



Insurance Institute for Highway Safety  
Highway Loss Data Institute

# **An examination of the increases in pedestrian motor vehicle crash fatalities during 2009–16**

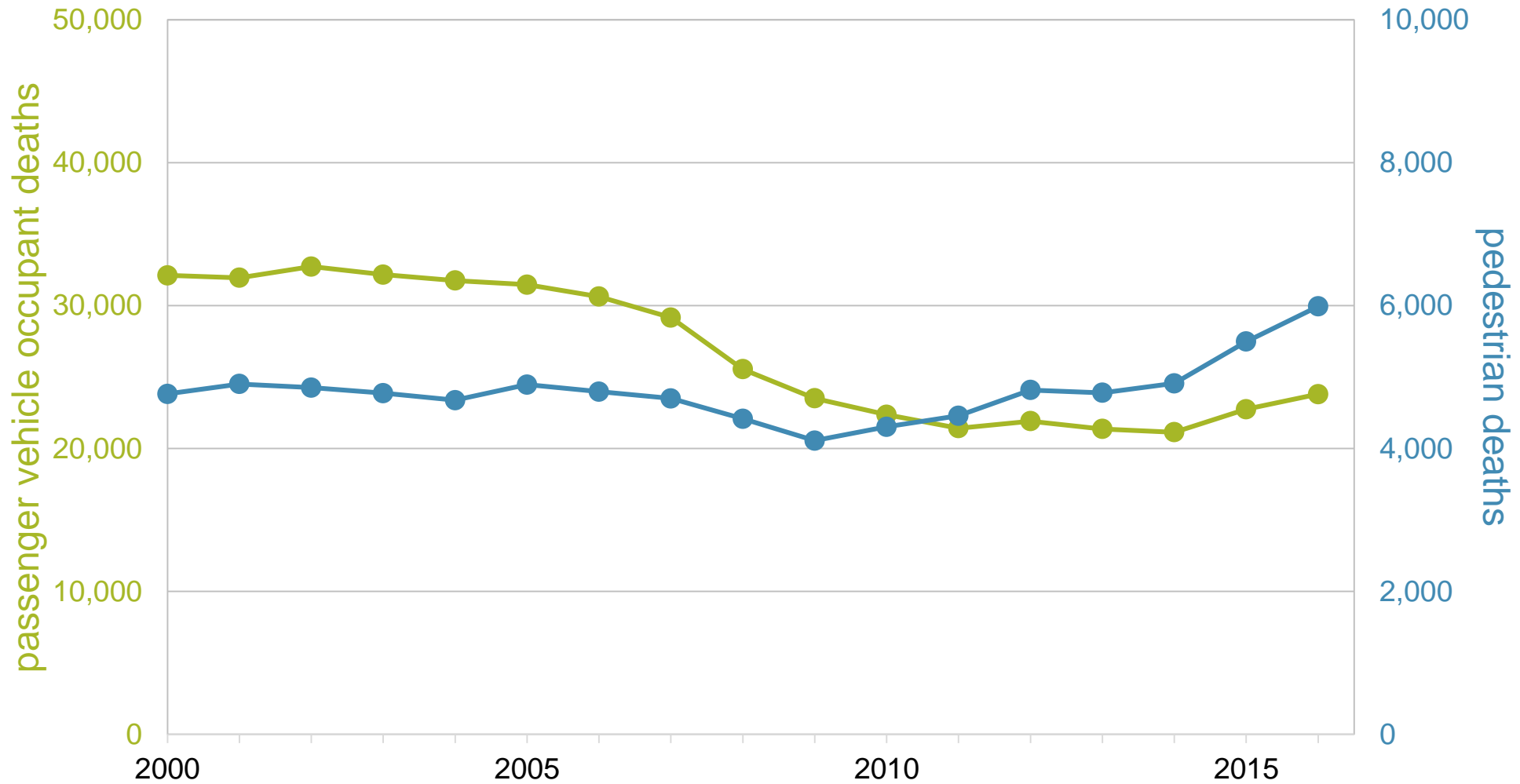
6<sup>th</sup> Annual Distracted Driving Summit  
September 19, 2018

Wen Hu, Ph.D.

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

# Pedestrian deaths and passenger vehicle occupant deaths

2000–16

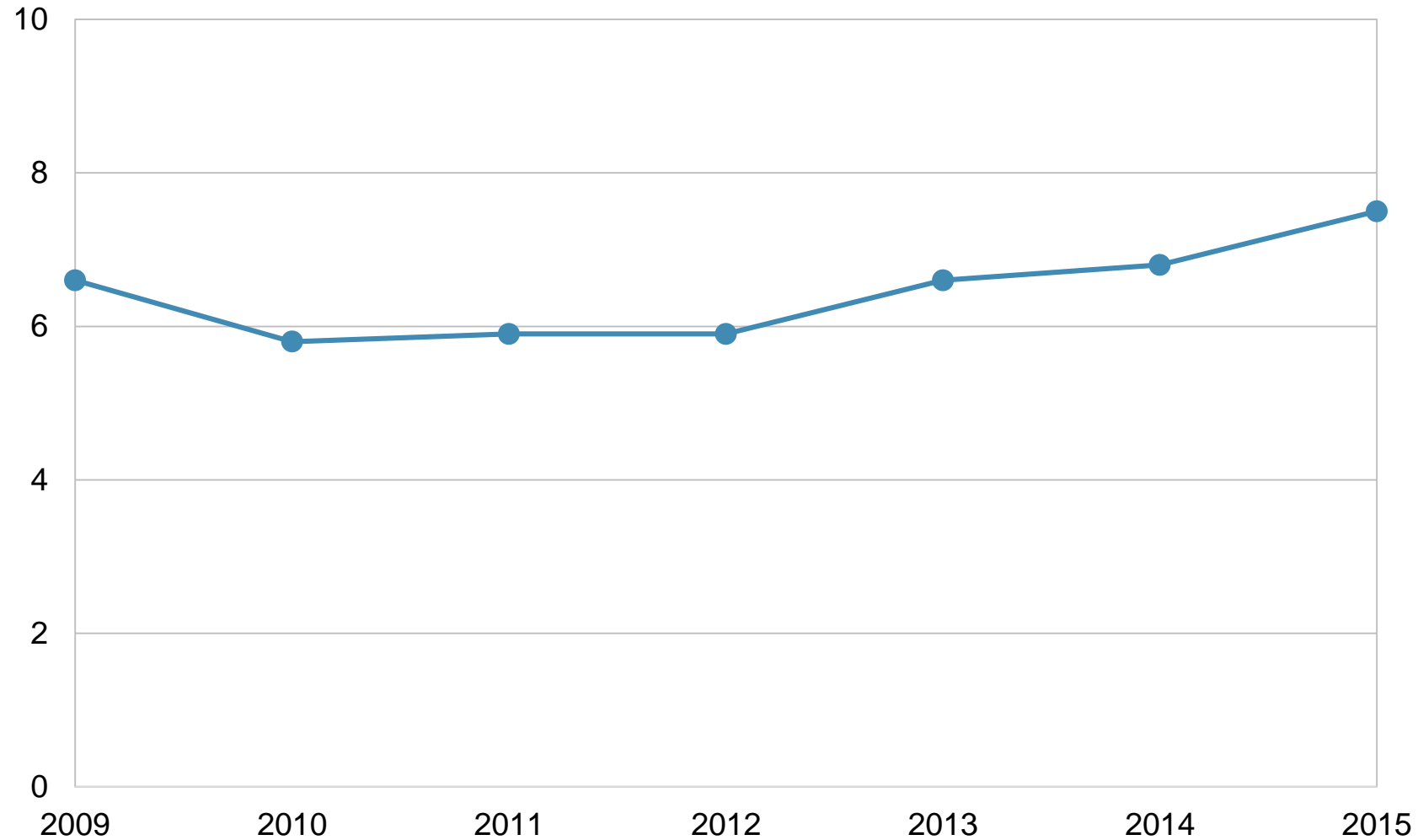


# Examination of 2009–16 pedestrian fatality trends

- ▶ Annual counts of pedestrian deaths by
  - Roadway and environment factors
  - Personal factors
- ▶ In single-vehicle fatal pedestrian crashes
  - Annual counts of vehicles by vehicle type
  - Annual mean power of passenger vehicles
- ▶ To identify scenarios where the largest increases occurred

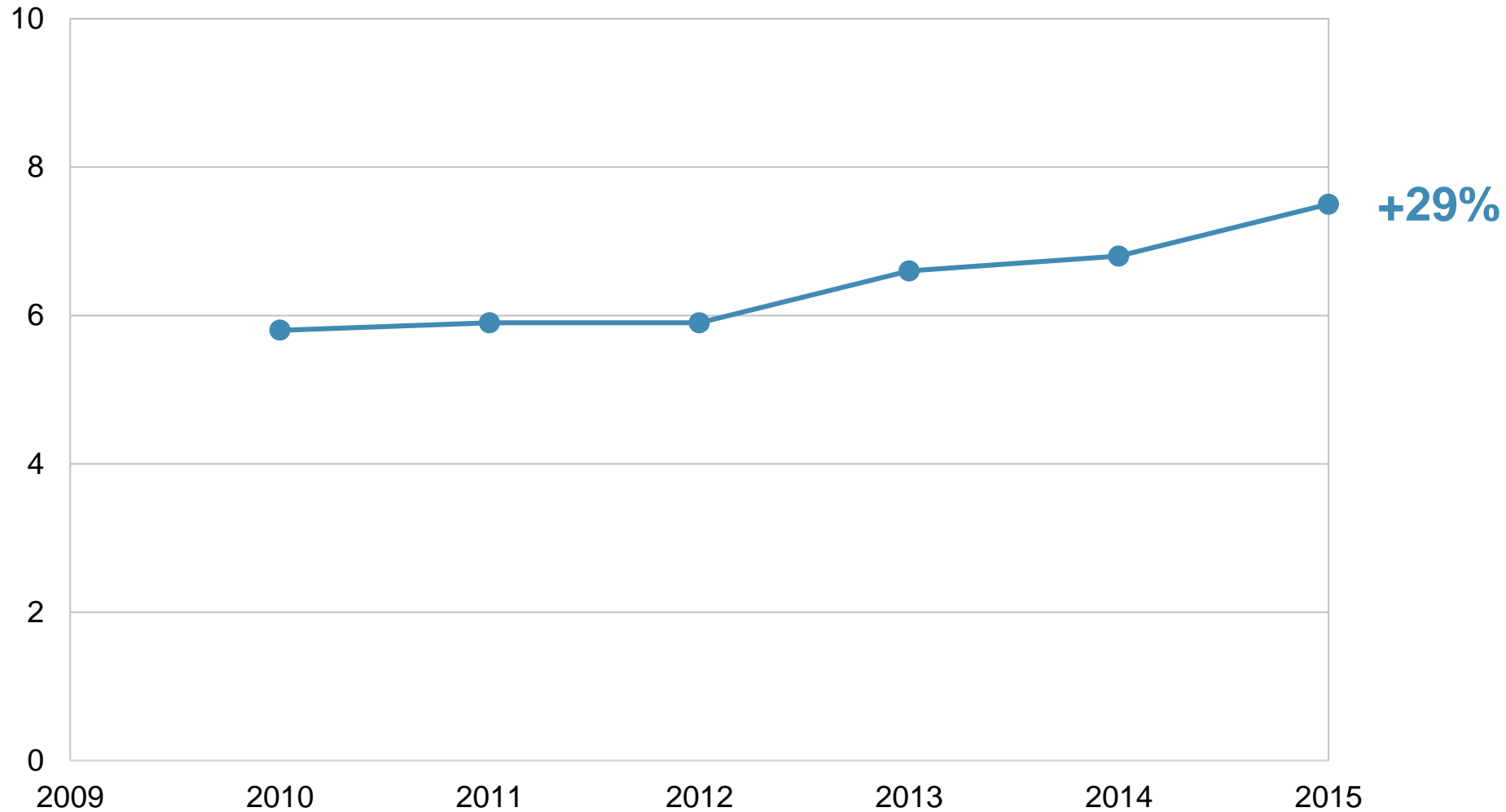
# Pedestrian deaths per 100 involved in crashes of all severities

2009–15



# Pedestrian deaths per 100 involved in crashes of all severities

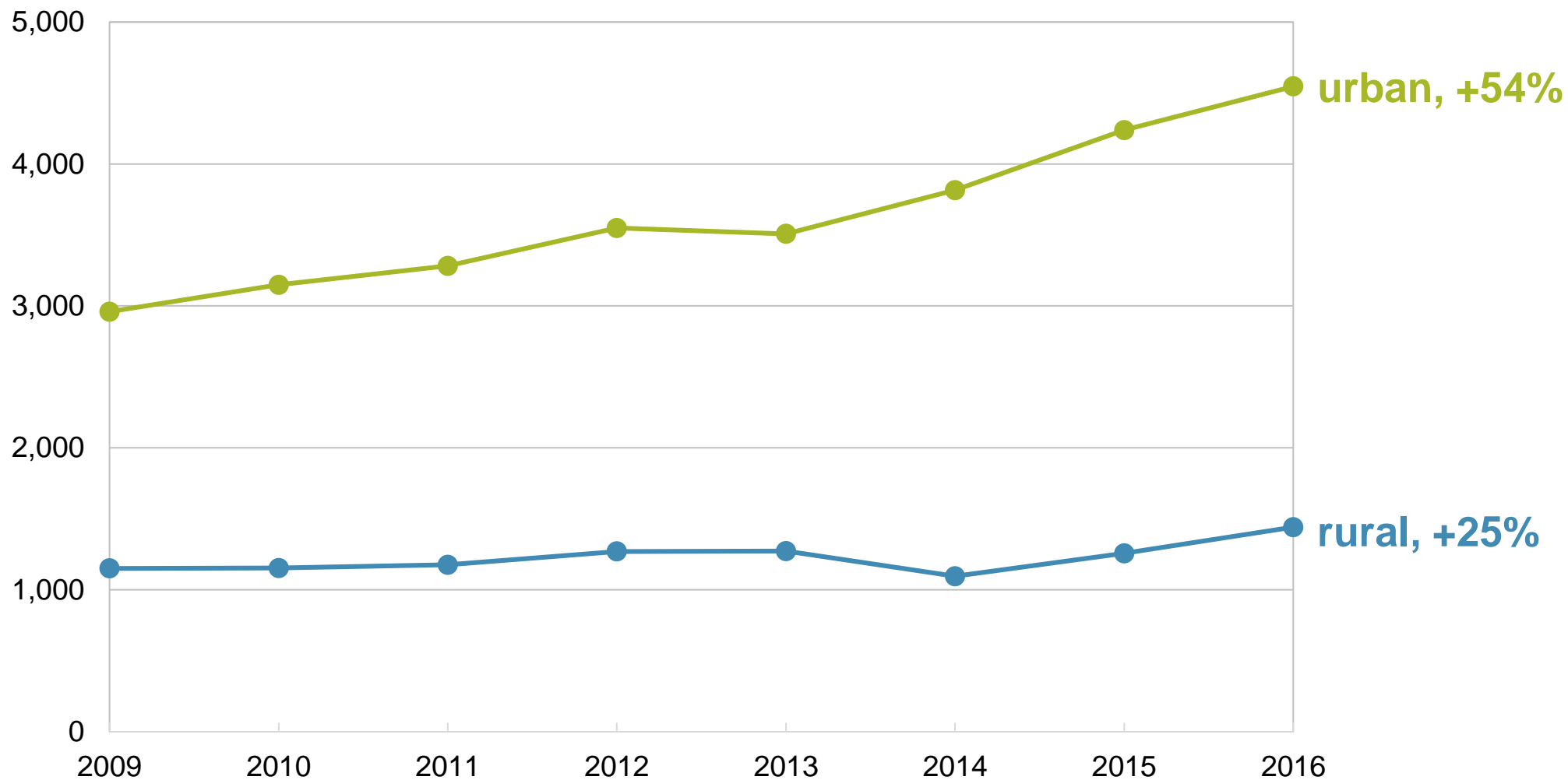
2009–15



# Roadway and environmental factors

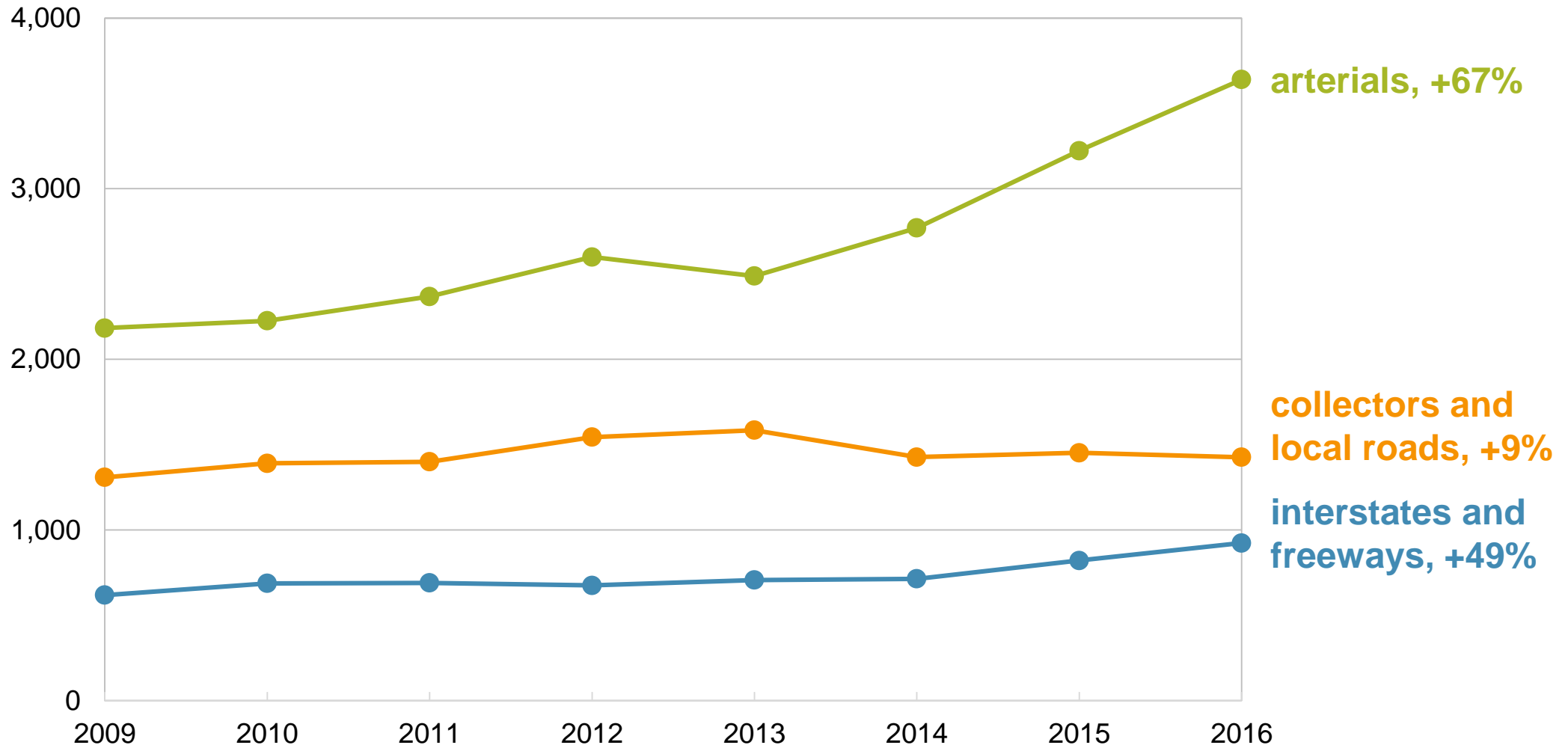
# Pedestrian deaths by land use

2009–16



# Pedestrian deaths by road functional class

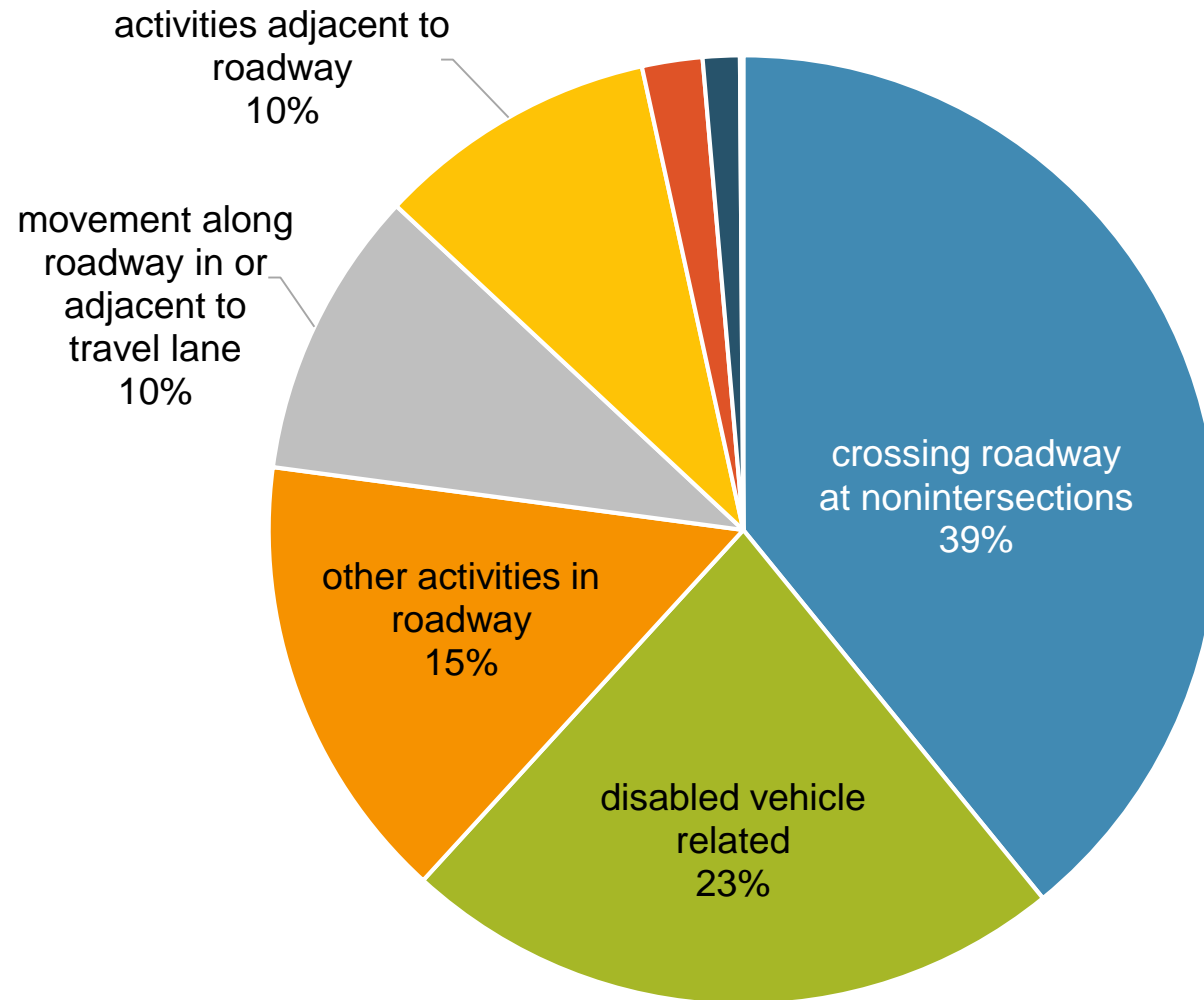
2009–16





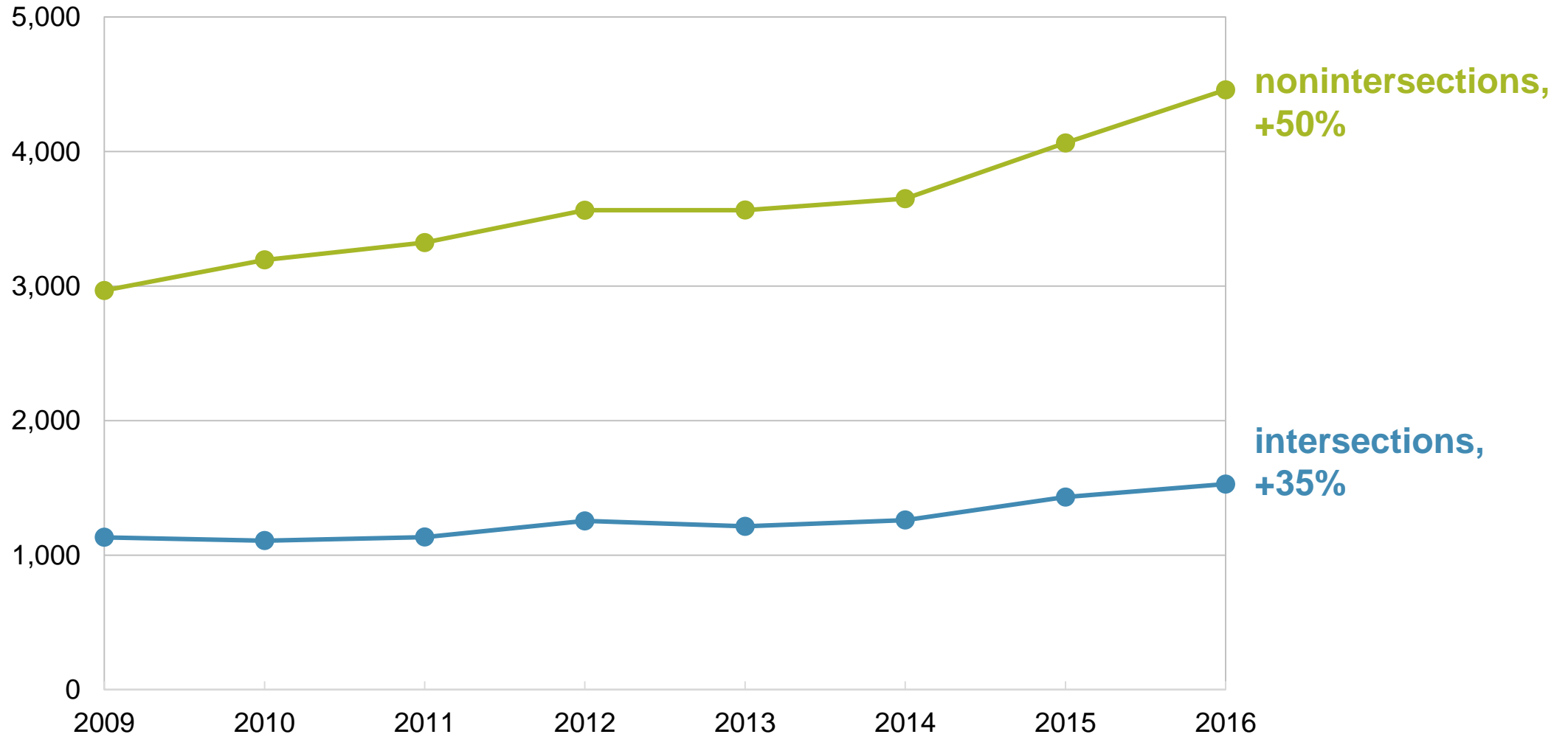
# Pedestrian actions prior to crash

On interstates and freeways, 2016



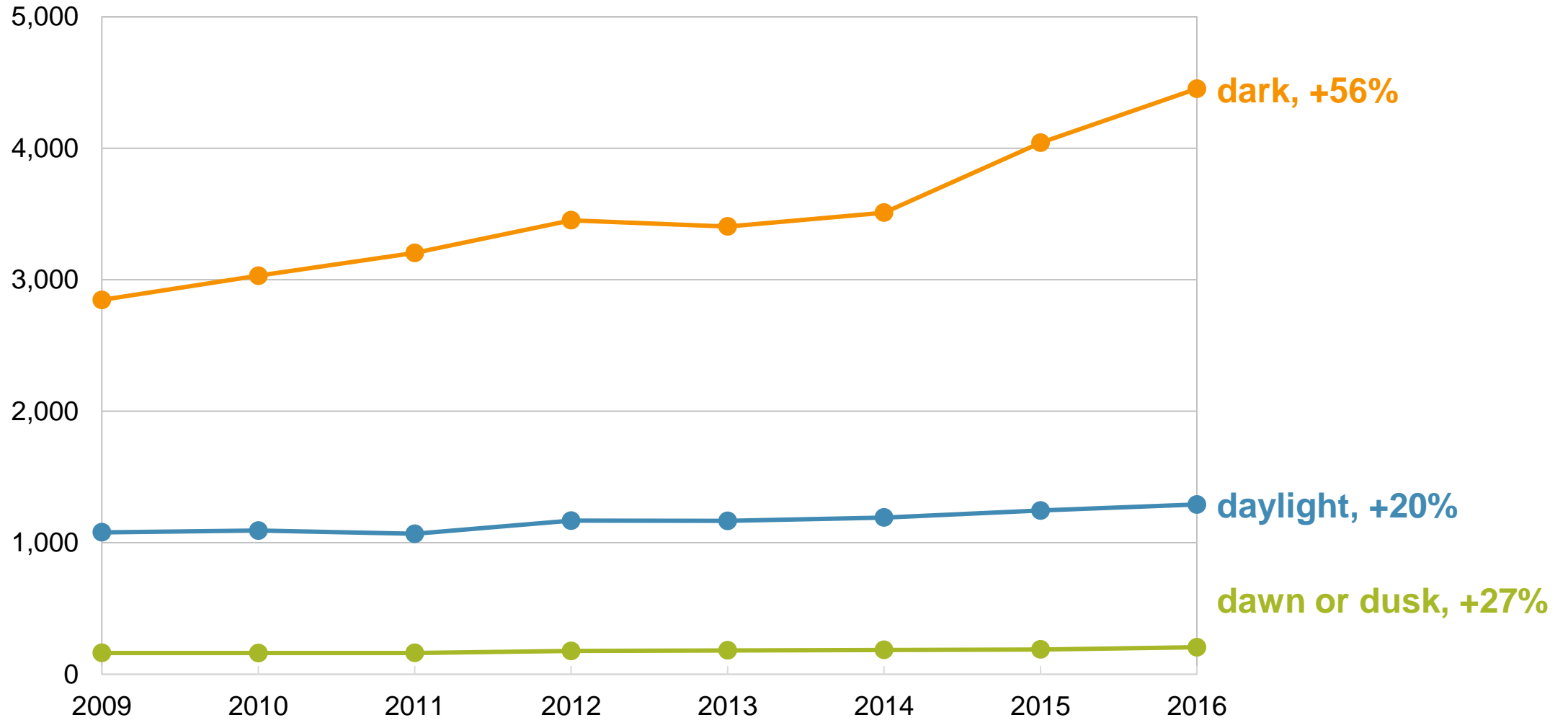
# Pedestrian deaths by location

2009–16



# Pedestrian deaths by light condition

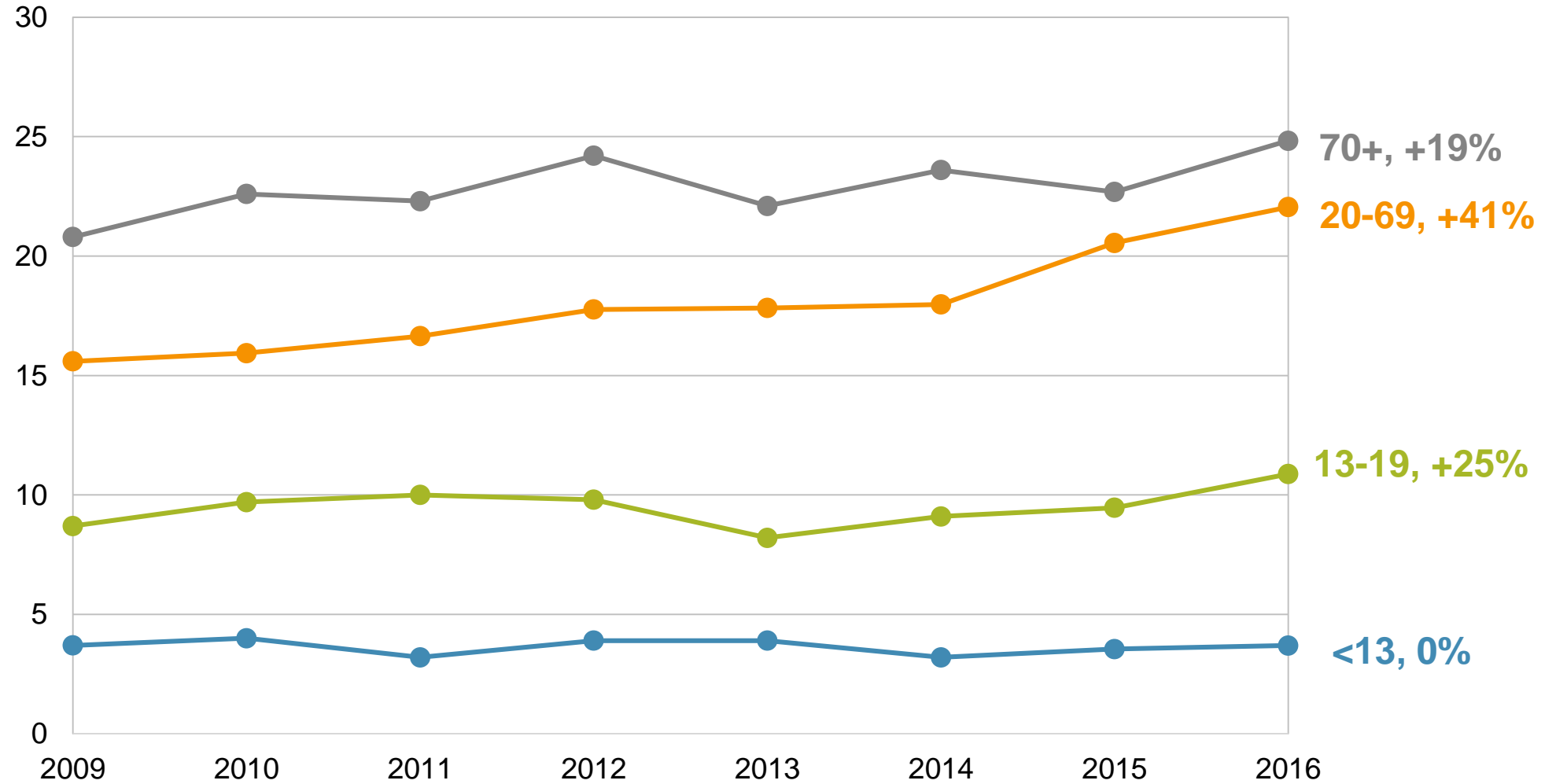
2009–16



# Characteristics of fatally injured pedestrians

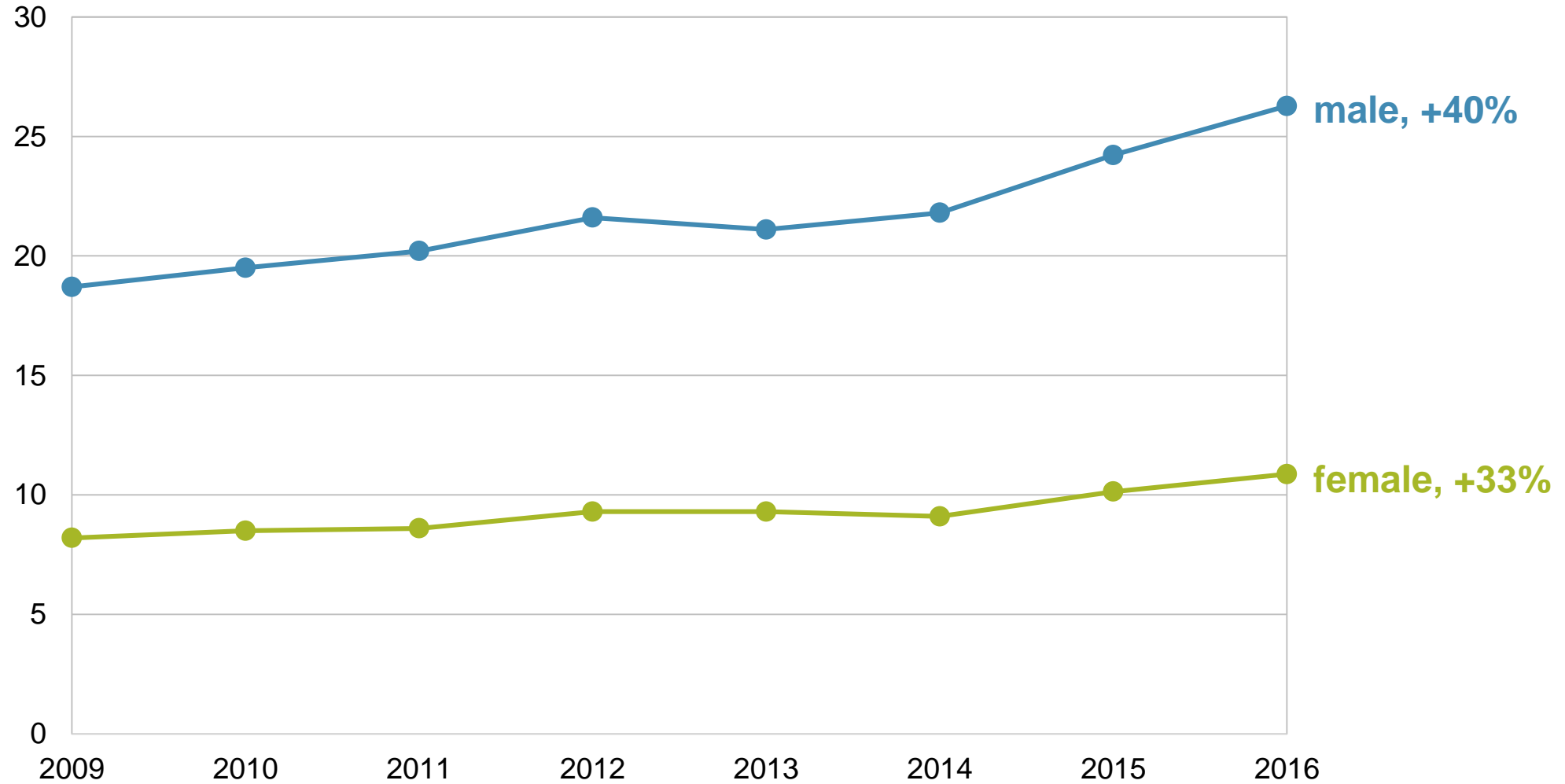
# Pedestrian deaths per million population by age

2009–16



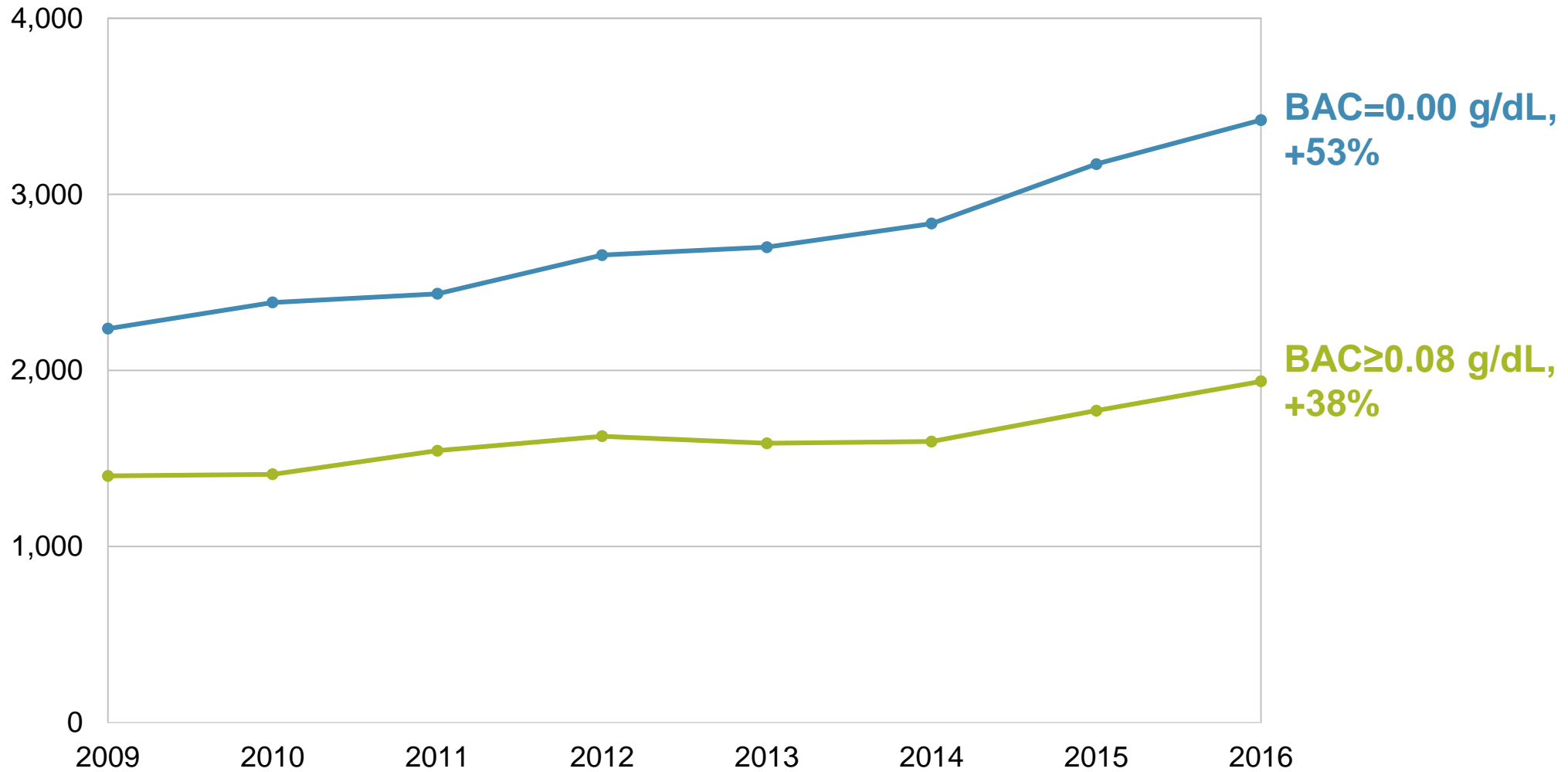
# Pedestrian deaths per million population by gender

2009–16



# Pedestrian deaths by BACs

Ages 16 and older, 2009–16

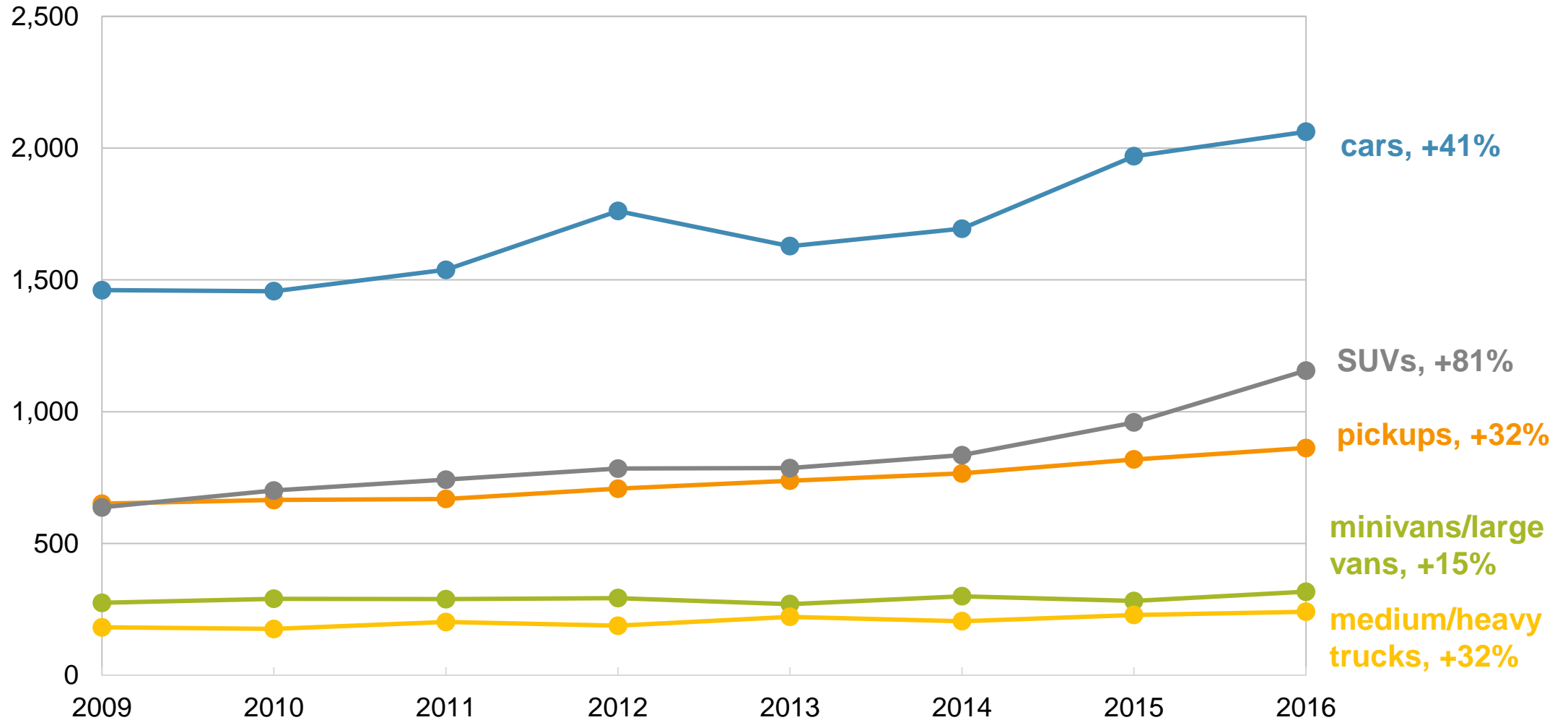


# Vehicle characteristics



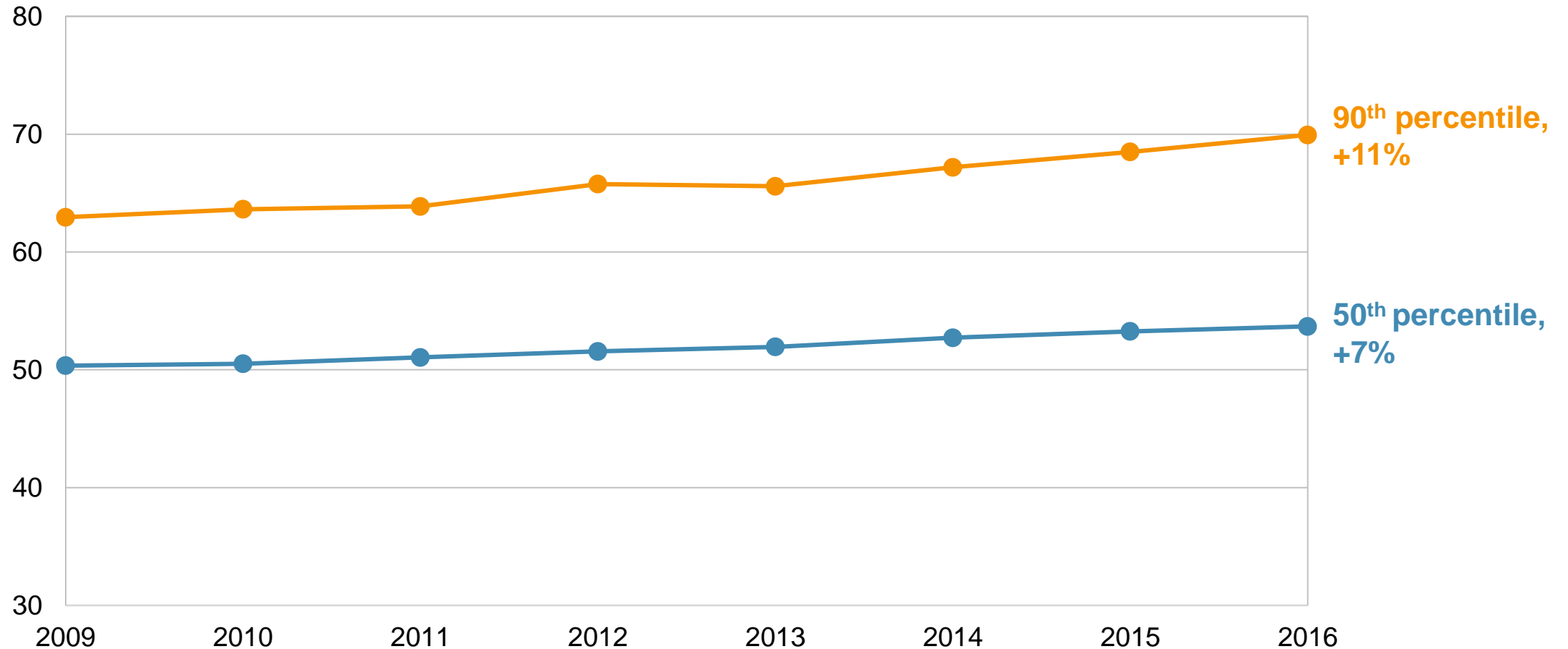
# Vehicle types in single-vehicle fatal pedestrian crashes

2009–16



# Horsepower per 1,000 lb. vehicle weight of passenger vehicles in single-vehicle fatal pedestrian crashes

2009–16



# Upward trend in pedestrian deaths

- ▶ Highest increases occurred in scenarios with most pedestrian deaths
  - Urban areas
  - Arterials
  - Nonintersections
  - Dark
- ▶ Higher increases among age group 20-69 and pedestrians not impaired by alcohol
- ▶ Increasing vehicle power associated with increased risk of pedestrian deaths
- ▶ The high increase in SUVs in fatal pedestrian crashes reflected rising SUV population

# Is distraction contributing to increase in pedestrian deaths?

- ▶ No reliable information on driver or pedestrian distraction in FARS
- ▶ Situations with the largest increases have well-established contributing factors
  - Arterials and interstates/freeways: high speeds, unexpected pedestrians
  - Nonintersections: unexpected and unprotected pedestrians
  - In the dark: visibility
  - SUVs: higher and heavier vehicles
- ▶ Need to know if drivers and pedestrians are distracted in situations where pedestrian deaths are increasing

# Countermeasures to improve pedestrian safety

- ▶ Design roads for pedestrians
  - Midblock crossings with features that alert drivers to the presence of pedestrians
  - Road diets, curb extensions, and median crossing islands
  - Sidewalks
- ▶ Reduce speeds
  - Lower speed limits
  - Speed cameras
  - Road diets
- ▶ Improve vehicles
  - Improved headlights
  - Front crash prevention systems to recognize pedestrians



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