and death risk to older drivers' excess fatality rates relative to middle-aged drivers

By study period



# Summary

- ▶ Fatal crash involvements per mile traveled and per licensed driver have declined more among older than middle-age drivers
- ▶ Declines for drivers 75+ due mainly to decreases in crash risk
  - Better health
  - Increased mileage
  - Improvements in roadway design
- ▶ Declines in death risk relative to middle-age drivers greater in side impacts
  - Side airbags: evidence they have been more effective for older than other occupants
  - Reduced passenger vehicle incompatibility: older drivers more often drive passenger cars than SUVs or pickups compared with middle-age drivers



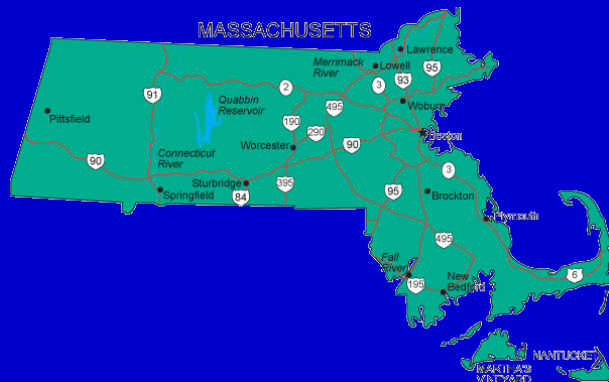
Insurance Institute for Highway Safety  
Highway Loss Data Institute

**More information and links  
to our YouTube channel  
and Twitter feed at [iihs.org](http://iihs.org)**

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[iihs.org](http://iihs.org)





# Motor Vehicle Crash Injuries, Massachusetts Drivers Ages 65 and Over

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Presentation for Older Driver Safety Summit, Boston, MA

June 16<sup>th</sup>, 2015

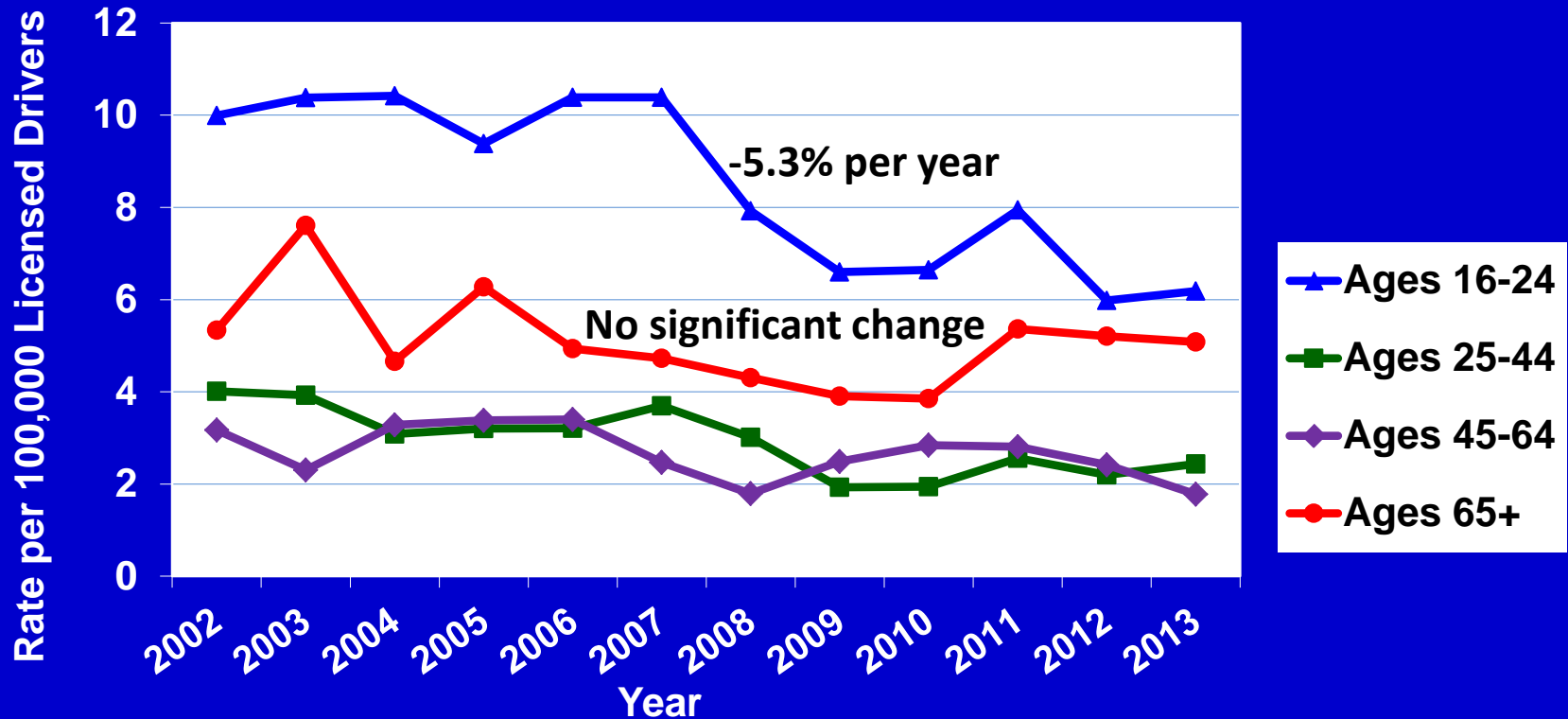
Jeanne Hathaway, MD MPH, Beth Hume, MPH and Holly Hackman, MD MPH  
Injury Surveillance Program, MA Department of Public Health

# Overview

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- **Trends, Comparing Age Groups**
  - **Fatalities**
  - **Hospital Stays**
  - **Emergency Department Visits**
- **MA Residents Ages 65+**
  - **Annual MV-Driver Injuries**
  - **Indicators of Injury Severity**
  - **Costs**
  - **Geography**
  - **5-Year Age Groups**

# Fatal MV-Driver Injuries<sup>1</sup>, Rate per 100,000 Licensed Drivers, MA Residents, 2002-2013



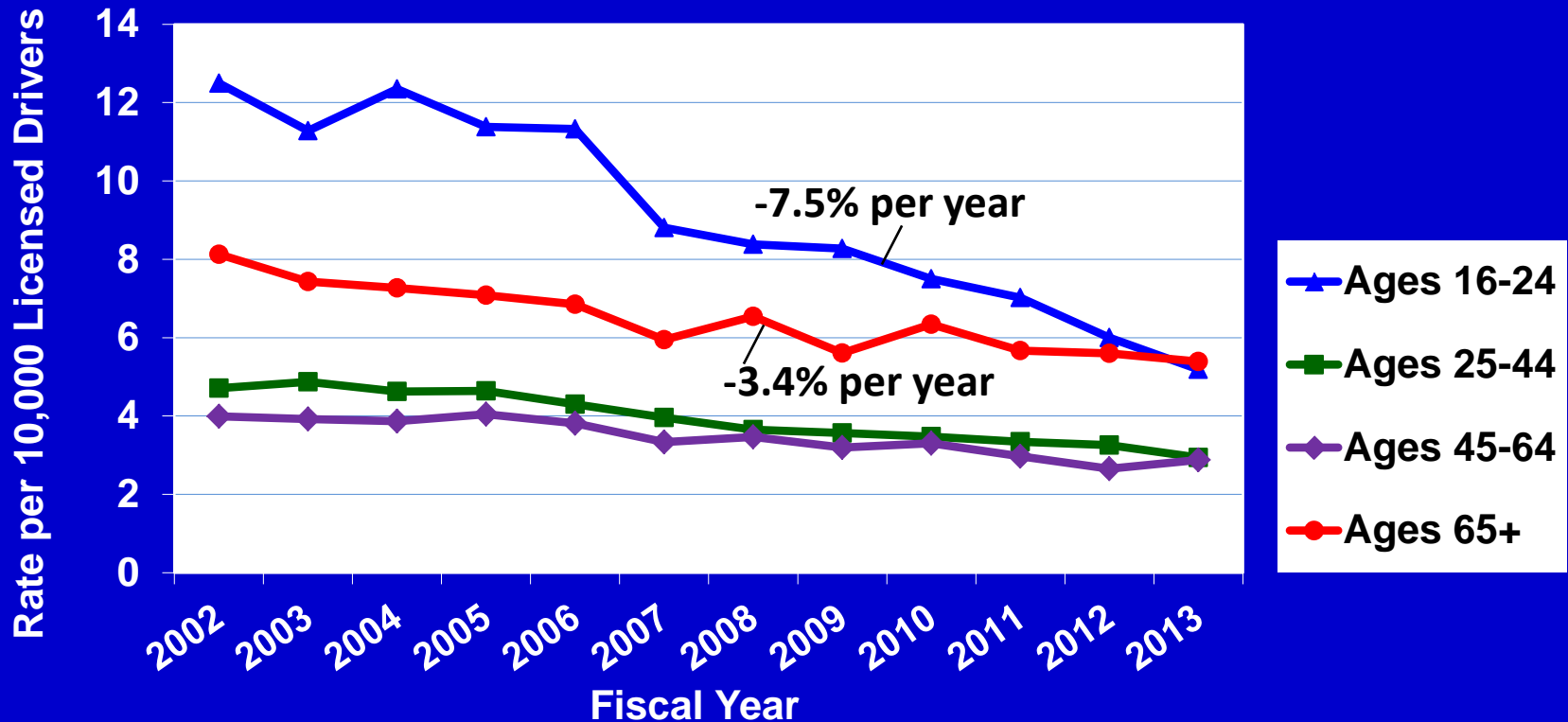
1. Car/truck crash fatalities of Massachusetts drivers occurring in Massachusetts; motorcyclists excluded.

Data Sources:

Deaths – Fatality Analysis Reporting System Query Tool, accessed 5/30/15

Licenses - MA Shelley License Reports, 2002-2013, MA Registry of Motor Vehicles

# Hospital Stays for MV-Driver Injuries<sup>1</sup>, Rate per 10,000 Licensed Drivers, MA Residents, FY2002-2013



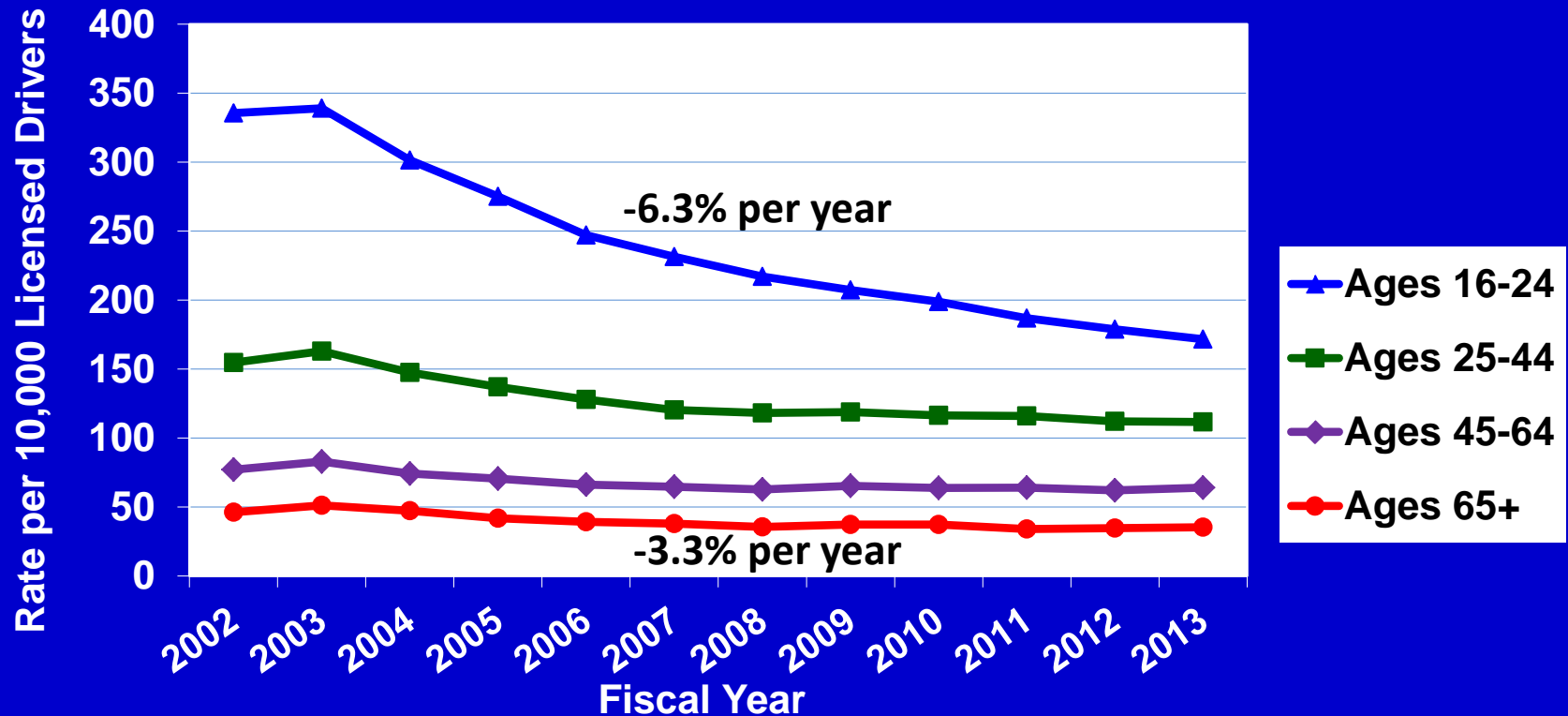
1. Hospital stays include hospital discharges and observation stays. Nonfatal injuries only; deaths and transfers were excluded. Does not include motorcycle operator injuries.

*Data Sources:*

*Hospital Stays* - MA Inpatient Hospital Discharge and Outpatient Observation Stay databases, MA Center for Health Information and Analysis. Data are compiled and presented by fiscal year.

*Licenses* - MA Shelley License Reports, 2002-2013, MA Registry of Motor Vehicles

# ED Visits for MV-Driver Injuries<sup>1</sup>, Rate per 10,000 Licensed Drivers, MA Residents, FY2002-2013



1. Nonfatal injuries only; deaths were excluded. Does not include motorcycle operator injuries.

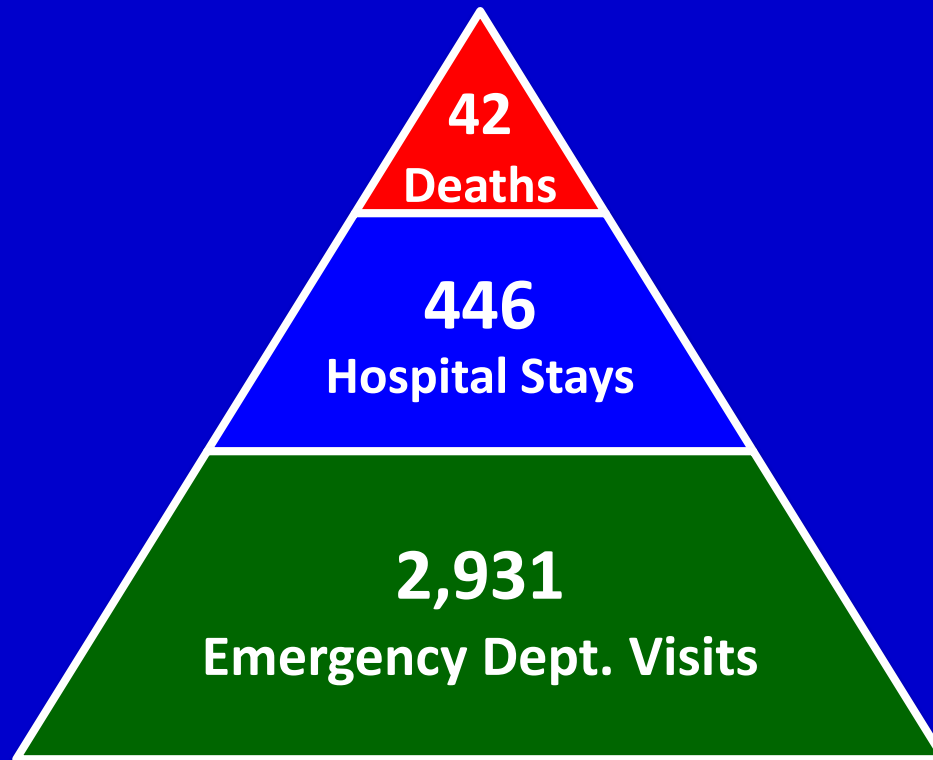
Data Sources:

Emergency Department Visits - MA Emergency Department Discharge database, MA Center for Health Information and Analysis.  
Data are compiled and presented by fiscal year.

Licenses - MA Shelley License Reports, 2002-2013, MA Registry of Motor Vehicles

# Annual Burden of MV-Driver Injuries MA Residents Ages 65+, 2013

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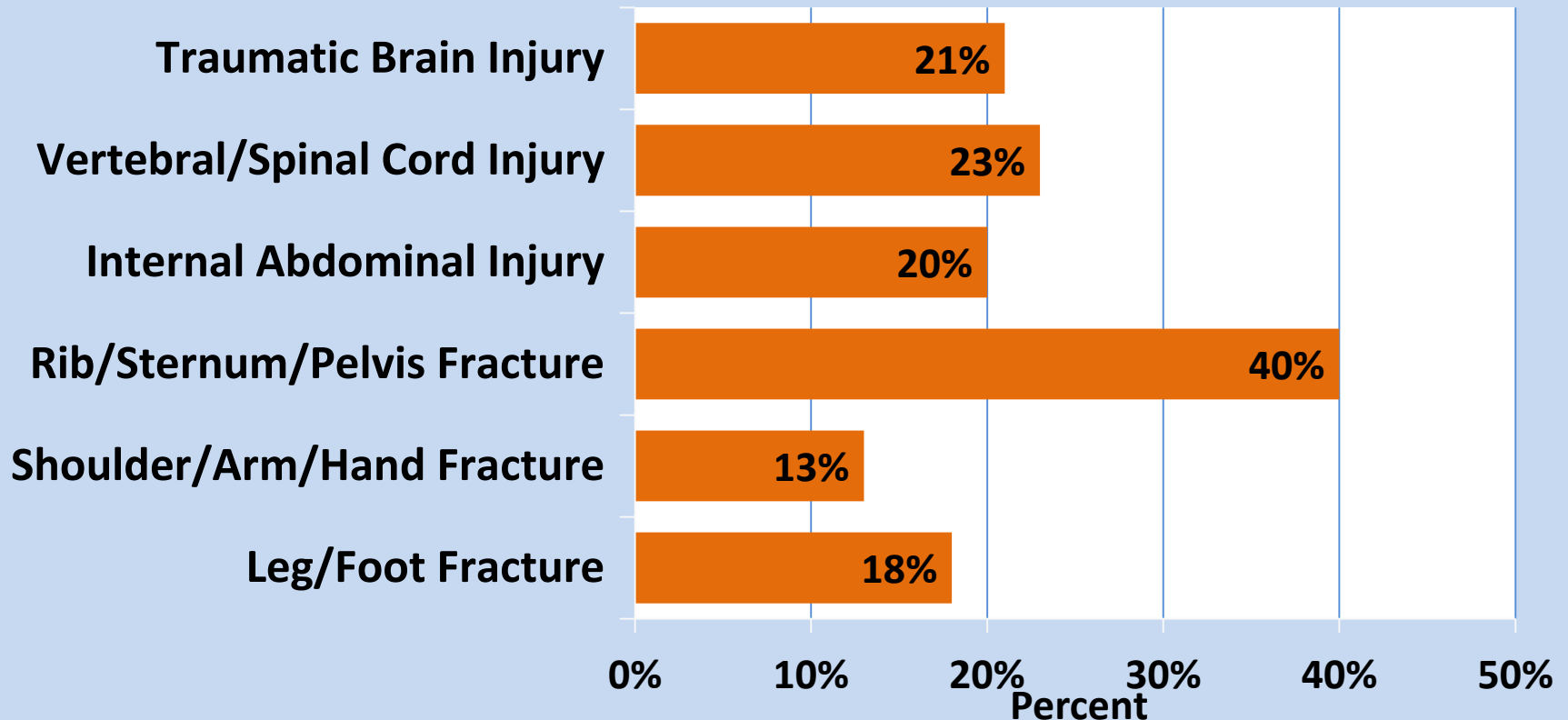
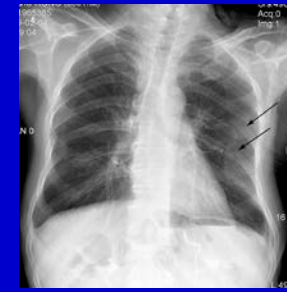


**Data Sources:**

*Deaths* – Fatality Analysis Reporting System Query Tool, accessed 5/30/15. Data are reported by calendar year.

*Nonfatal Injuries*- MA Inpatient Hospital Discharge, Outpatient Observation Stay and Emergency Department Discharge databases, MA Center for Health Information and Analysis. Data are compiled and presented by fiscal year.

# Fatal and Nonfatal Hospital Stays<sup>1</sup>, Types of Major MV-Driver Injuries, MA Residents Ages 65+, FY2009-2013 (N = 2,286)

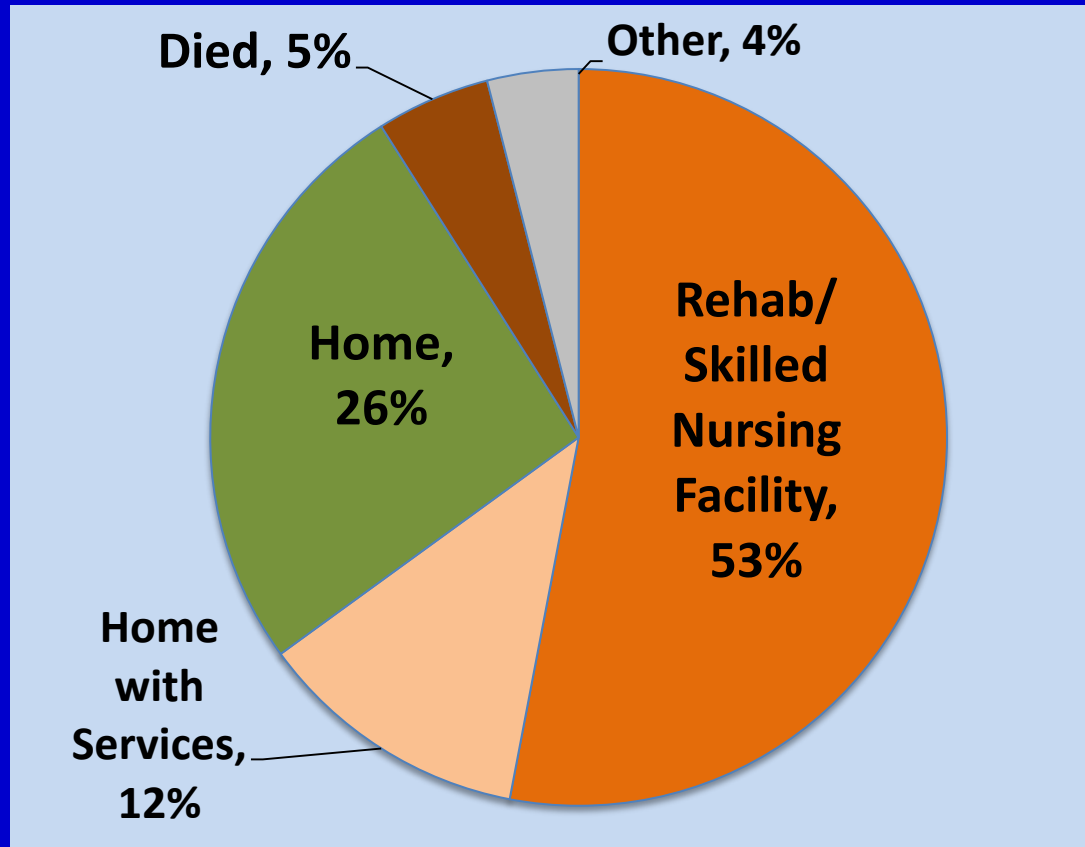


1. Includes fatal and nonfatal hospital discharges and observation stays; transfers between hospitals were excluded. Does not include motorcycle operator injuries.

*Data Sources:*

*Hospital Stays* - MA Inpatient Hospital Discharge and Outpatient Observation Stay databases, MA Center for Health Information and Analysis. Data are compiled and presented by fiscal year.

# Hospitalizations for MV-Driver Injuries<sup>1</sup>, Discharge Disposition, MA Residents Ages 65+, FY2013 (N = 408)



1. Hospital discharges only; all discharge dispositions included. "Other" category includes transfers and left AMA. Motorcycle operator injuries are excluded.

*Data Source:*

MA Inpatient Hospital Discharge database, MA Center for Health Information and Analysis. Data are compiled and presented by fiscal year.



# Hospital Charges<sup>1</sup> Associated with Injuries to MA Drivers Ages 65+, FY2013



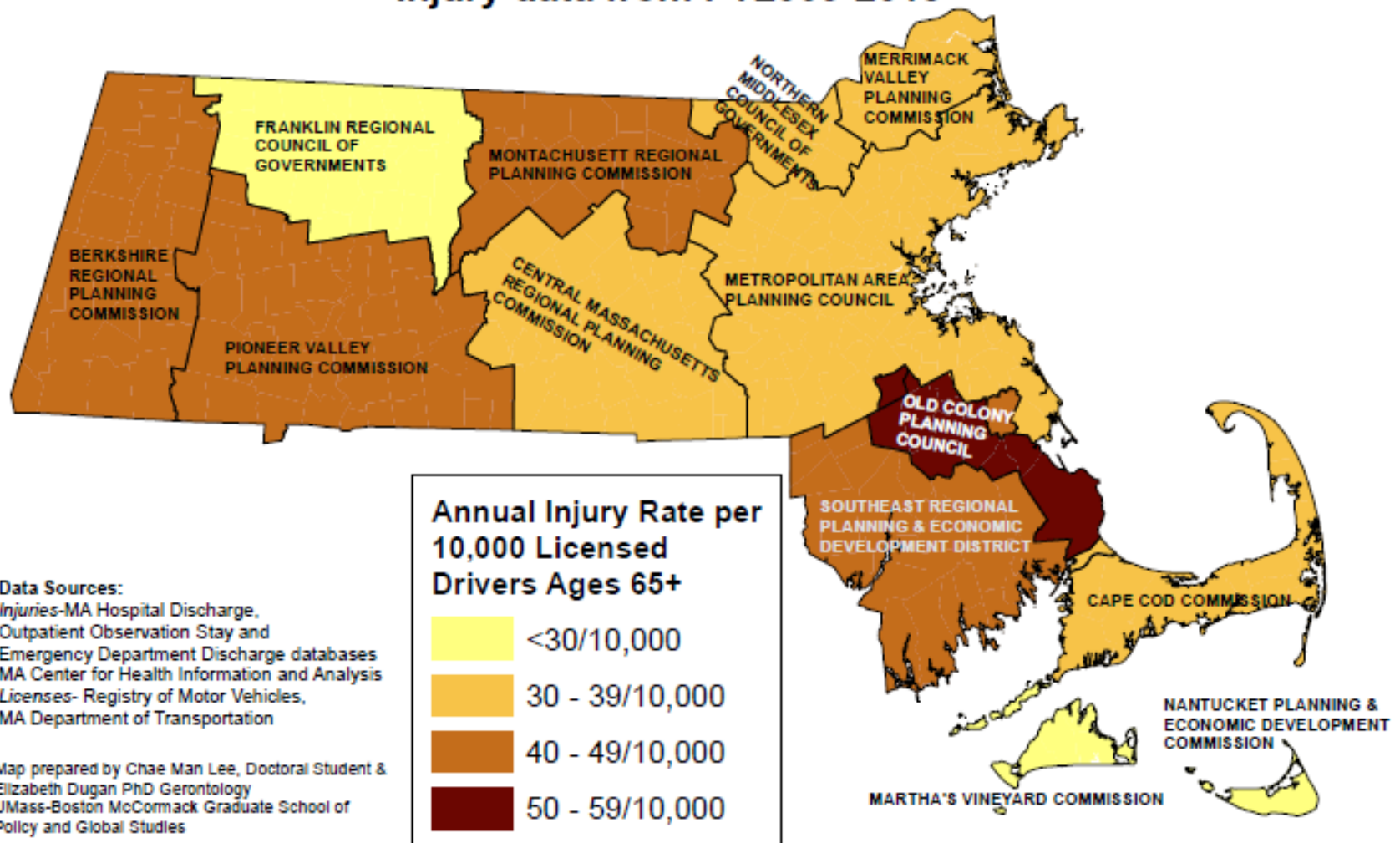
Type Visit	Number of Visits	Median Charge	Total Hospital Charges
ED Visit	2,944	\$1,731	\$7,814,794
Observation Stay	71	\$10,851	\$888,746
Hospitalization	408	\$23,530	\$19,794,866
<b>Total</b>	<b>3,423</b>	<b>-----</b>	<b>\$28,498,406</b>

1. Charges are from MA acute care hospitals only. All discharge dispositions are included. Hospital charges represent charges billed by the hospital rather than actual costs or amount paid.

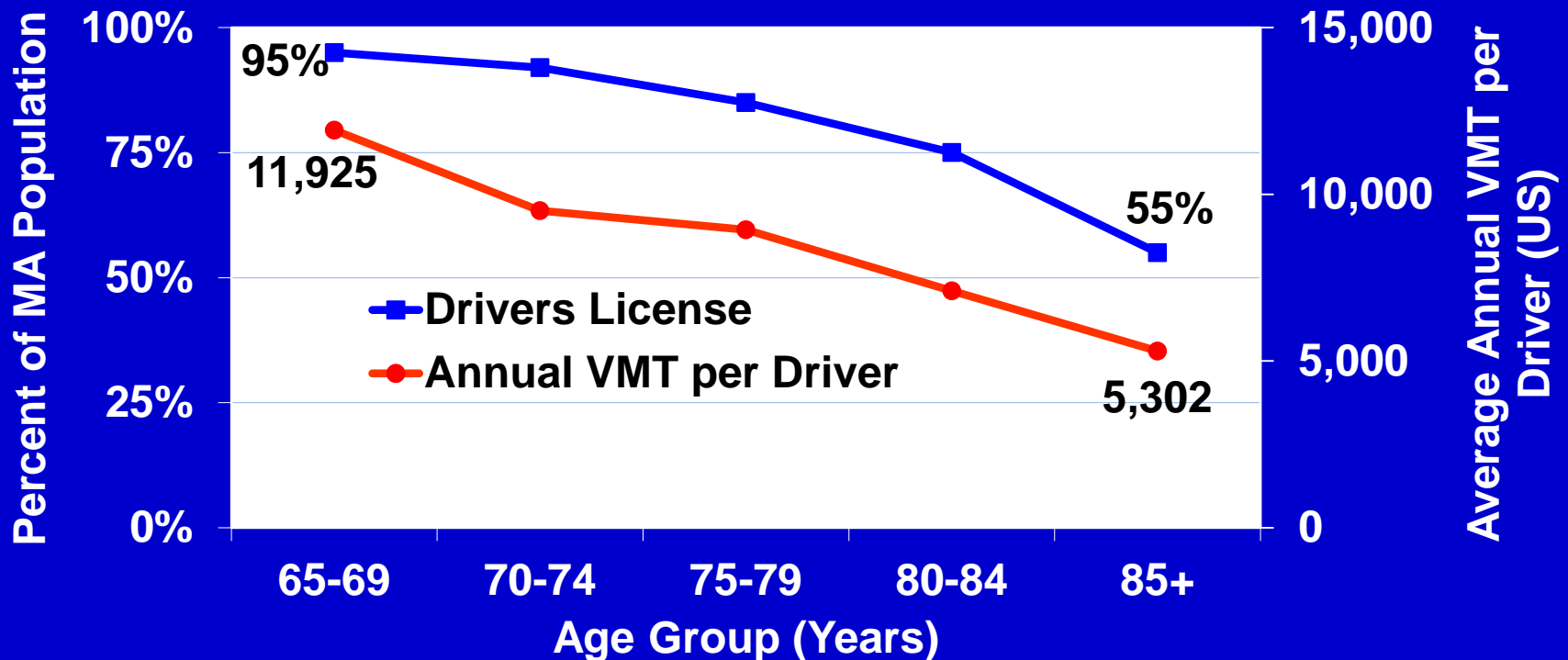
*Data Sources:*

MA Inpatient Hospital Discharge, Outpatient Observation Stay and Emergency Department Discharge databases, MA Center for Health Information and Analysis. Data are compiled and reported by fiscal year.

# Annual Rate of Nonfatal MV-Driver Injuries Per 10,000 Active MA Licenses, MA Drivers Ages 65 and Older, By Metropolitan Planning Organization Injury data from FY2009-2013



# License Rates<sup>1</sup> (MA) and Vehicle Miles Travelled<sup>2</sup> (US), Drivers Ages 65+



1. Licenses include active licenses of any class (MA 2013).

2. Average annual vehicle miles travelled (VMT) per driver in age group (2009 NHTS).

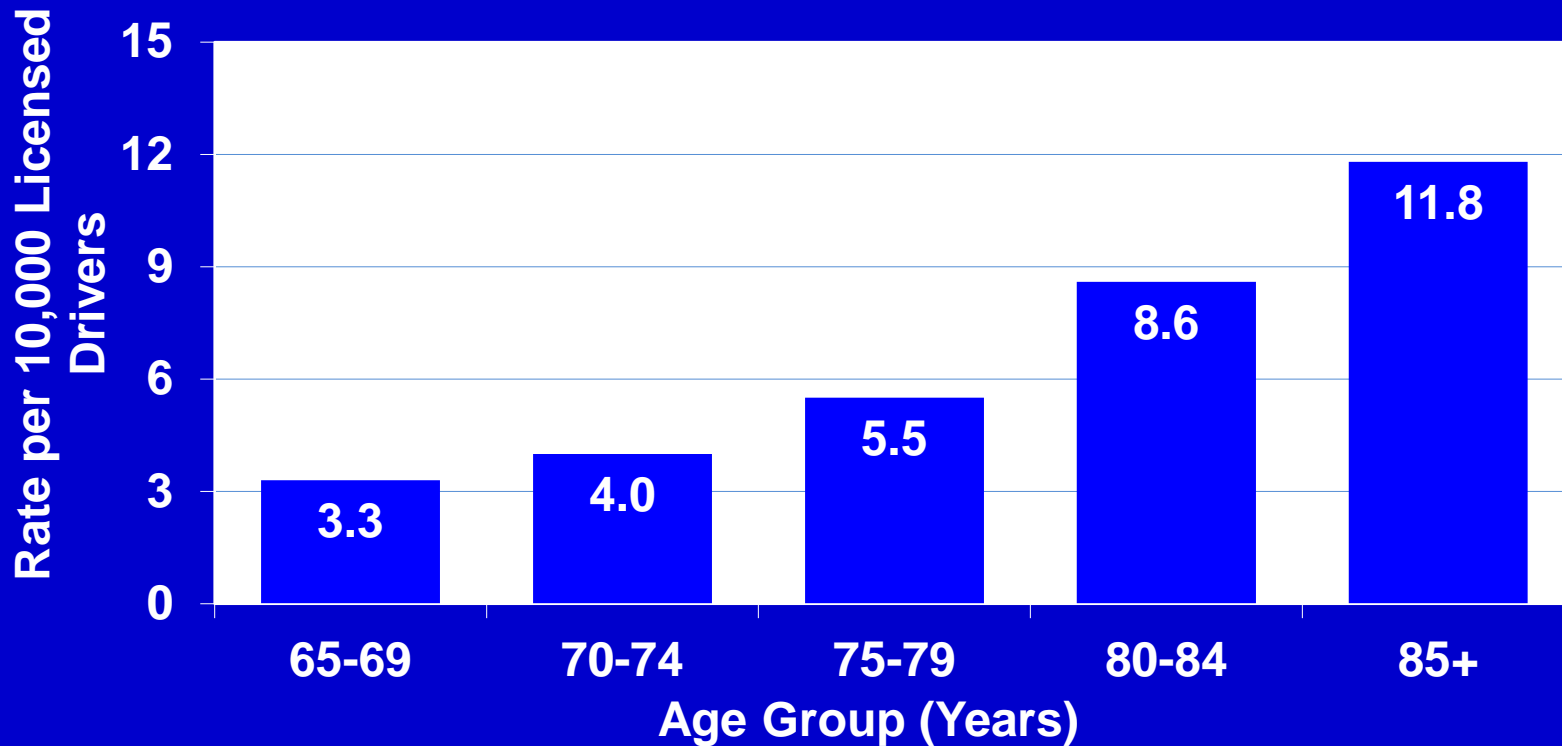
Data Sources:

Licenses (2013) - MA Shelley License Report 2013, MA Registry of Motor Vehicles

Vehicle Miles Travelled – 2009 National Household Travel Survey

Population (2013) - Missouri Census Data Center, Population Estimates by Age Query

# Hospital Stays for MV-Driver Injuries<sup>1</sup>, Rates per 10,000 Licensed Drivers<sup>2</sup> , MA Residents Ages 65+, FY2013 (N = 446)



1. Nonfatal injuries only; deaths and transfers were excluded. Does not include motorcycle operator injuries.

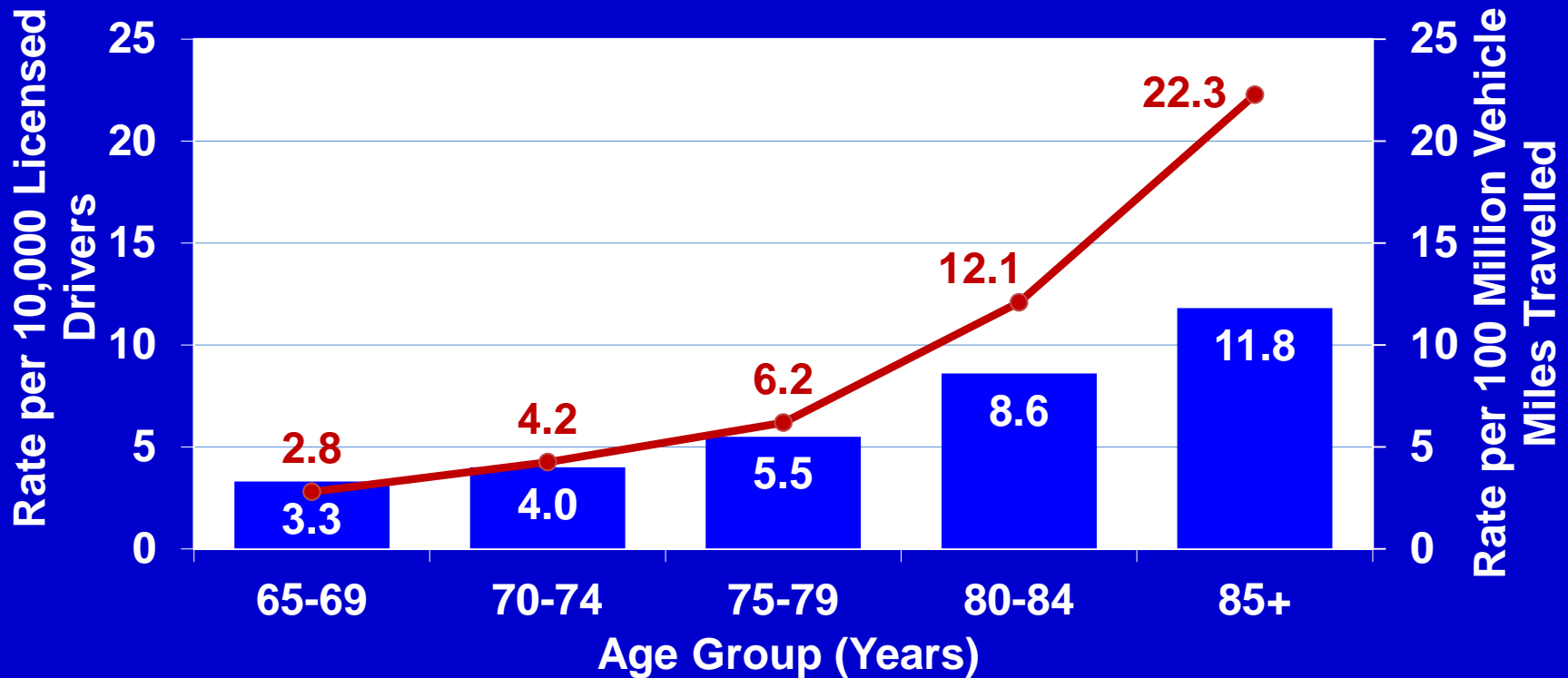
2. Licenses include active licenses of any class; 2013 data.

*Data Sources:*

*Hospital Stays* - MA Inpatient Hospital Discharge and Outpatient Observation Stay databases, MA Center for Health Information and Analysis. Data are compiled and presented by fiscal year.

*Licenses* - MA Shelley License Report 2013, MA Registry of Motor Vehicles

# Hospital Stays for MV-Driver Injuries<sup>1</sup>, Rates per 10,000 Licensed Drivers<sup>2</sup> and 100 Million VMT<sup>3</sup>, MA Residents Ages 65+, FY2013 (N = 446)



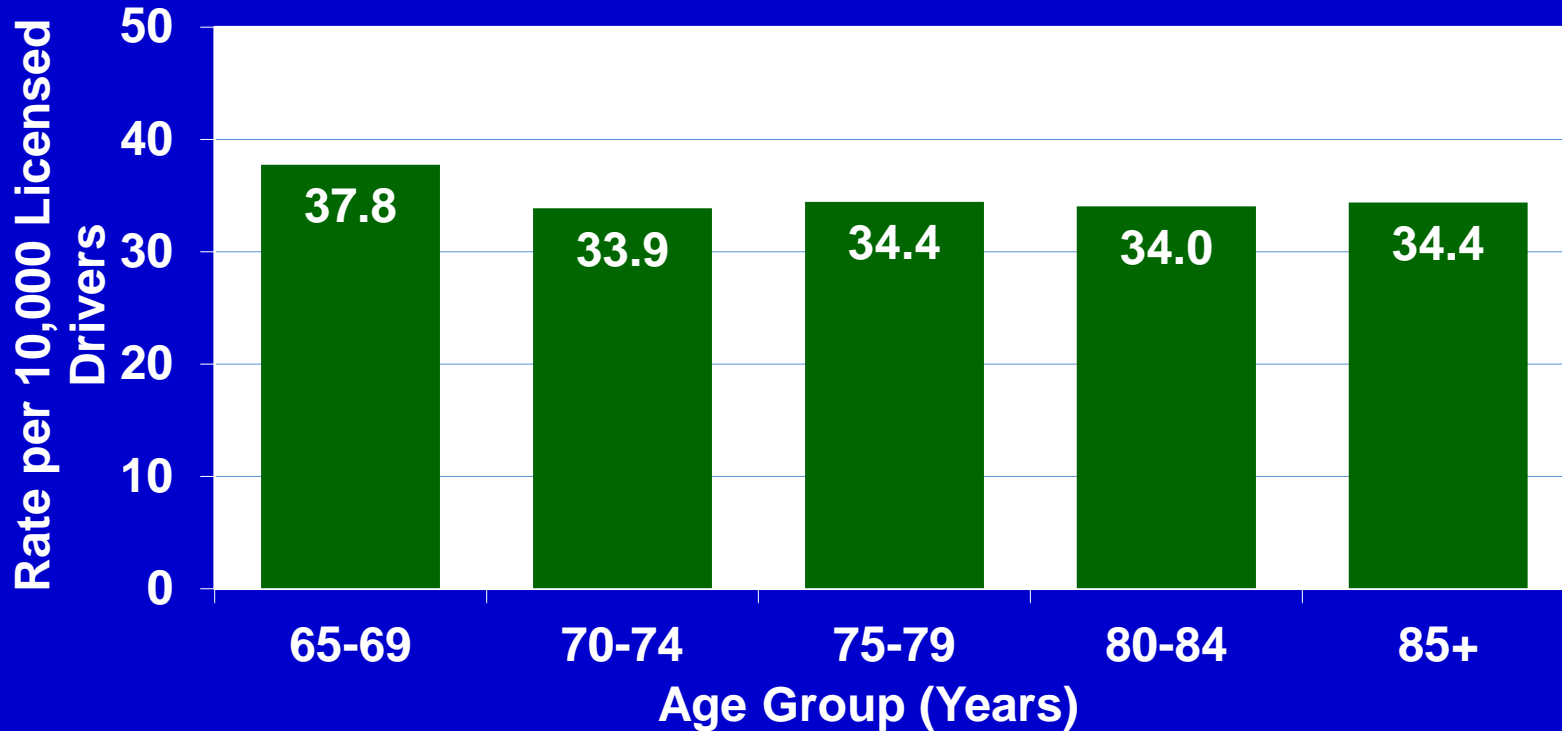
1. Nonfatal injuries only; deaths and transfers were excluded. Does not include motorcycle operator injuries.
2. Licenses include active licenses of any class; 2013 data.
3. Based on average annual vehicle miles travelled (VMT) per driver times the number of licensed MA drivers in age group.

*Data Sources:* Hospital Stays - MA Inpatient Hospital Discharge and Outpatient Observation Stay databases, MA Center for Health Information and Analysis. Data are compiled and presented by fiscal year.

*Licenses* - MA Shelley License Report 2013, MA Registry of Motor Vehicles

*Vehicle Miles Travelled* - 2009 National Household Travel Survey

# ED Visits for MV-Driver Injuries<sup>1</sup>, Rates per 10,000 Licensed Drivers<sup>2</sup>, MA Residents Ages 65+, FY2013 (N = 2,931)



1. Nonfatal injuries only; deaths were excluded. Does not include motorcycle operator injuries.

2. Licenses include active licenses of any class.

*Data Sources:*

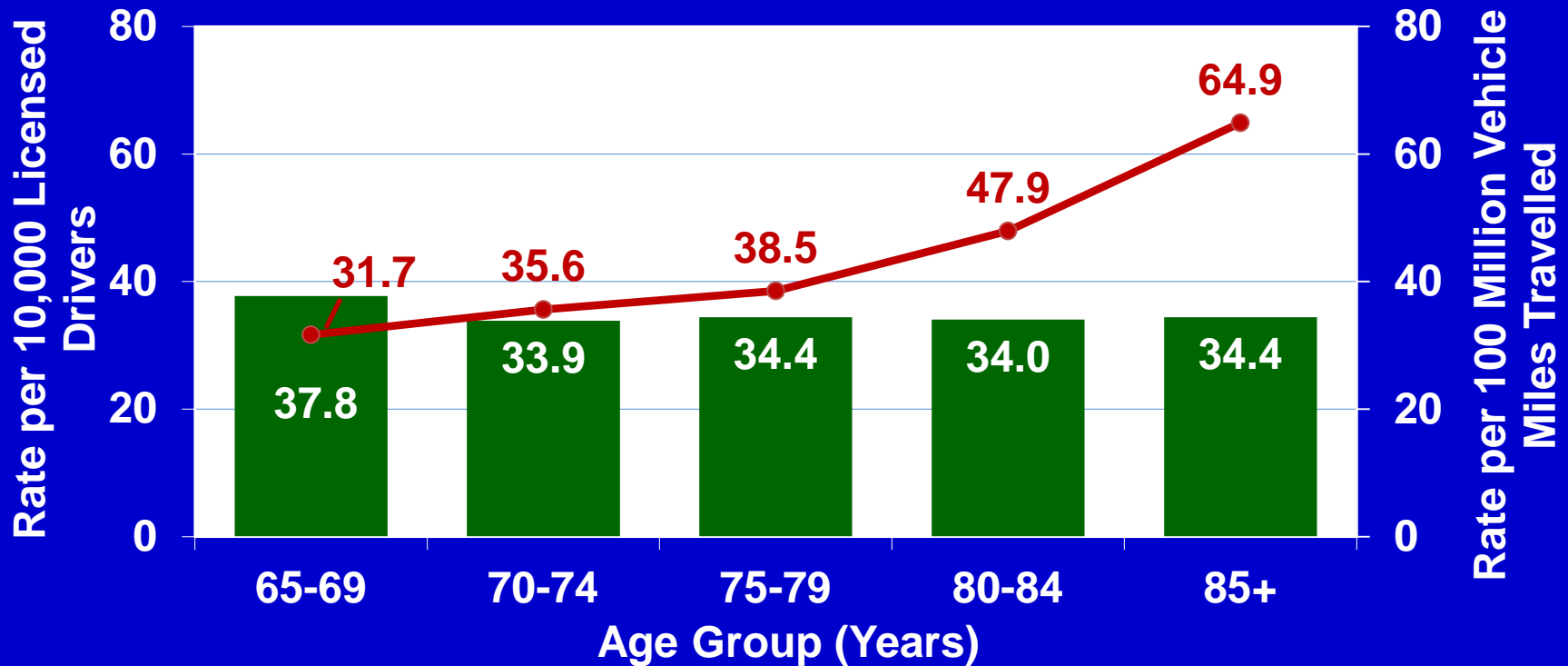
*Emergency Department Visits* - MA Emergency Department Discharge database, MA Center for Health Information and Analysis.

Data are compiled and presented by fiscal year.

*Licenses* - MA Shelley License Report 2013, MA Registry of Motor Vehicles

# ED Visits for MV-Driver Injuries<sup>1</sup>,

Rates per 10,000 Licensed Drivers<sup>2</sup> and 100 Million VMT<sup>3</sup>,  
MA Residents Ages 65+, FY2013 (N = 2,931)



1. Nonfatal injuries only; deaths were excluded. Does not include motorcycle operator injuries.

2. Licenses include active licenses of any class.

3. Based on average annual vehicle miles travelled (VMT) per driver times the number of licensed MA drivers in age group.

Data Sources: *Emergency Department Visits* - MA Emergency Department Discharge database, MA Center for Health Information and Analysis. Data are compiled and presented by fiscal year.

*Licenses* - MA Shelley License Report 2013, MA Registry of Motor Vehicles

*Vehicle Miles Travelled* - 2009 National Household Travel Survey

# Questions?

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## Resources:

**Injury Surveillance Program**

**MA Department of Public Health**

**[www.mass.gov/dph/isp](http://www.mass.gov/dph/isp)**

**Injury Prevention and Control Program**

**MA Department of Public Health**

**[www.ma.gov/dph/injury](http://www.ma.gov/dph/injury)**

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## Presented by:

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**MDPH Injury Surveillance Program**

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