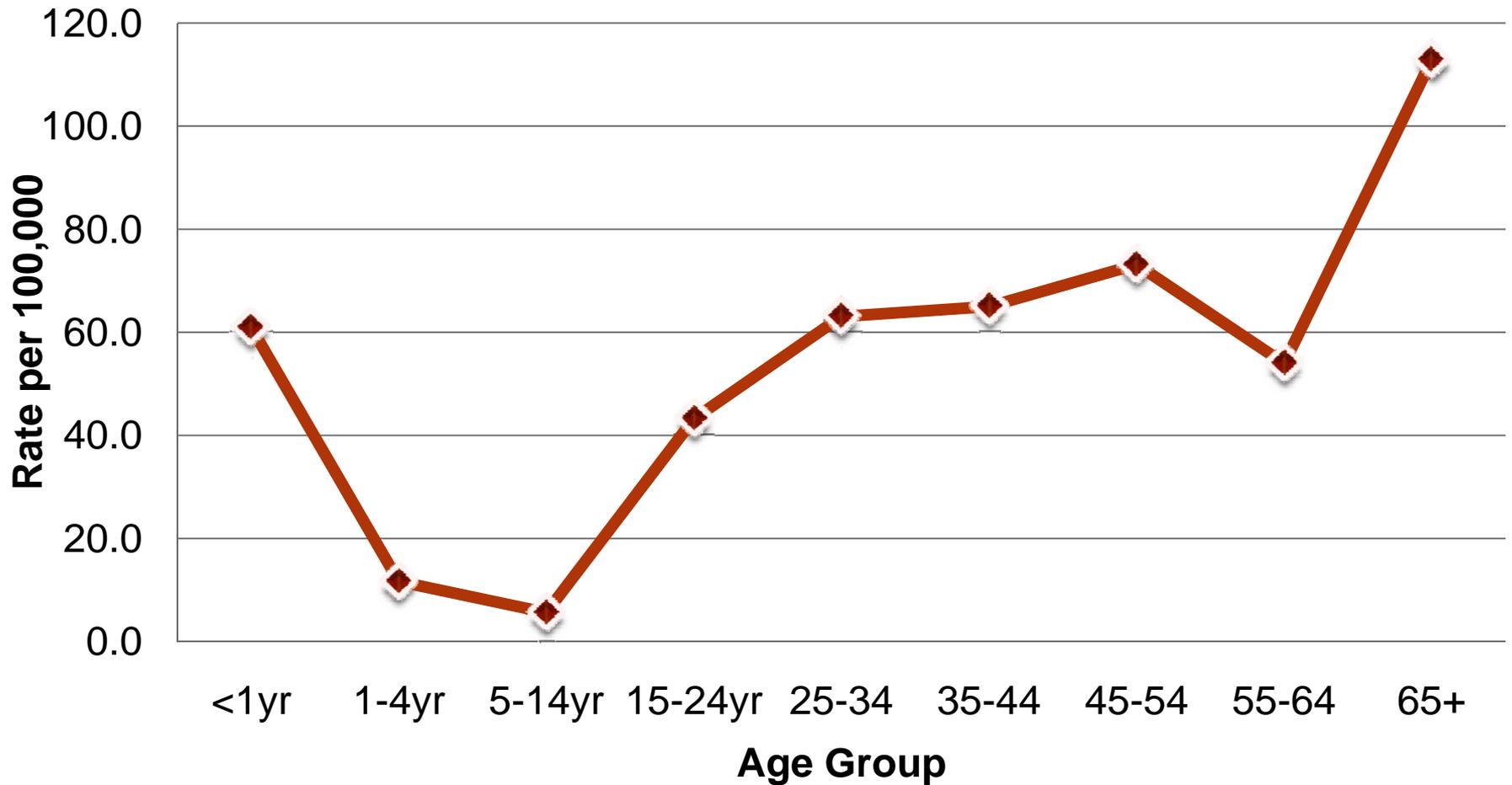


# **Burden of Falls Among Older Adults in Ohio**

**Violence and Injury  
Prevention Program**

**Ohio Department of Health**

# Injury death rates per 100,000 by age group, Ohio, 2009\*



\*Source: ODH Office of Vital Statistics

# Burden of Falls Among Older Adults in Ohio

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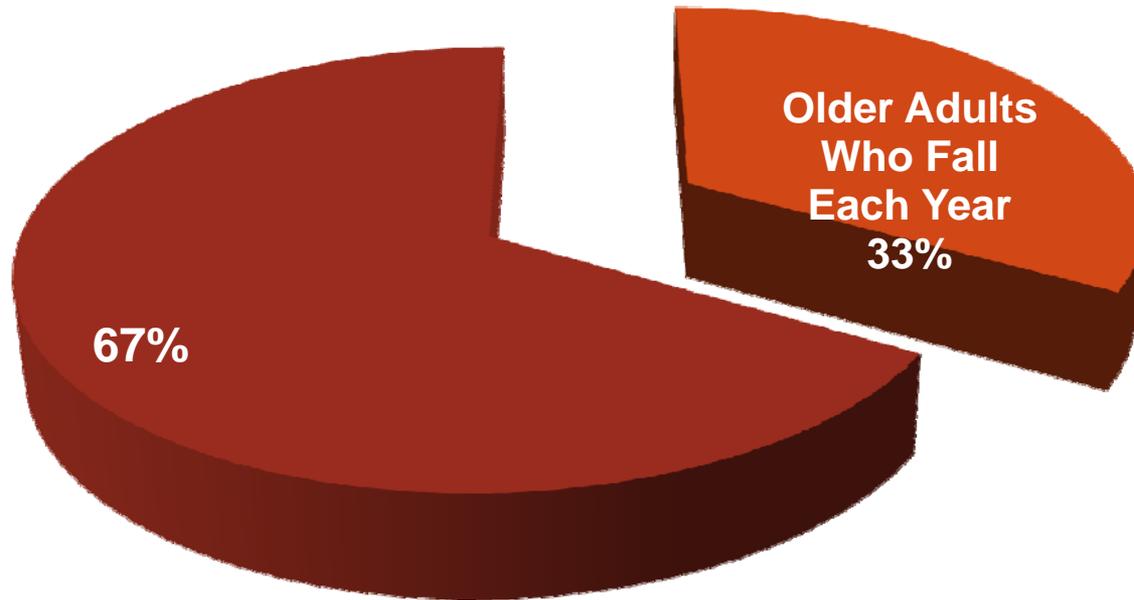


# Key Points

- **Falls among older adults have reached epidemic proportions and rates continue to rise.**
- **Falls among older adults are costly... in terms of direct costs and quality of life.**
- **Older adults account for a disproportionate share of fall-related injury.**
- **The likelihood of falling and the severity of fall-related injury increases with age, and therefore the risk for hospitalization and death.**
- **Older adults with poor health status and those who are isolated are at greater risk for falling.**

# Epidemic Proportions of Falls

Each year, 1 in 3 older adults falls.\*

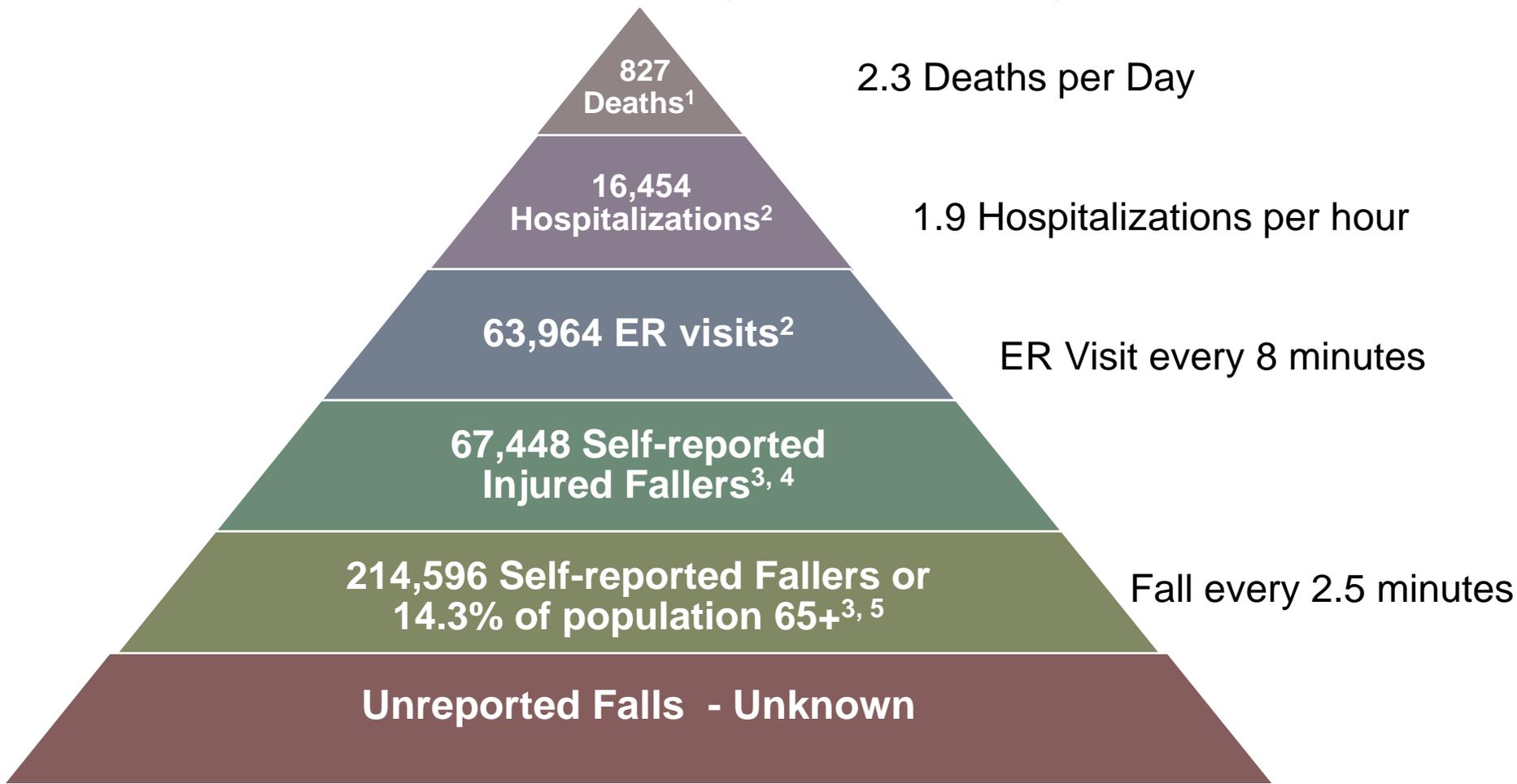


\*Source: **Hornbrook MC, Stevens VJ, Wingfield DJ, Hollis JF, Greenlick MR, Ory MG.** *Preventing falls among community-dwelling older persons: results from a randomized trial.* The Gerontologist 1994;34(1):16–23.

# Consequences of Falls

- Injury and Death
- Fear of Future Falls
- Restriction of Activities/Social Isolation
- Inability to Regain Pre-fall level of Functioning
- Lack of Independence
- Depression

# Number of fall-related deaths,<sup>1</sup> HIDs<sup>2</sup> and ER visits,<sup>2</sup> and self-reported injured fallers<sup>3,4</sup> and fallers,<sup>3,5</sup> for ages 65 and older, Ohio, 2009<sup>1,2</sup> (2006 BRFSS<sup>3,4,5</sup>)

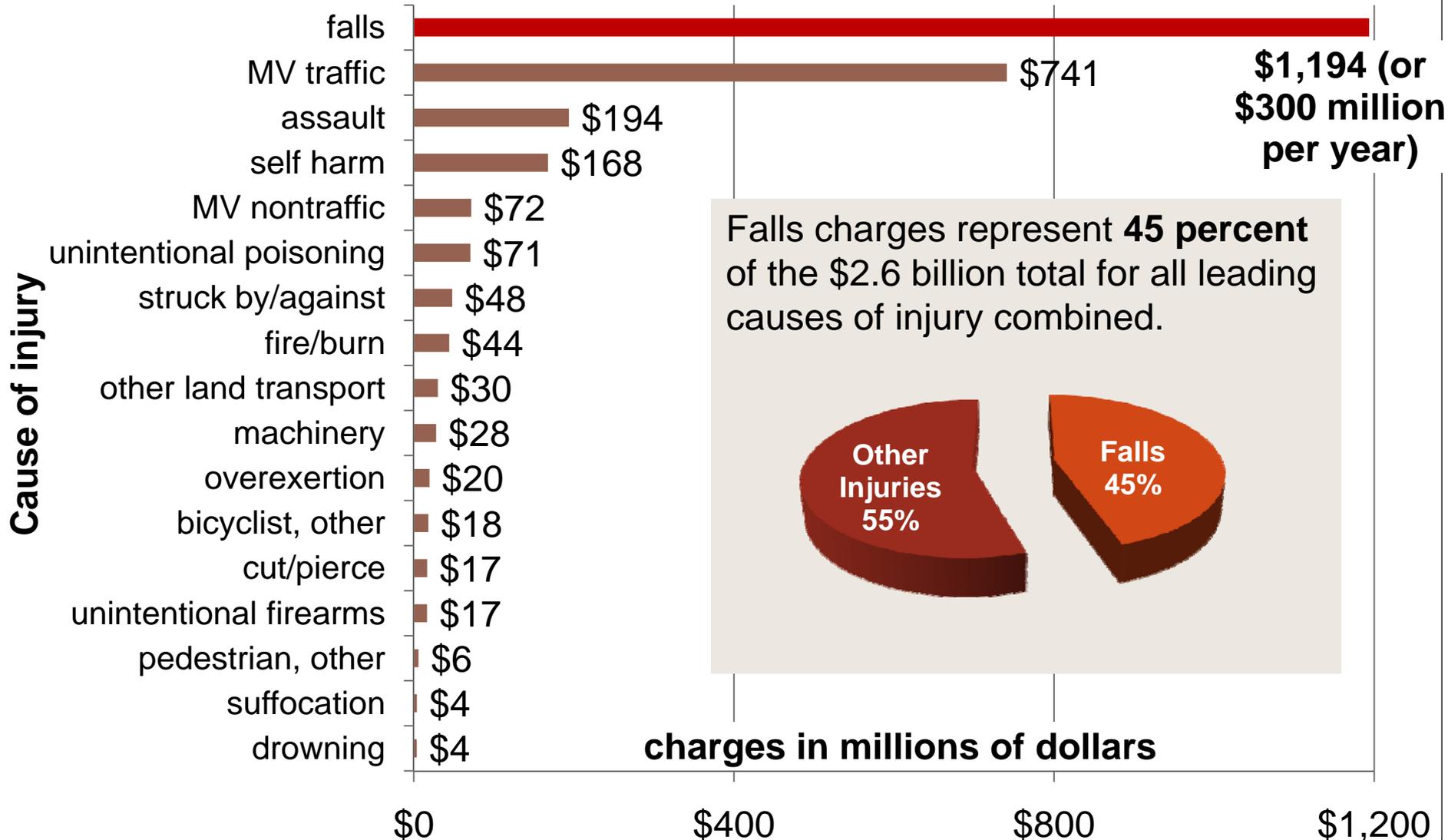


Sources: <sup>1</sup>ODH Office of Vital Statistics, 2009 data <sup>2</sup>Ohio Hospital Association, 2009 data <sup>3</sup>BRFSS Survey, 2006  
<sup>4</sup>Self-reported fallers (estimated) whose fall in preceding 3 months resulted in a doctor's visit or restricted activities for at least one day <sup>5</sup>BRFSS respondents who reported experiencing a fall in the preceding 3 months

# Costs of Fall-related Injury

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# Total charges (in millions) for inpatient treatment<sup>1</sup> of leading causes of injury, by type of injury, Ohio, 2002-05



<sup>1</sup>Source: Ohio Hospital Association

## Average Annual Cost of Non-fatal, Hospital-admitted Falls Among Older Adults, Ages 65+ Ohio, 2003<sup>1,2</sup>

	<b>65+ yrs Total</b>	<b>Percent of All Fall Costs</b>
<b>Incidence</b>	<b>19,137</b>	<b>71%</b>
<b>Medical</b>	<b>\$ 327 million</b>	<b>67%</b>
<b>Work-Loss</b>	<b>\$ 116 million</b>	<b>22%</b>
<b>Quality-of-Life</b>	<b>\$ 3.7 billion</b>	<b>72%</b>
<b>Total Costs</b>	<b>\$ 4.2 billion</b>	<b>68%</b>
<b>Proportion of Ohio Population</b>		<b>13%</b>

<sup>1</sup>Source: Children's Safety Network Economics & Data Analysis Resource Center

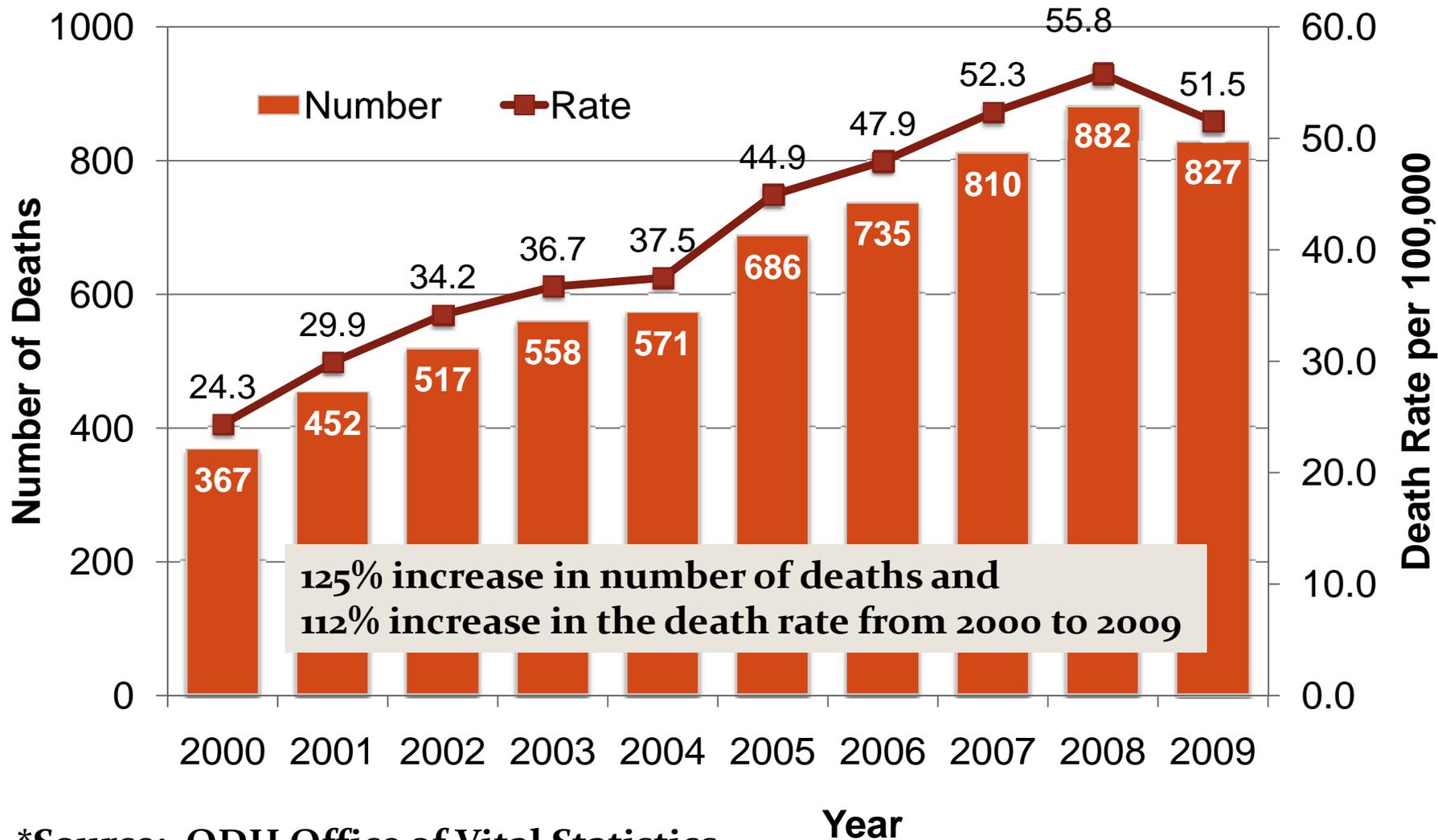
## Average Annual Cost of Fatal Falls Among Older Adults, Ohio, 2005-07<sup>1,2</sup>

	<b>65+ Total</b>	<b>Percent of All Fatal Fall Costs</b>
<b>Incidence</b>	<b>751 (average)</b>	<b>82%</b>
<b>Medical</b>	<b>\$15 million</b>	<b>77%</b>
<b>Work-loss</b>	<b>\$52 million</b>	<b>20%</b>
<b>Quality of Life</b>	<b>\$456 million</b>	<b>53%</b>
<b>Total Costs</b>	<b>\$524.8 million</b>	<b>46%</b>
<b>Proportion of Ohio Population &gt;65 years</b>		<b>13%</b>

# Trends over Time

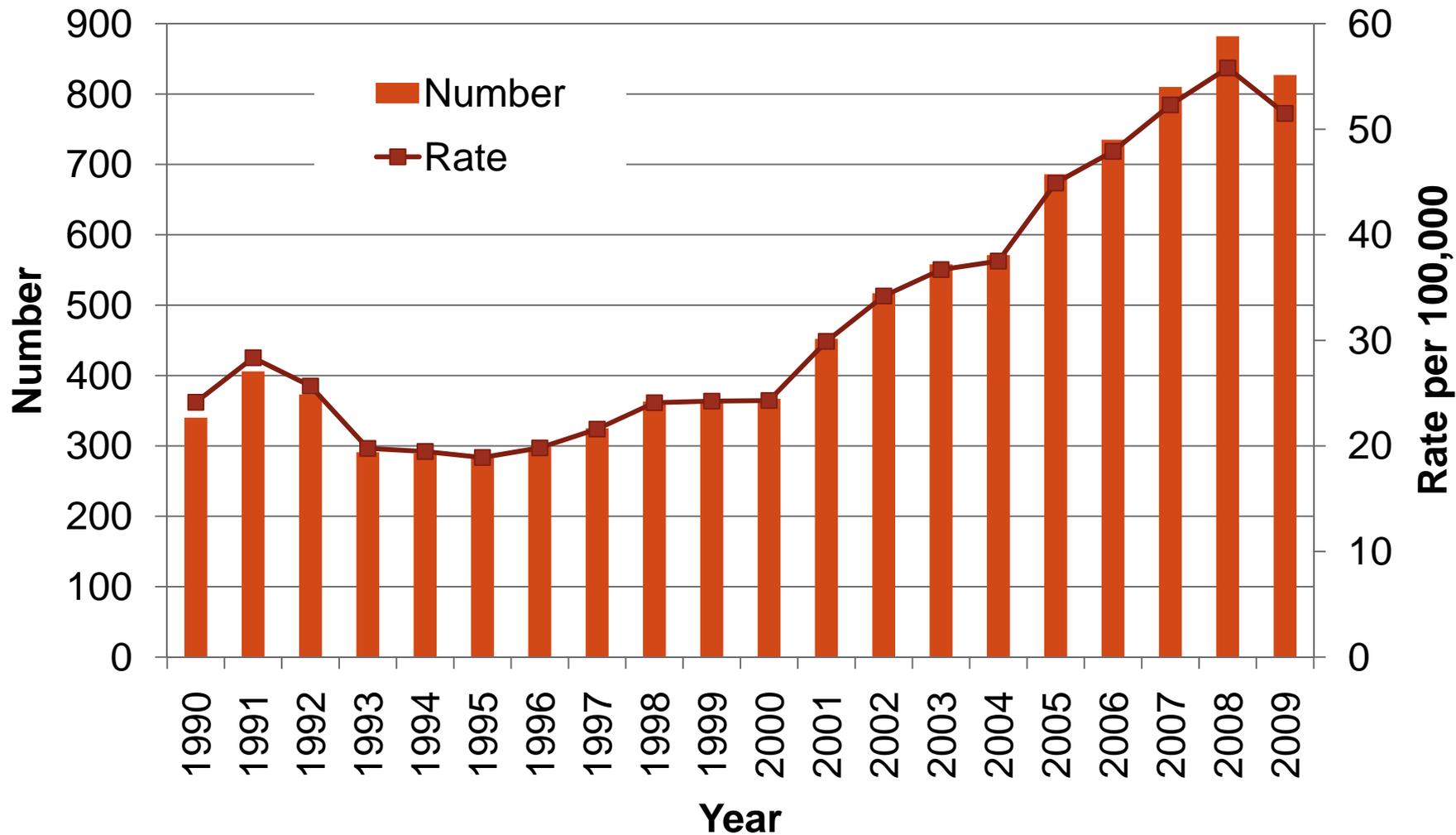
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# Annual number and rate per 100,000 of fatal falls by year, **ages 65 and older**, Ohio, 2000 to 2009\*



\*Source: ODH Office of Vital Statistics

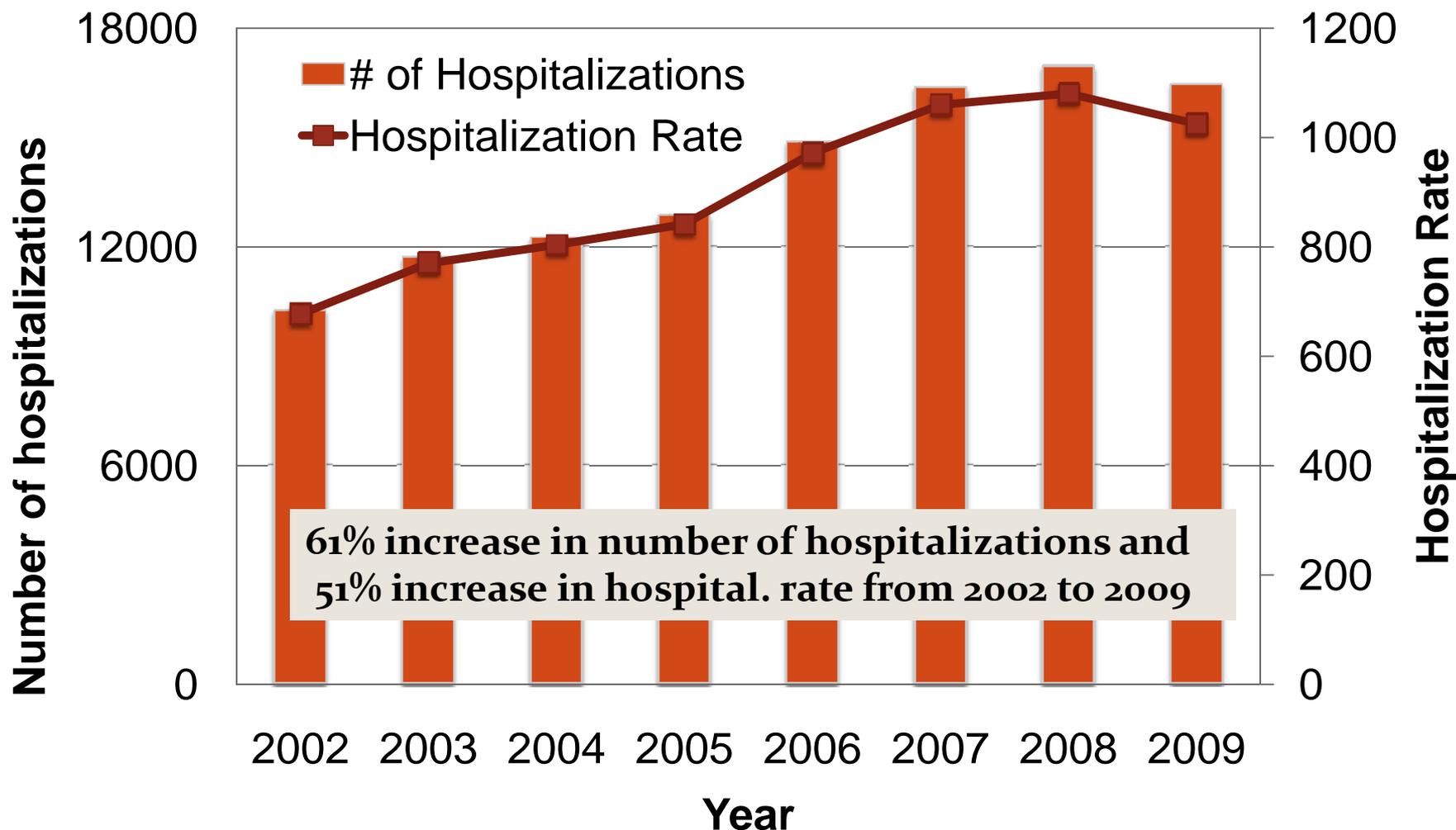
# Annual number and rate per 100,000 of fatal falls by year, **ages 65 and older**, Ohio, 1999 to 2009\*



\*Source: ODH Office of Vital Statistics

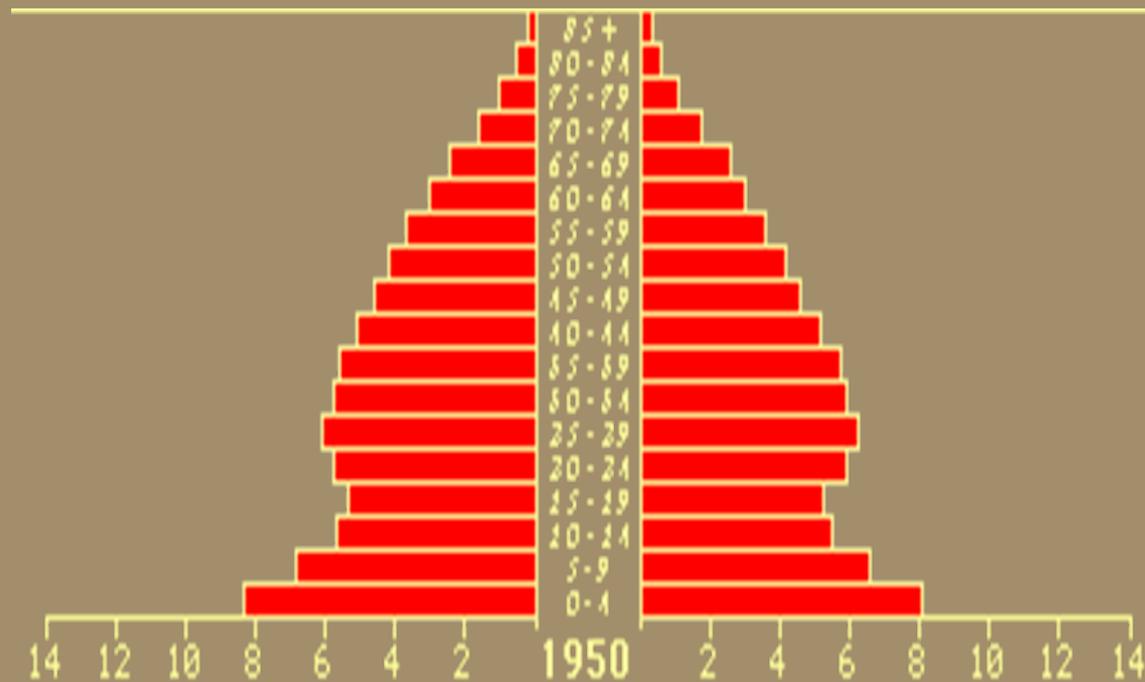
Note Change from ICD-9 to ICD10 coding in 1999

# Number and rate per 100,000 of fall-related hospitalizations by year, ages 65+, Ohio, 2002-09<sup>2</sup>



\*Source: Ohio Hospital Association

# Ohio Population Projections: Growing Age 60+ Population



Male

Age 60+ Population

Female

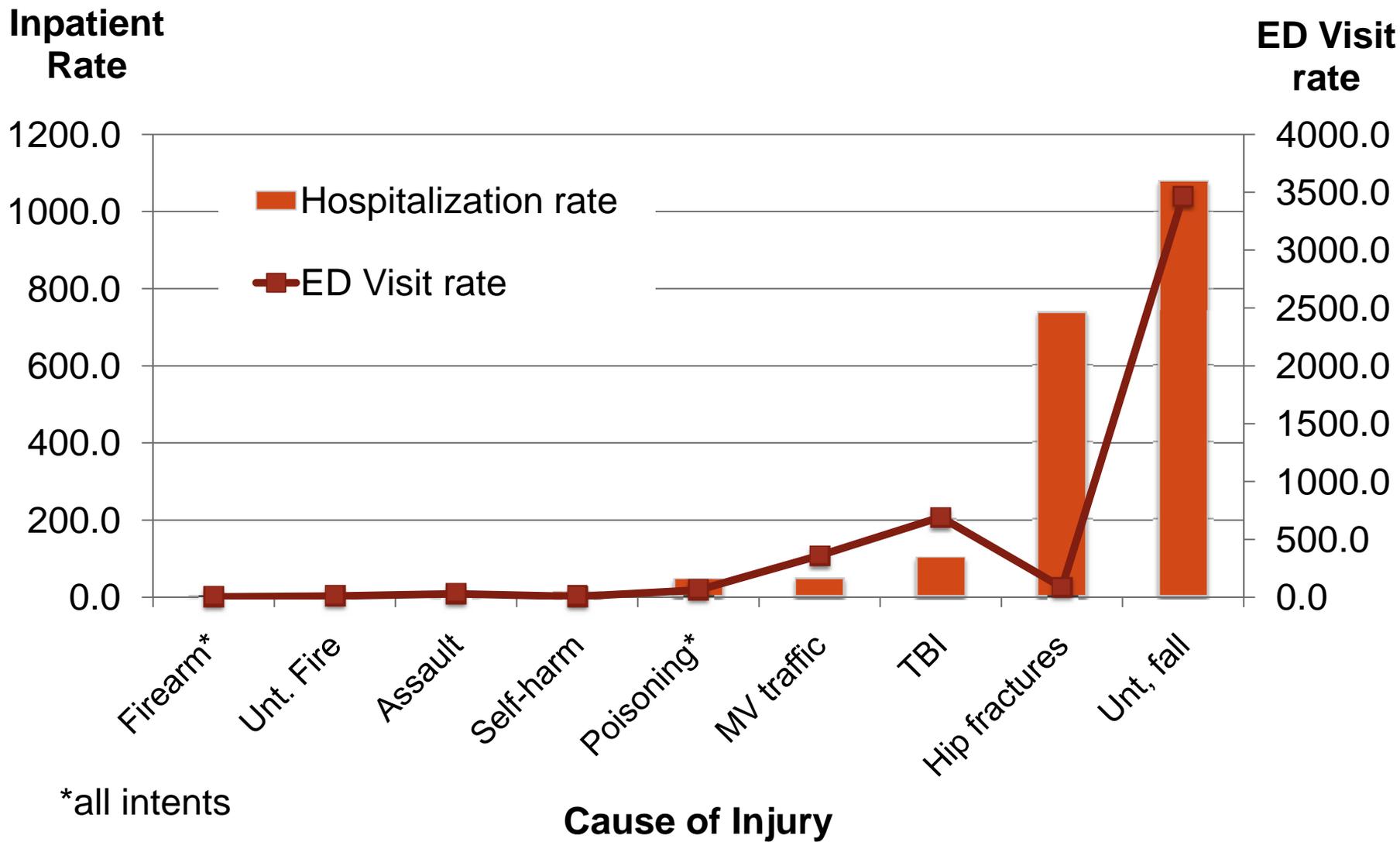
**50 Percent growth in 65 years and older from 2010-2030**

# **Falls in Comparison to Other Injuries**

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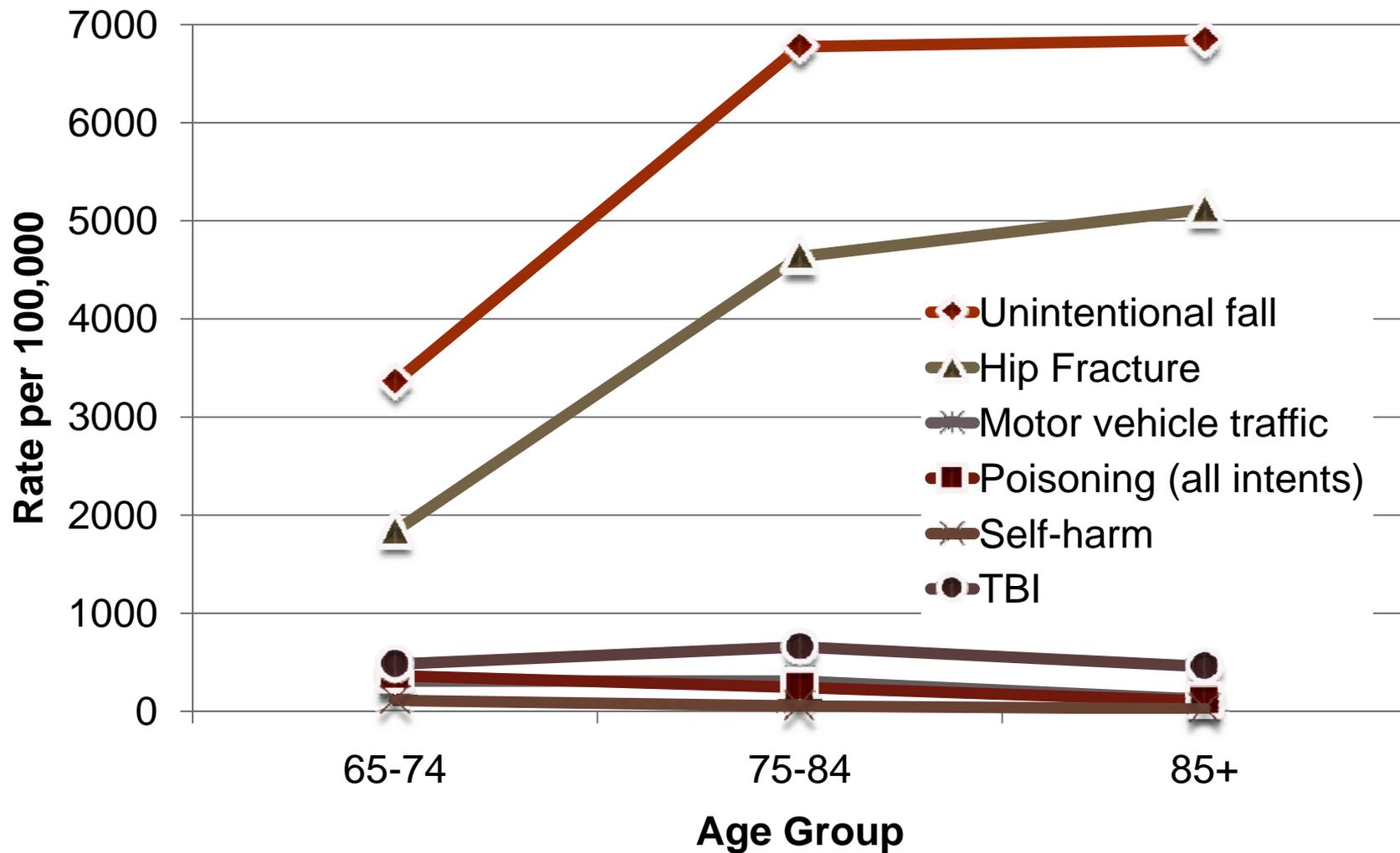
# ED visit and inpatient discharge rates<sup>1</sup> (per 100,000), for leading causes of injury, ages 65+, Ohio, 2008

<sup>1</sup>Source: Ohio Hospital Association



# Inpatient discharge rates<sup>1</sup> per 100,000 for leading causes of injury by age group, ages 65+, Ohio, 2008

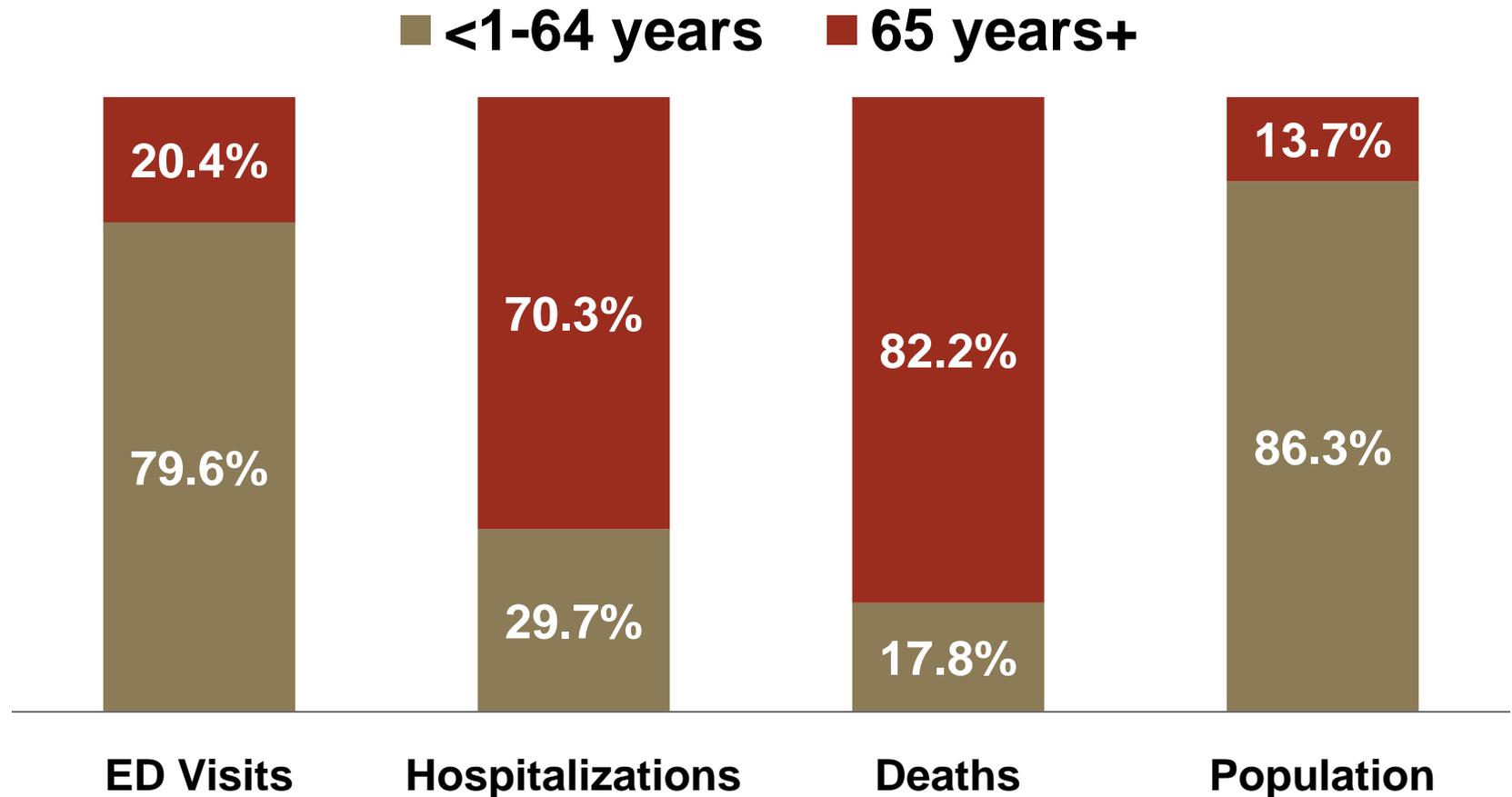
<sup>1</sup>Source: Ohio Hospital Association



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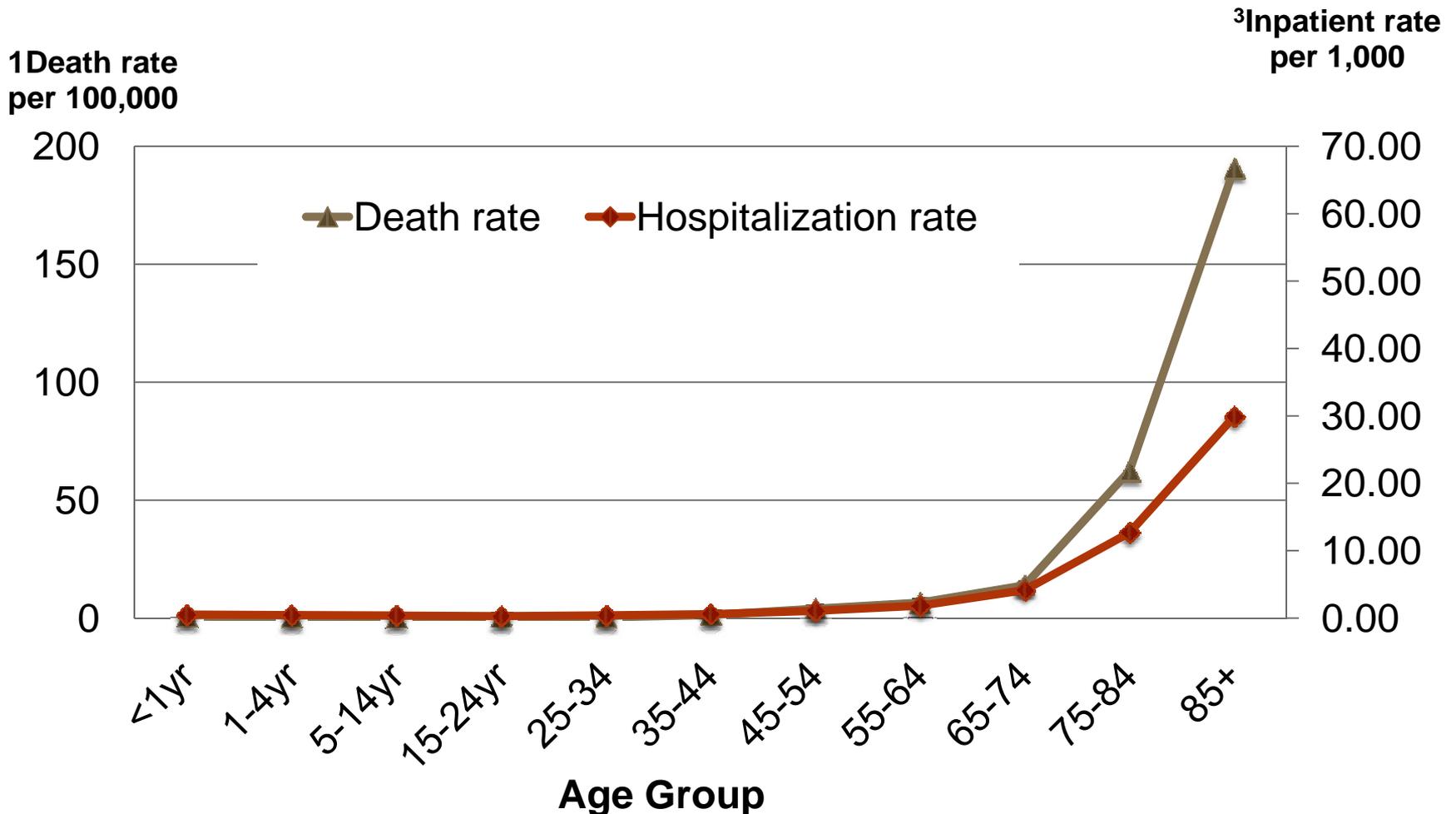
**Disproportionate Burden  
Among Older Adults  
and  
Gender Comparisons**

# Proportional distribution of Ohio population<sup>1</sup>, vs. fall-related ER visits<sup>2</sup>, inpatient discharges<sup>2</sup> and deaths<sup>3</sup>, by age group, 2008



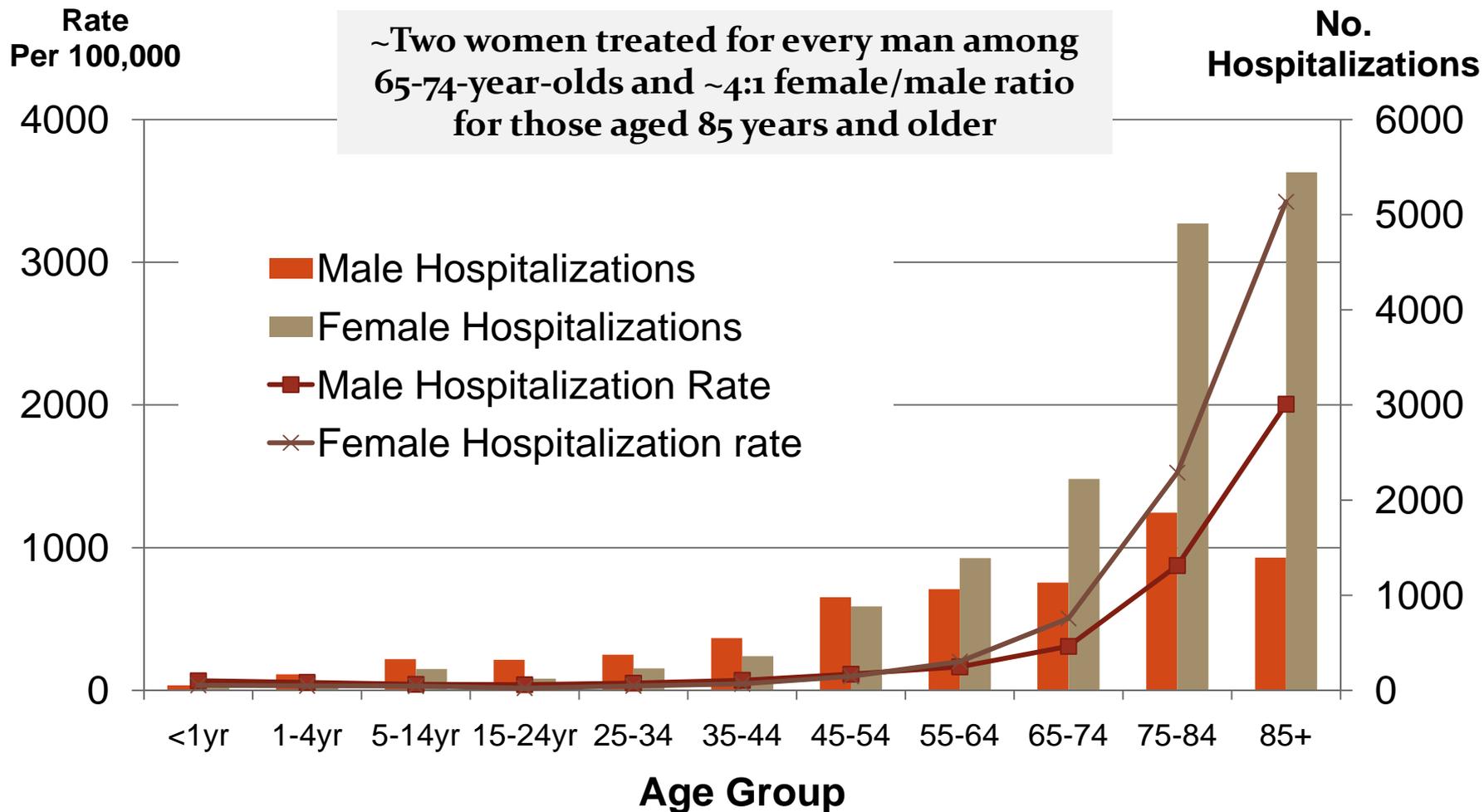
Sources: <sup>1</sup>US Census; <sup>2</sup>Ohio Hospital Association; <sup>3</sup>ODH, Office of Vital Statistics

# Fall-related Death<sup>1,2</sup> Inpatient<sup>3,4</sup> and ED visit<sup>3,4</sup> rates by age group, Ohio, 2008



Sources: 2 Ohio Hospital Association, 4 ODH, Office of Vital Statistics

# Fall-related inpatient hospitalizations and hospitalization<sup>1</sup> rates<sup>2</sup>, by age group, sex, Ohio, 2008



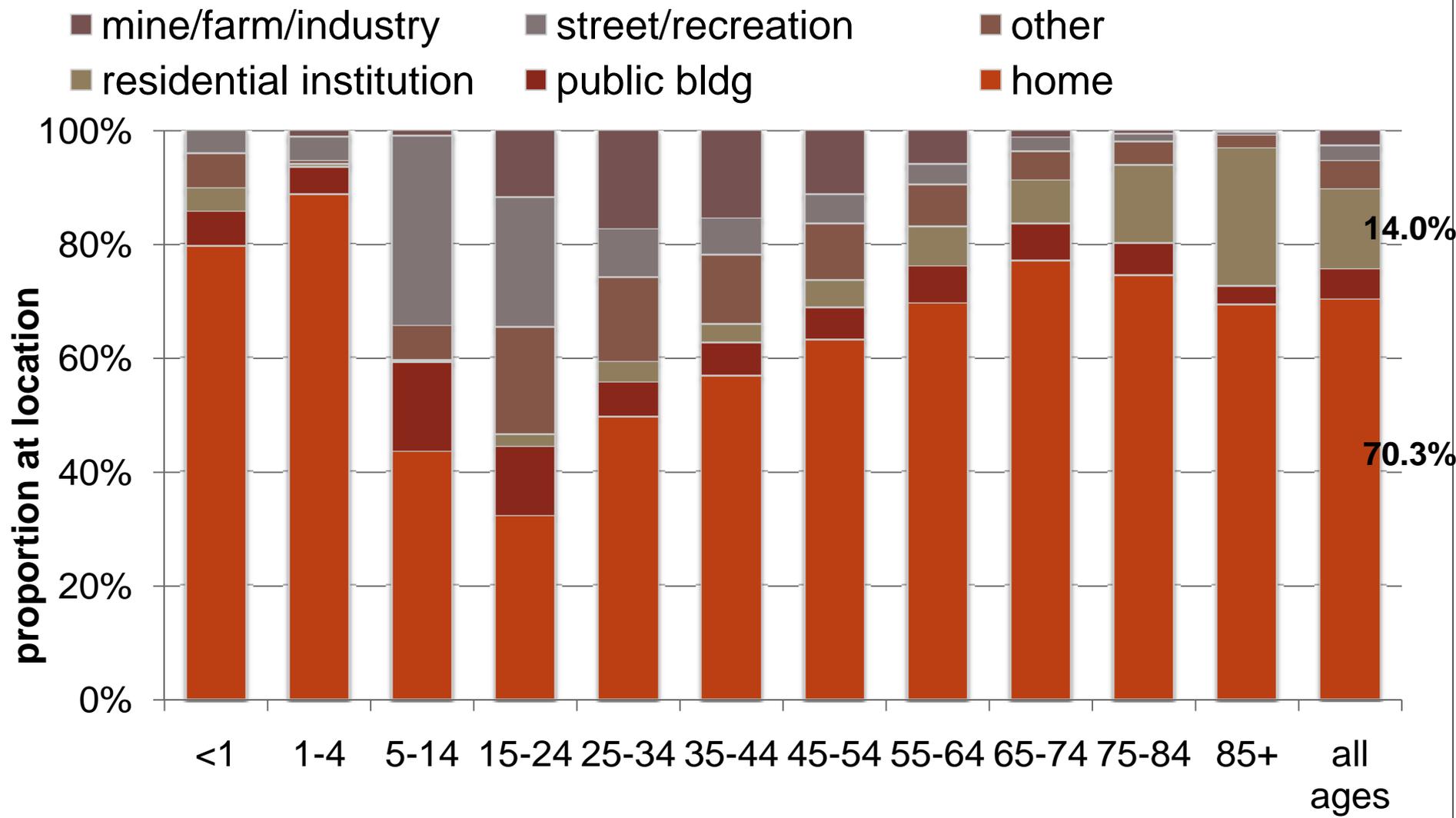
<sup>1</sup>Source: Ohio Hospital Association

<sup>2</sup>per 100,000

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# **Location and Types of Falls Among Older Adults**

# Proportional distribution of location of fall<sup>1</sup> for inpatient discharges<sup>2</sup>, by age group, Ohio, 2002-05

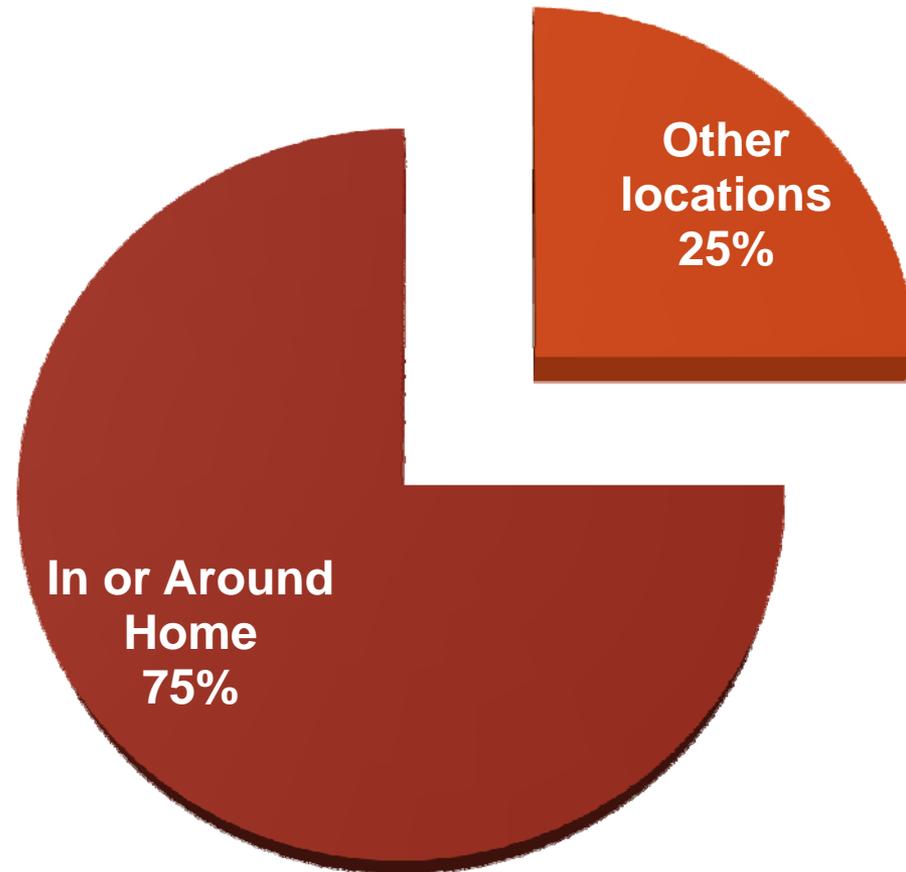


<sup>1</sup>among those with known location

**age group**

<sup>2</sup>Source: Ohio Hospital Association

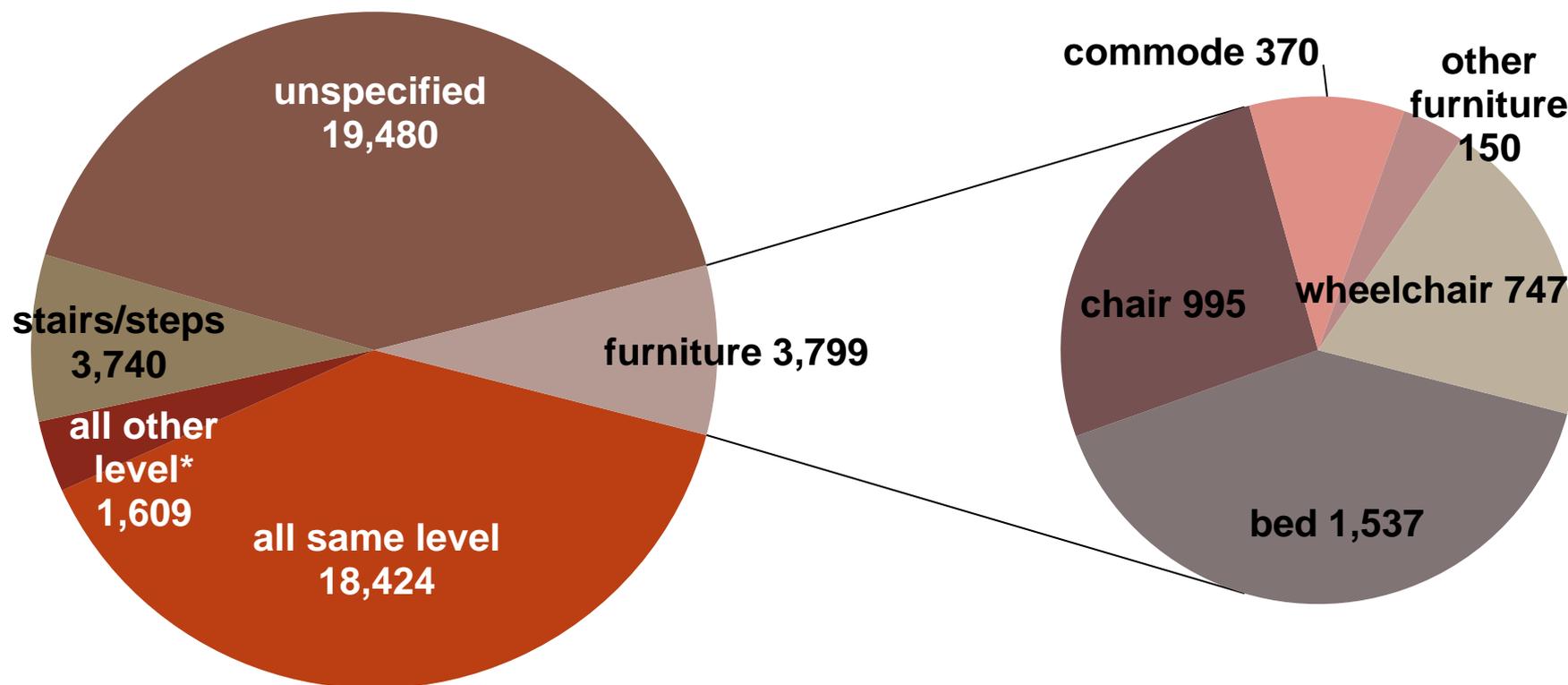
# Location of Falls among Older Adults<sup>1,2</sup>



<sup>1</sup>among those with known location

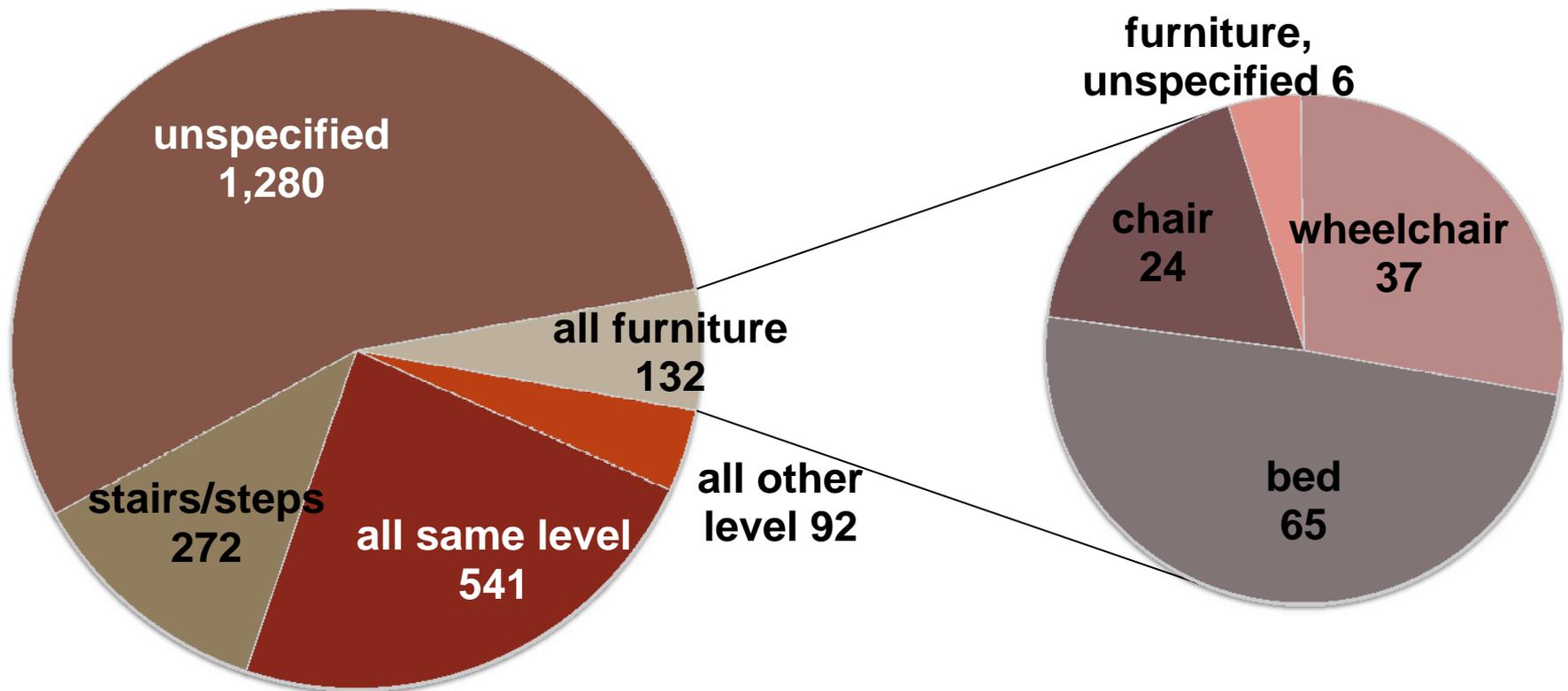
<sup>2</sup>Source: Ohio Hospital Association

# Proportion of fall-related HIDs<sup>1</sup> by type of fall, ages 65 and older, Ohio, 2002-05



<sup>1</sup>Source: Ohio Hospital Association

# Proportion and number of fatal falls<sup>1</sup> by type of fall, ages 65 and older, Ohio, 2002-05

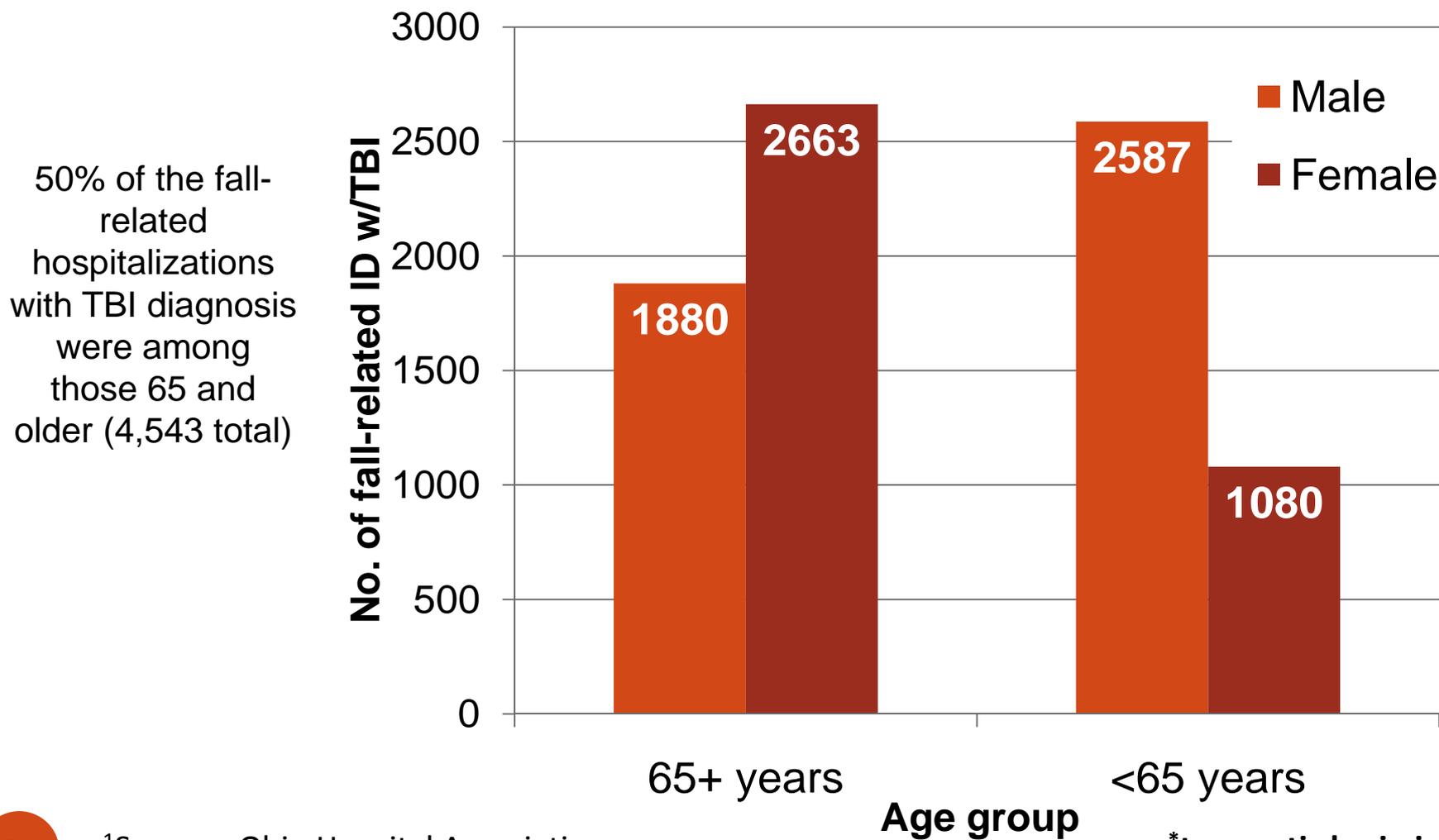


<sup>1</sup>Source: ODH Office of Vital Statistics

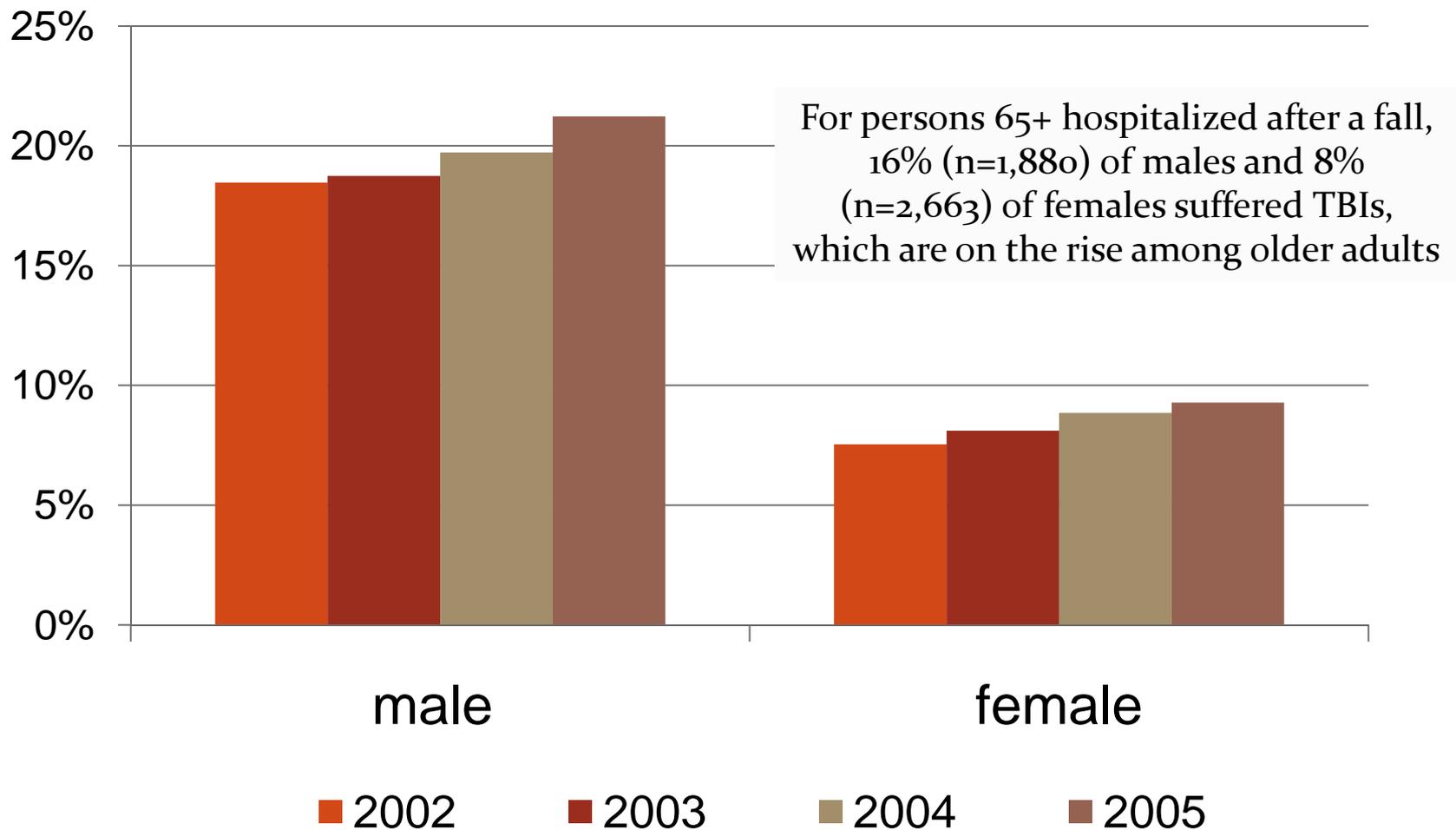
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# **Fall-related Injuries and Consequences/Severity among Older Adults**

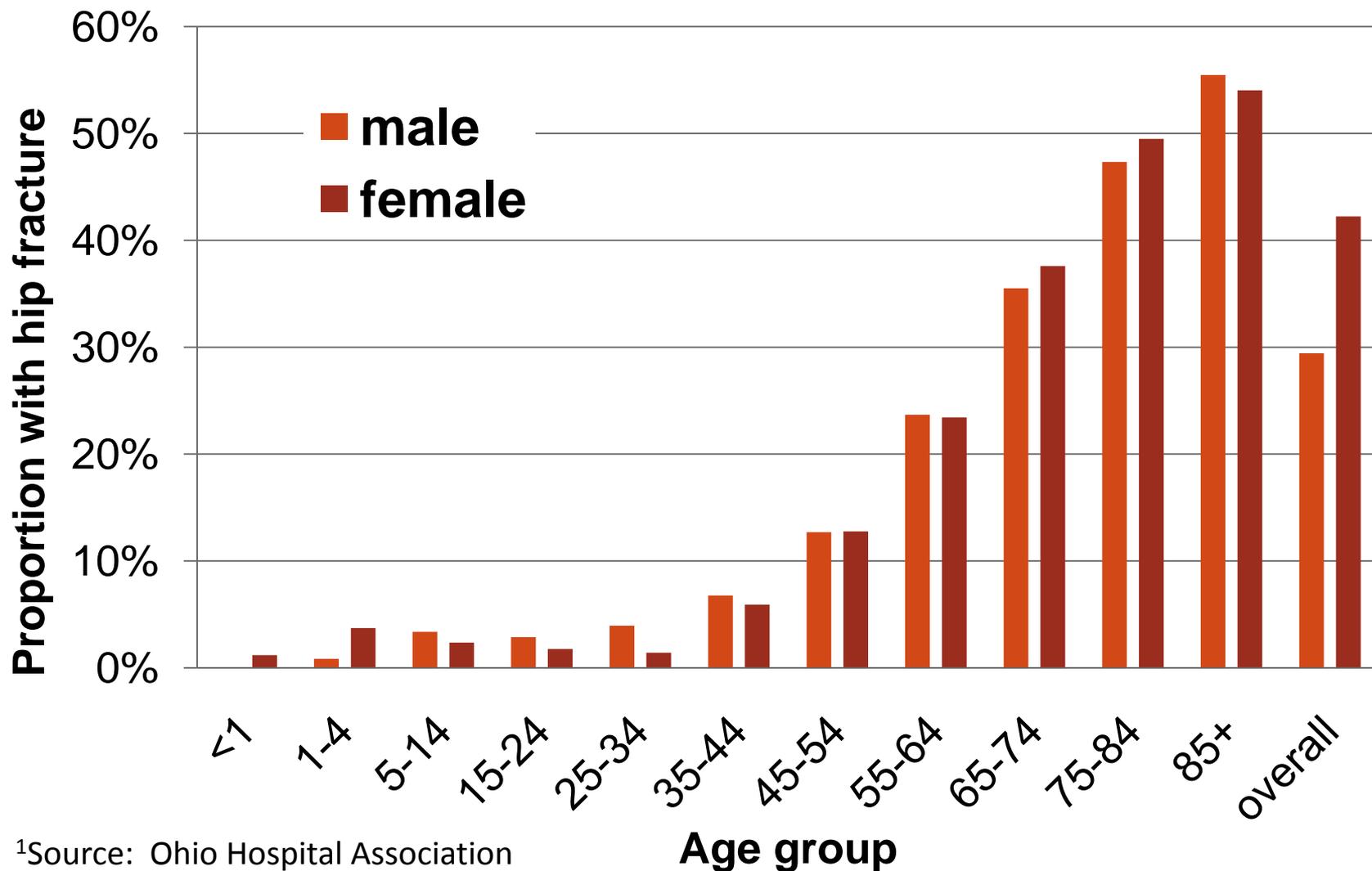
# No. of fall-related HID with TBI\* of Ohio residents, by sex, age group, 2002-2005



# Proportion of fall-related discharges who suffered a TBI\*, by gender, year, 2002-05



# Proportion of discharged fallers<sup>1</sup> who suffered a hip fracture, by age group, sex, Ohio, 2002-05



<sup>1</sup>Source: Ohio Hospital Association

# Falls and Hip Fractures\*

- Older adults account for more than 90 percent of all fall-related hip fractures.
- Hips were the bones most frequently fractured during a fall. In Ohio, more than 25,000 fall-related hip fractures occurred from 2002 to 2005.
- Overall, 63.5 percent of all hip fractures among those 65 and older were associated with a fall.
- Nearly half (48.7 percent) of fall-related discharges among those 65 and older had a hip fracture.
- Women are disproportionately susceptible to hip fractures: from 2002-2005, 75 percent of hip fracture hospitalizations were among women (n=26,793). Biological factors such as osteoporosis that increase the risk of injury after a fall may play a role.

\*Source: Ohio Hospital Association

# Falls and Hip Fractures\*

- As many as 20 percent of hip fracture patients die within a year of their injury.<sup>41</sup>
- Most patients with hip fractures are hospitalized for about one week.
- Up to 25 percent of adults who lived independently before their hip fracture have to stay in a nursing home for at least a year after their injury.<sup>42</sup>
- There were 6,711 (29 percent) male fallers discharged during 2002-05 who fractured their hip and nearly three times as many females: 18,605 (42 percent).

\*Source: CDC

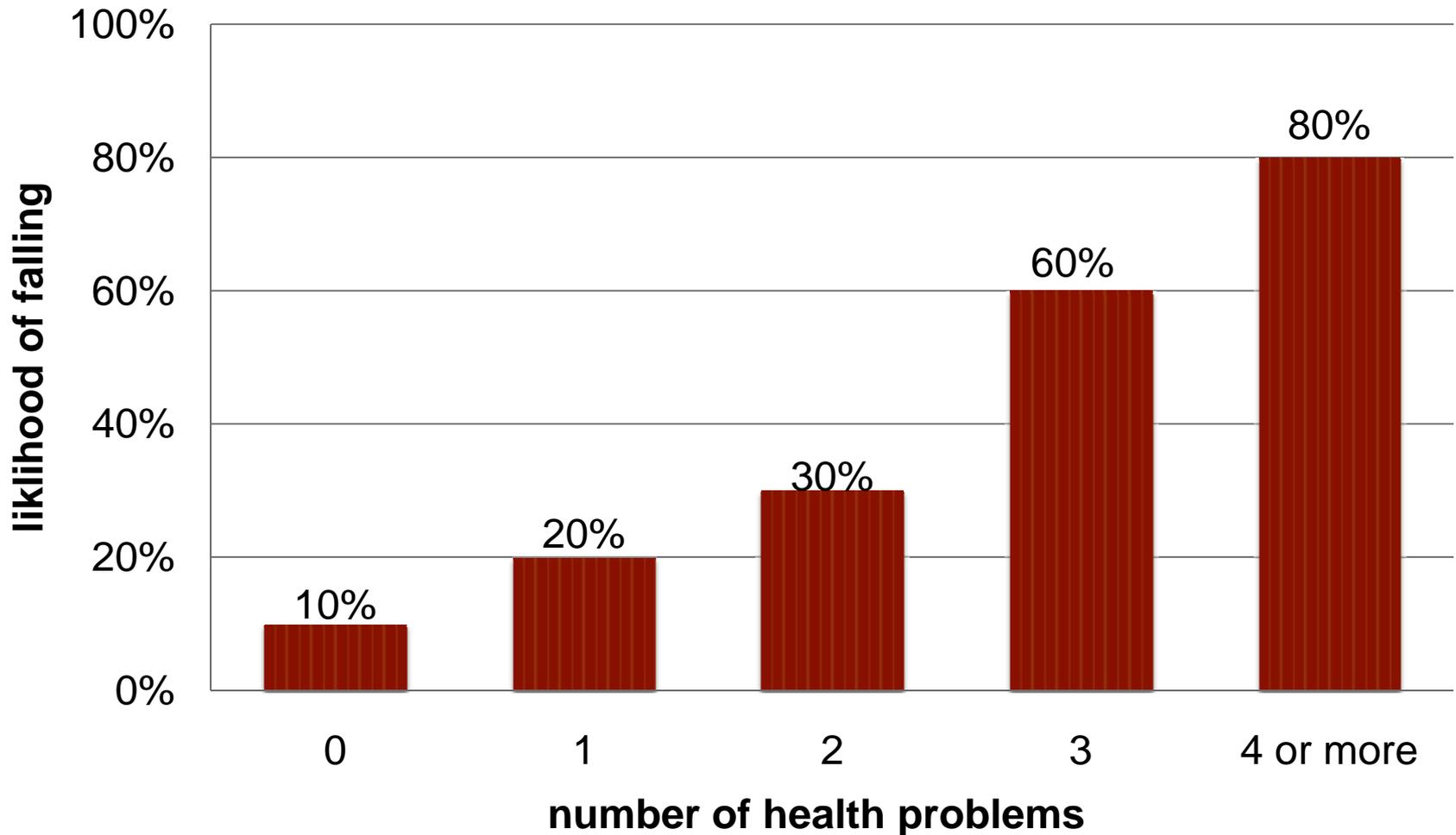
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# Fall Risk Factors and Self-report Falls Data

# Fall Risk Factors

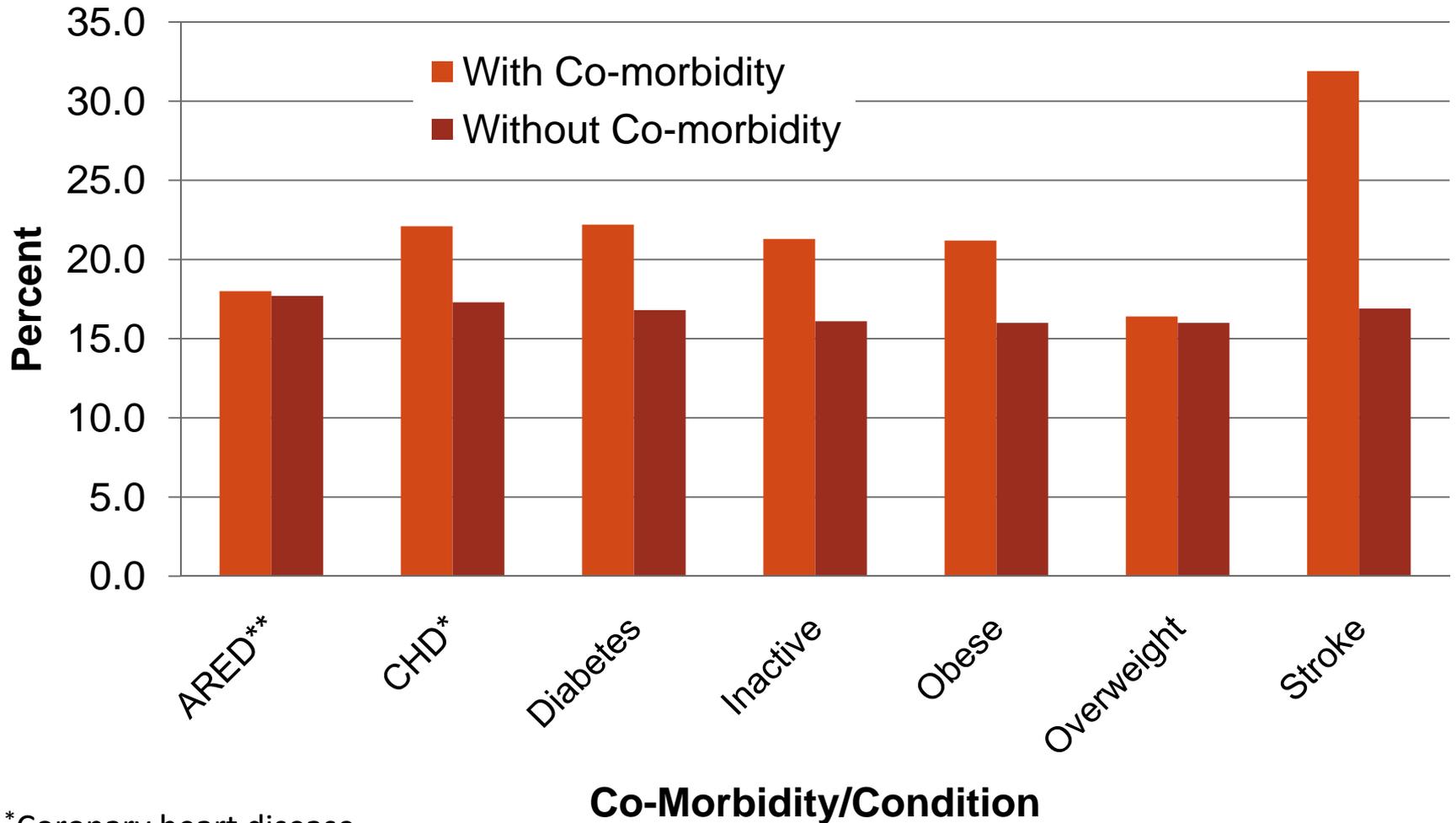
- **Co-morbidities –**
  - Lower limb arthritis
  - Osteoporosis
  - Stroke/heart disease
  - Cancer
  - Diabetes
  - Eye diseases
  - Obesity
- Vision problems.
- Inappropriate footwear.
- Physical inactivity.
- Fear of Falling
- Impaired balance and coordination.
  - Gait instability, slow walking speed.
- Medication interactions (polypharmacy).
- Impaired cognitive function.
- Use of alcohol/other drugs.
- Hazardous home environment.
- Living alone/social isolation.
- History of previous falls.

# Number of health problems and risk for falling among adults age 65 and older<sup>1</sup>



<sup>1</sup>Source: Tinetti et al.,1988

# Estimated prevalence (%) of falls in the last 3 months among residents age 45 and older with selected co-morbidities and/or conditions, Ohio, 2010<sup>1</sup>



\* Coronary heart disease

\*\* Age-related eye disease

<sup>1</sup>Source: 2010 Ohio BRFSS

# Summary of Key Points

- Older adults accounted for more than 90% of all fall-related hip fractures.
- Fall-related emergency room-visit and inpatient hospitalization rates are higher for falls than all other injuries combined among older adults.
- Older adults accounted for \$4.2 billion, 68% of the total annual costs of nonfatal, hospital-admitted falls...and \$4.7 billion for fatal and hospital-admitted.
- In 2009, older adults accounted for 82% of fall-related deaths and represented only 14 percent of the population.
- The 367 deaths in 2002 increased to 827 in 2009, representing a 125% increase.

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# OHIO INJURY PREVENTION PARTNERSHIP (OIPP)





## OHIO INJURY PREVENTION PARTNERSHIP

- The **Ohio Injury Prevention Partnership (OIPP)** is a statewide group of professionals representing a broad range of agencies and organizations concerned with the prevention of injury.
- Members work to provide a coordinated statewide effort for injury prevention programming.



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**OHIO INJURY PREVENTION**  
**PARTNERSHIP**

***Mission:***

To prevent injuries in Ohio using data and collaborative partnerships.

***Vision:***

Working together to create a safe and injury free Ohio.



## OHIO INJURY PREVENTION PARTNERSHIP

- Coordinated by the Ohio Department of Health (ODH) with funds from the Centers for Disease Control and Prevention (CDC).
- Advises and assists ODH and ODH's Violence and Injury Prevention Program (VIPPP) with establishing priorities and future program direction.

# OIPP Membership



## *Membership:*

- No cost to join
- Complete brief member agreement form

## *Benefits:*

- Networking
- Injury Data Products
- Injury Prevention Resources
- Injury Prevention Advocacy

# Current OIPP Injury Priorities

- **Falls among Older Adults**
- Prescription Drug Misuse, Abuse and Overdose
- Child Injury
  - Motor vehicle traffic
  - Falls
  - Asphyxiation (suffocation, drowning, choking)
  - Violence (suicide, youth violence, child maltreatment)



**OHIO INJURY PREVENTION**  
**PARTNERSHIP**



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## OHIO INJURY PREVENTION PARTNERSHIP

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*Older Adults Falls Prevention Coalition*



### Accomplishments and Current Activities:

- Produced a *State Plan to Address Falls Among Older Adults*.
- Developed a website.
- Planning regional meetings to implement plan.
- Promoting evidence-based programs and policies.
- Participating in *National Falls Prevention Awareness Day*.



Healthy Lifestyles

Prevention

Health Equity

About Us

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Burden of Injury in Ohio

Injury Data and Publications

Injury Prevention Resources

Program Initiatives

Ohio Injury Prevention Partnership

## Ohio Violence and Injury Prevention Program



Drug Poisoning



Falls Among Older Adults



Child Injury

**“Injury is probably the most under recognized major public health problem facing the nation today, and the study of injury represents unparalleled opportunities for reducing morbidity and mortality and for realizing significant savings in both financial and human terms—all in return for a relatively modest investment.”**

*Injury Prevention: Meeting the Challenge, The National Committee for Injury Prevention and Control. New York: American Journal of Preventive Medicine, 1989, p. 1.*

### What's New?

- [Preventive Health and Health Services Block Grant in FY12](#)
- [Preventive Health and Health Services Block Grant in Addressing Prescription Drug Abuse](#)

# How can I get involved?



Contact the Ohio Department of Health  
Injury Prevention Program at **614-466-2144**

or

<http://www.healthyohioprogram.org/vipp/oipp/oipp.aspx>

Or

Email [christy.beeghly@odh.ohio.gov](mailto:christy.beeghly@odh.ohio.gov)

