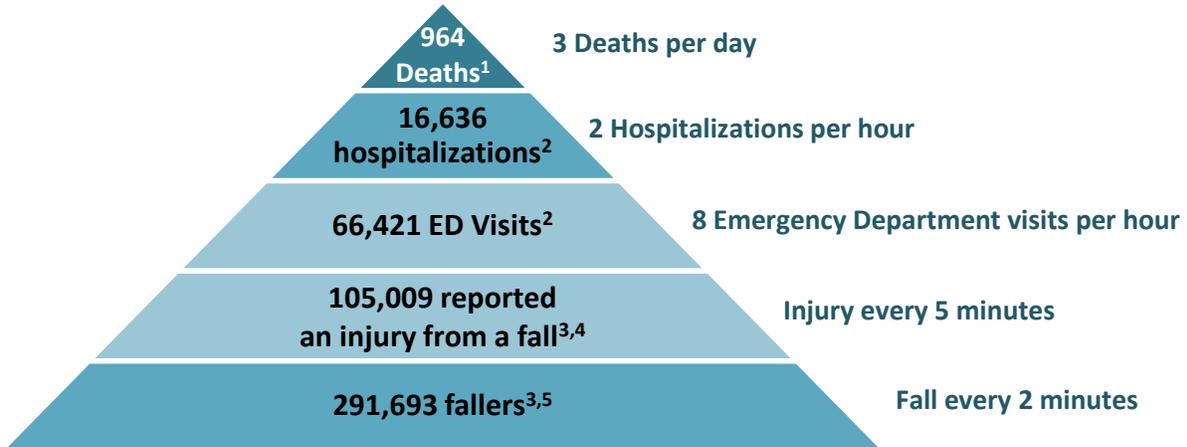




# FALL-RELATED INJURY AMONG OLDER ADULTS IN OHIO

Falls are particularly harmful to older adults. Falls and fall-related injury seriously affect older adults' quality of life and present a substantial burden to the Ohio health-care system. They surpass all other mechanisms of injury as a cause of ED visits, hospitalization and death. The following data provide clear justification of the need for fall prevention efforts.

**Figure 1. Number of fall-related deaths,<sup>1</sup> Hospitalizations,<sup>2</sup> ED visits,<sup>2</sup> and self-reported injured fallers<sup>3,4</sup> And self-reported fallers,<sup>3,5</sup> for ages 65 and older, Ohio, 2010**



<sup>1</sup>Source: ODH Office of Vital Statistics, 2010 data <sup>2</sup>Source: Ohio Hospital Association, 2010 data <sup>3</sup>Source: BRFSS Survey, 2010  
<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

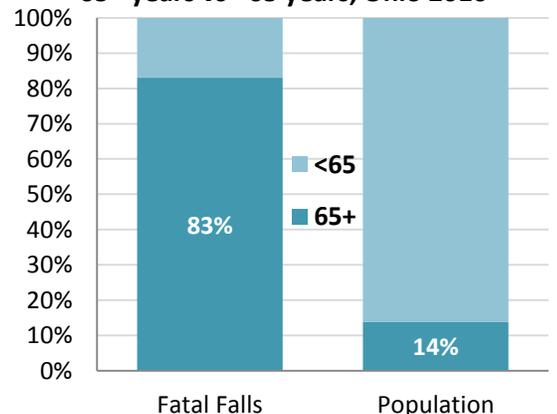
## Fatal and medically-treated falls represent only a proportion of all falls among older adults. Falls have significant consequences on quality of life.

- As reported in the 2010 Behavioral Risk Factor Surveillance Survey (BRFSS) results, 17.3% of Ohio respondents aged 65 and older indicated that they fell during the previous three months, projecting to a total of approximately 291,693 persons who suffered at least one fall. More than one-third of those who fell (34%), or an estimated 105,009 older Ohioans, reported sustaining an injury that resulted in a doctor visit or restricted activity (*Figure 1*).
- The psychological consequences of any fall, whether injury-causing or not, can be severe, resulting in fear and decreased quality of life from self-imposed restriction of activities, social isolation and depressive symptoms. These "near-miss" falls can increase risk for future falls if they are not adequately assessed and managed by a health care professional.

## Older adults are disproportionately affected by fall-related injury.

- Falls are the leading cause of injury-related ED visits, hospitalizations and deaths for Ohioans aged 65 and older.<sup>1,2</sup> Fall-related ED visit and hospitalization rates for Ohioans 65 years and older are higher than rates for all other injuries combined.<sup>1</sup>
- Ohioans 65 and older accounted for approximately 83% of fatal falls in 2010; while they represent only 14% of the population (*Figure 2*.)
- Risk for suffering serious injury after a fall increases dramatically with advancing age (*Figure 7*). Females 85 years and older account for half of fatal falls, while they account for only 3% of the female population.<sup>1</sup>

**Figure 2. Distribution of fatal falls compared to population by age group, 65+ years vs <65 years, Ohio 2010<sup>1</sup>**

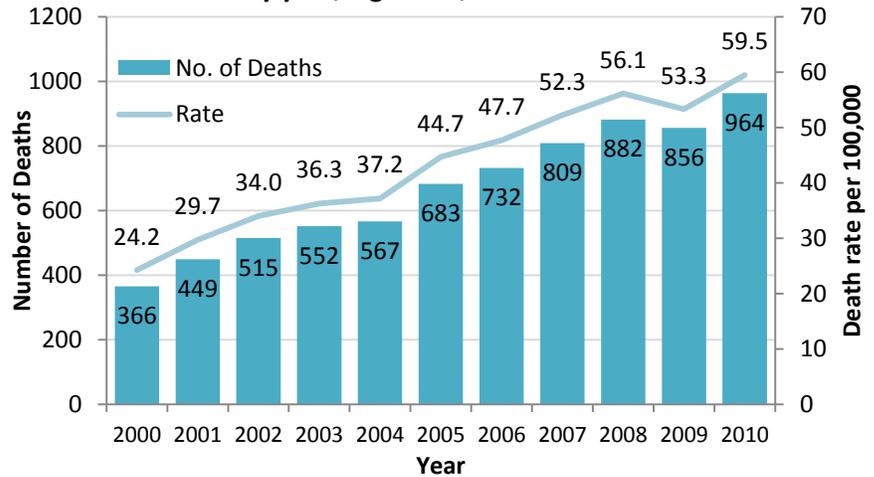


1 Source: ODH Office of Vital Statistics

# FALL-RELATED INJURY AMONG OLDER ADULTS IN OHIO

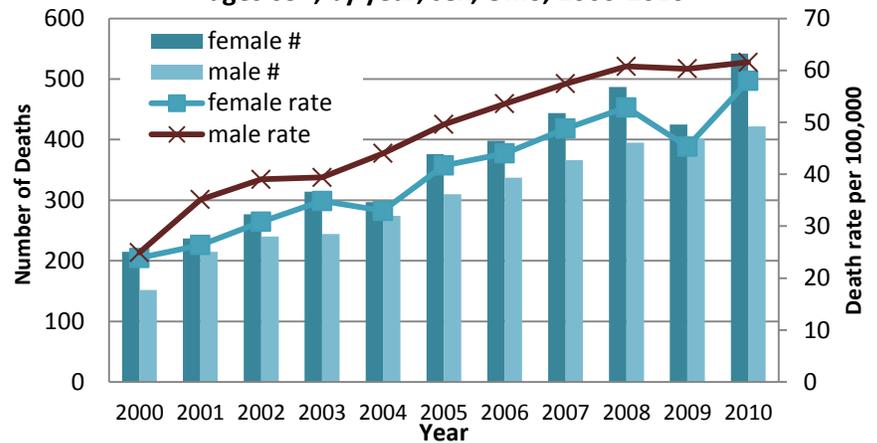
- Falls among older adults have reached epidemic proportions and rates continue to rise.
- From 2000 to 2010, Ohioans aged 65 and older experienced a 163% increase in the number of fatal falls and 145% increase in the fall death rate (Figure 3).
- On average, 2.6 older Ohioans suffered fatal falls each day in 2010 (Figure 3).

**Figure 3. Annual number and rate per 100,000 of fatal falls by year, ages 65+, Ohio 2000-2010<sup>1</sup>**



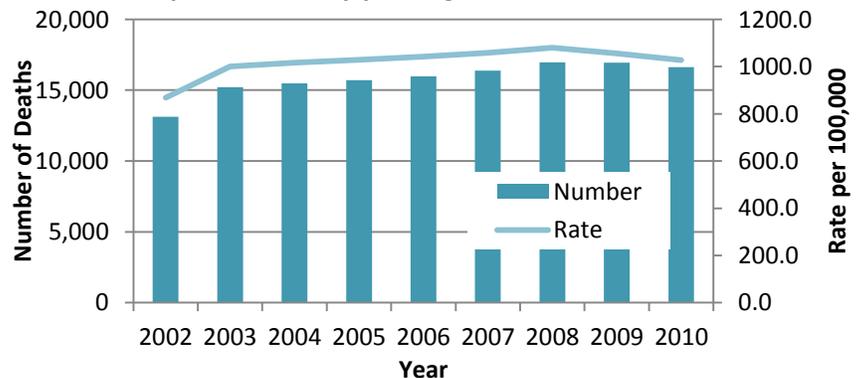
- Older males are at greater risk for suffering a fatal fall, even though there are a greater number of fatal falls among older females (Figure 4).
- Older females have higher non-fatal fall-related injury rates than males (Figure 7).

**Figure 4. Number and rate per 100,000 of fatal falls, ages 65+, by year, sex, Ohio, 2000-2010<sup>1</sup>**



- In 2010, there were 4.1 fall-related ED visits for every 100 Ohio older adults (data not shown) and 10 fall-related hospitalizations for every 1,000 Ohio older adults (Figure 5).
- Fall-related hospitalizations and hospitalization rates increased 27% and 18% respectively from 2002 to 2010 (Figure 5).

**Figure 5. Number and rate per 100,000 of fall-related hospitalizations by year, ages 65+, Ohio, 2002-2010<sup>2</sup>**



<sup>1</sup>Source: Ohio Department of Health, Office of Vital Statistics

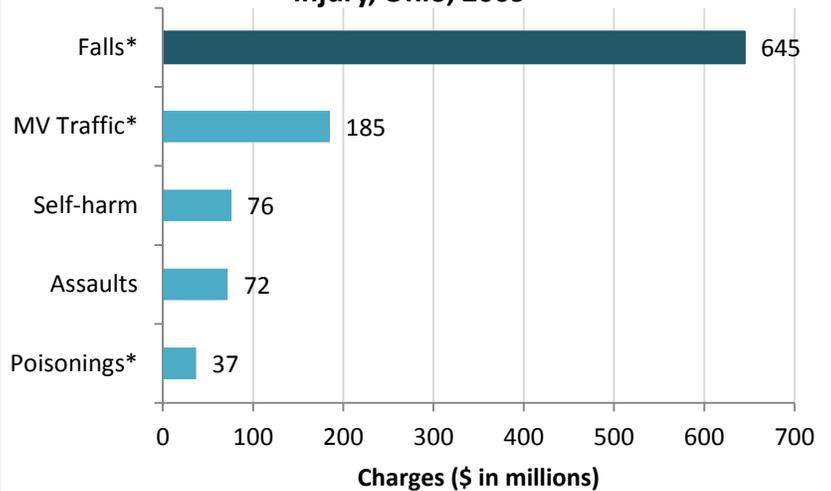
<sup>2</sup>Source: Ohio Hospital Association

# COSTS ASSOCIATED WITH FALL-RELATED INJURY AMONG OLDER OHIOANS

## Falls are Costly!

- In 2009 in Ohio, direct treatment charges for fall-related hospitalizations totaled \$645 million. These charges represent nearly two-thirds (63%) of the \$1 billion in charges for the five leading causes of injury combined (*Figure 4.*)
- Direct medical costs represent only a fraction (8%) of the total cost of falls among older adults in Ohio - **\$4.2 billion** in 2003 (*Table 1*).
- 63% of hip fractures and 26% of traumatic brain injuries (TBIs) in 2009 in Ohio resulted from falls (data not shown).<sup>1</sup>

**Figure 6. Total charges (in millions) for inpatient treatment of leading causes of injury, by type of injury, Ohio, 2009<sup>1</sup>**



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

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

	65+ yrs Total	Percent of All	Percent of Ohio population
<b>Incidence of Fall-related Hospital Admissions</b>	<b>19,137<sup>2</sup></b>	<b>71%</b>	<b>14%</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>	

<sup>1</sup>Source: Children's Safety Network Economics & Data Analysis Resource Center, <sup>2</sup>incidence based on HCUP survey data

## The likelihood of falling and the severity of fall-related injury increases with age, and therefore the risk for hospitalization and death.

- Average age increases when comparing fall-related ED visits (38 years), inpatient hospitalizations (70 years) and deaths (76 years). Younger Ohioans are more likely to be treated in an ER for fall-related injuries and not to require an overnight stay in the hospital.<sup>1</sup>
- Average length of stay in days also increases with age.<sup>1</sup>
- More than 90 percent of fall-related hip fractures occur among those 65 years and older, and approximately 40 percent of fall-related inpatient hospitalizations among those 65 and older involved a hip fracture.<sup>1</sup>
- Ohio's 65+ population is projected to increase by 100 people per day for the next 14 years.

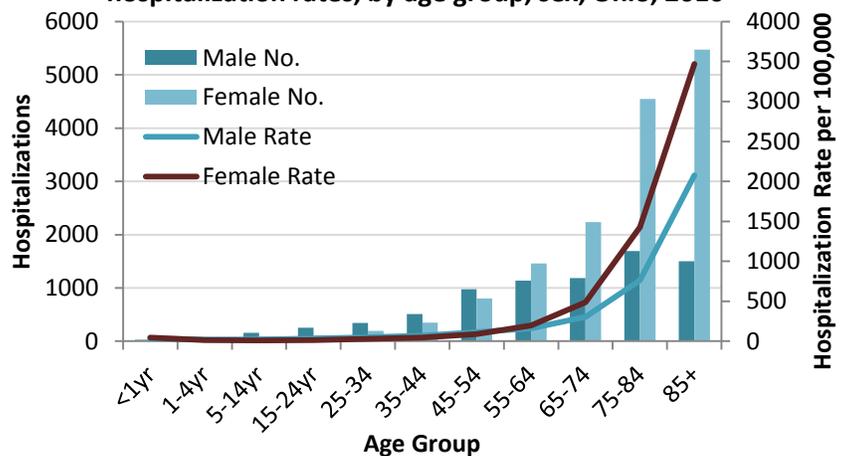
<sup>1</sup>Source: Ohio Hospital Association

# FALL-RELATED INJURY AMONG OLDER OHIOANS

## Older females have higher risk for non-fatal fall-related injury.

- In 2010 hospitalization rates ranged from lows of 11.4 per 100,000 for females aged 5-14 to highs of 3,469 per 100,000 for females 85 and older (Figure 7).
- From ages 65 and older, female risk for fall-related injury skyrockets, with the disparity between male and female rates widening with advancing age. In numbers of fall-related hospitalizations, there were 1.9 women treated for every man among 65-74-year-olds and there was a 3.6 to 1 female/male ratio for those aged 85 years and older (Figure 7).

Figure 7. Average annual fall-related inpatient hospitalization rates, by age group, sex, Ohio, 2010<sup>1</sup>

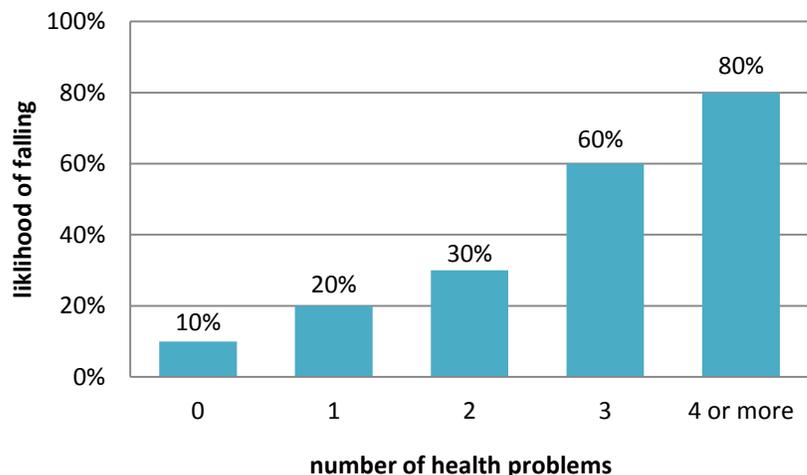


<sup>1</sup>Source: Ohio Hospital Association

## Older adults with poor health status and those who are isolated are at greater risk.

- The number of health problems and the risk of falling increase proportionately (Figure 8).
- BRFSS respondents with diabetes, stroke as well as those using special equipment and having a sedentary lifestyle had a higher prevalence of falls in the past three months than those without (Ohio BRFSS Survey 2010).
- Social isolation is a risk factor for fatal falls. Married elders are significantly less likely to die from a fall than the unmarried (ODH Office of Vital Statistics).

Figure 8. 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

## Additional resources for prevention of falls among older adults are needed.

Due to the large and growing burden of fall-related injury in Ohio, especially among older Ohioans over 65 years, additional resources are needed at both the state and local level to implement evidence-based prevention initiatives.

**Falls are not a normal part of aging.** There are simple steps that older adults can take to reduce their risk for a fall. Additional resources including checklists and brochures are available from the CDC at:

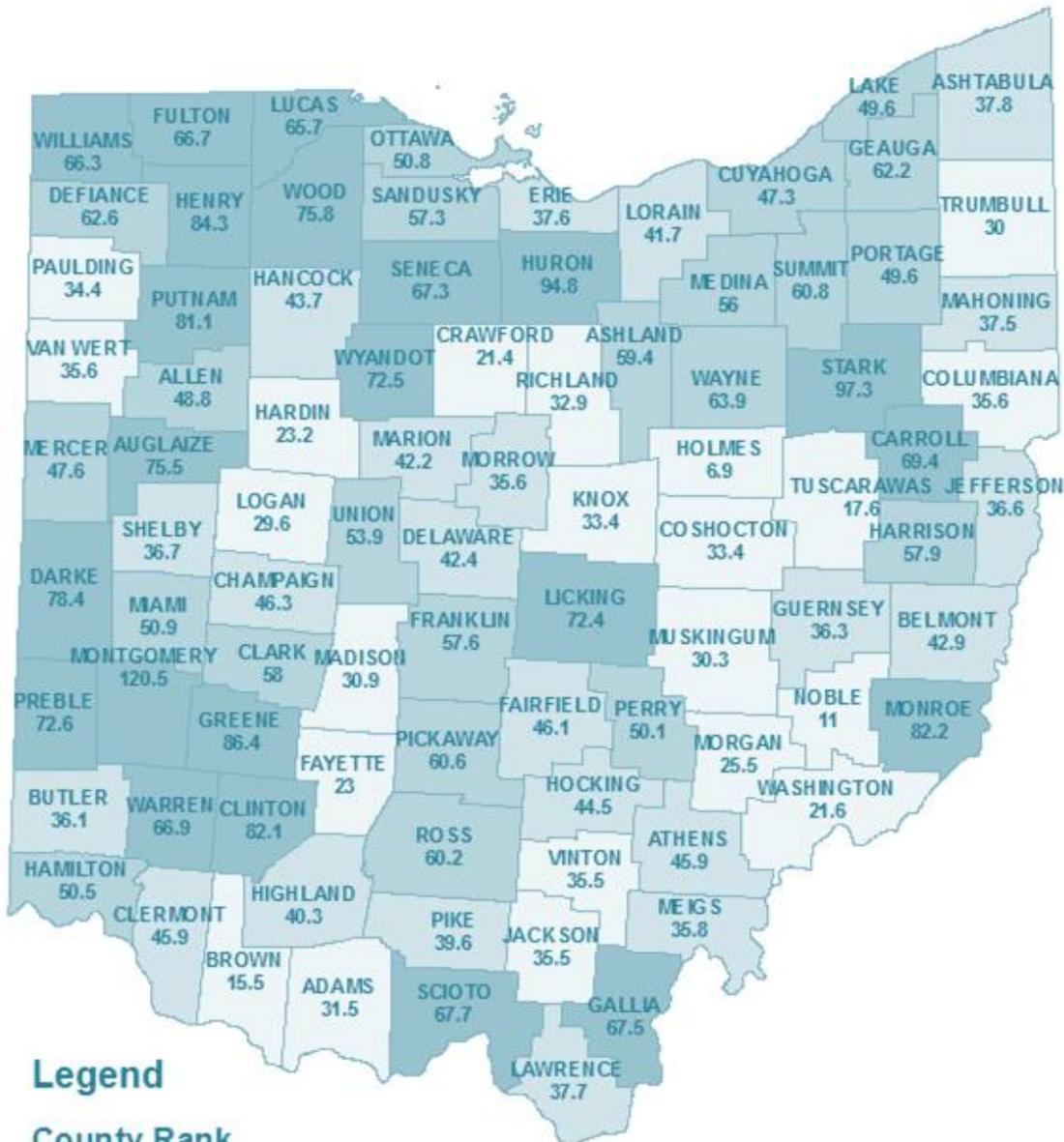
<http://www.cdc.gov/ncipc/duip/preventadultfalls.htm>

Produced by Ohio Department of Health, Office of Healthy Ohio, Violence and Injury Prevention Program

<http://www.odh.ohio.gov/odhprograms/hpr/injprev/ovipp.aspx>

# FALL-RELATED INJURY AMONG OLDER ADULTS IN OHIO

## Fall fatality rates among ages 65+ by county, Ohio, 2008-2010



### Legend

#### County Rank

- Lowest Quartile
- 2nd Lowest Quartile
- 2nd Highest Quartile
- Highest Quartile

