North Carolina

Special Emphasis Report: Fall Injuries among Older Adults 2005-2014

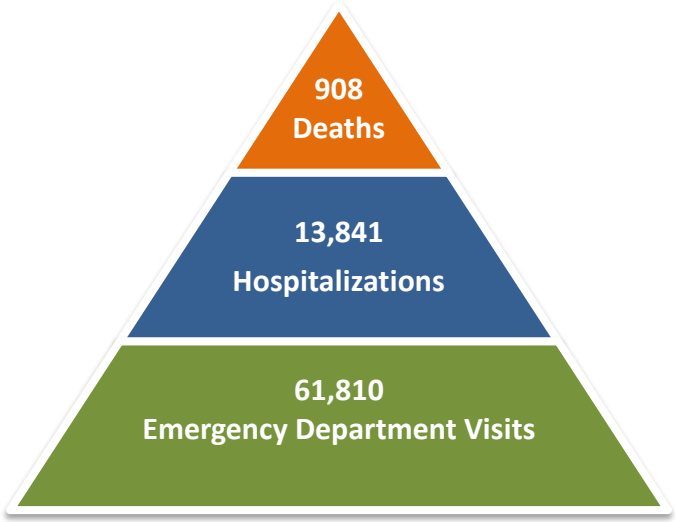
A GROWING CONCERN

Unintentional falls among older adults are a leading cause of fatal and nonfatal injury in the U.S. and North Carolina. Hospital costs associated with injuries sustained by falls account for a substantial share of health care dollars spent on injury-related care.

In 2014, 908 North Carolina residents ages 65 and older died and over 75,000 fall injuries were treated at hospitals and emergency departments (Figure 1).

This report provides recent data on unintentional fall injuries and deaths among North Carolina residents ages 65 and older. It includes information about groups with the highest rates, associated costs and current prevention strategies and activities in North Carolina.

FIGURE 1. Burden of Fall Injuries among Residents Ages 65 and older—North Carolina, 2014



QUICK FACTS

Residents ages 65 and older account for **88% *of all fall deaths*** and 73% of nonfatal fall hospitalizations in North Carolina.

Falls are a ***leading cause of traumatic brain injury (TBI)*** in North Carolina residents ages 65 and older, accounting for 36% of TBI deaths and 43% of TBI hospitalizations. **Eighty-four percent of fall deaths** and 69% of hospitalizations among older adults were associated with a TBI.

Projected lifetime costs associated with fall injuries in 2014 among North Carolina residents ages 65 and older are estimated to be almost $1.4 billion**.**

Each week, there are 1,189 emergency department visits among residents ages 65 and older, 266 hospitalizations, ***and 17 deaths due to fall injuries*** **in North Carolina**.

In 2014, 58% fall deaths among this age group ***occurred in the home***, less than 1% occurred in a residential facility such as a nursing home. The location wasn't known for 12%.

This document was produced in conjunction with CDC's Core Violence and Injury Prevention Program Under Cooperative Agreement 11-1101.

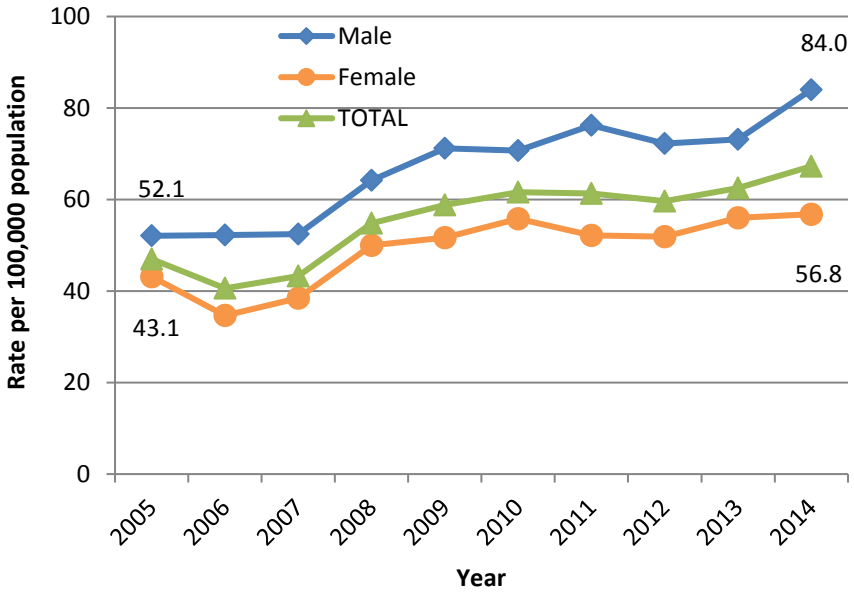
Released October 2016

North Carolina

Special Emphasis Report: Fall Injuries among Older Adults 2005-2014

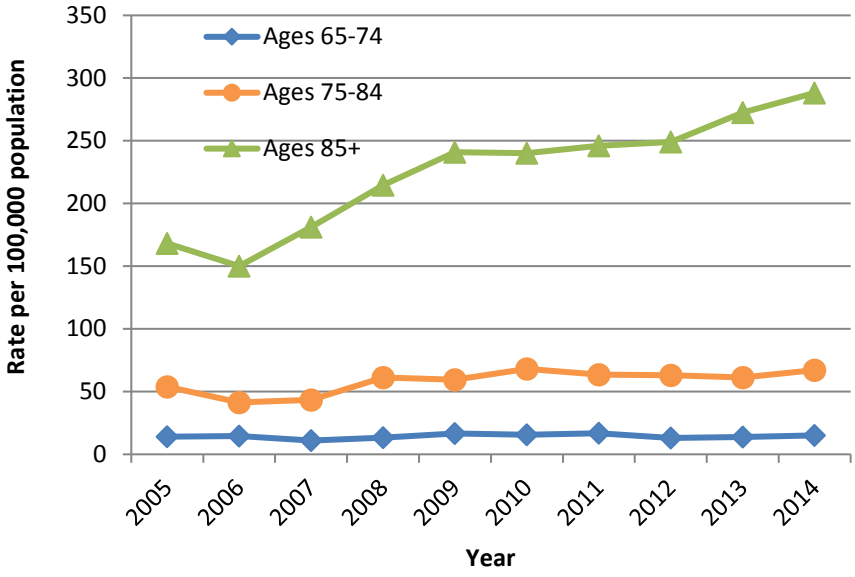
FALL DEATHS

FIGURE 2. Age-adjusted Rate of Fall Deaths by Sex, Ages 65 and older—North Carolina, 2005-2014



- From 2005 to 2014, the age-adjusted rate of fall deaths increased from 47.0 per 100,000 in 2005 to 67.3 per 100,000 in 2014.
- Fall death rates increased among both males and females during this time period.
- In 2014, the fall death rate in males was approximately 48% higher than in females.

FIGURE 3. Age-specific Rate of Fall Deaths by Age Group, Ages 65 and older—North Carolina, 2005-2014



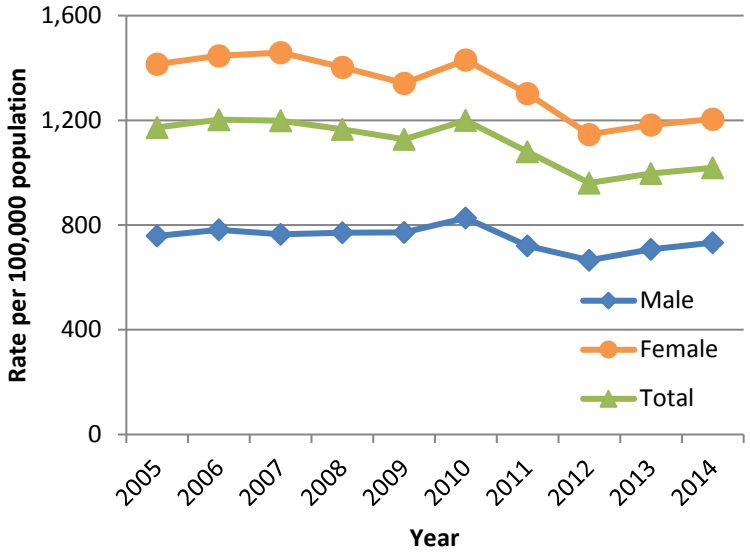
- Fall death rates increased among all three age groups.
- The highest increase was among persons ages 85 and older.
- Rates for persons ages 85 and older increased, from 168.1 per 100,000 in 2005 to 288.2 per 100,000 in 2014.

North Carolina

Special Emphasis Report: Fall Injuries among Older Adults 2005-2014

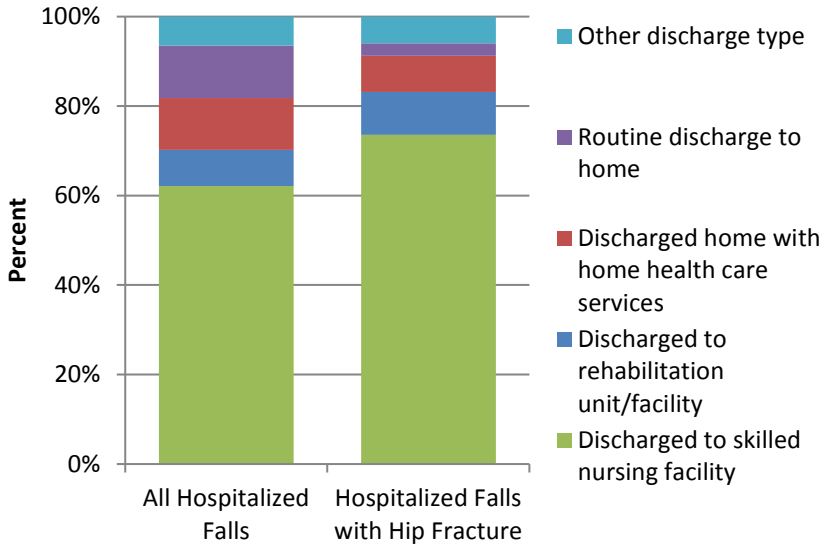
NONFATAL FALL HOSPITALIZATIONS

FIGURE 4. Age-adjusted Rate of Nonfatal Fall Hospitalizations by Sex, Ages 65 and older—North Carolina, 2005-2014



- Nonfatal fall hospitalizations remained relatively stable from 2005 to 2010. Rates decreased between 2010 and 2012, but have since begun to increase slightly.
- In 2014, rates among females are approximately 1.6 times that of males.

FIGURE 5. Percent of Nonfatal Fall Hospitalizations by Discharge Disposition, Ages 65 and older—North Carolina, 2014



- Sixty-two percent of all fall hospitalizations were discharged to a skilled nursing facility.
- Among falls resulting in a hip fracture, 73.6% were discharged to a skilled nursing facility and 9.6% discharged to a rehabilitation facility.[1]
- Among those with a hip fracture, only 2.8% had a routine discharge to home and 8.1% were discharged home with home health services.

[1]Rehabilitation includes inpatient hospital rehab units as well as other outside facilities.

North Carolina

Special Emphasis Report: Fall Injuries among Older Adults 2005-2014

DEMOGRAPHIC DATA

TABLE 1. Number and Rate of Fall Deaths and Nonfatal Fall Hospitalizations and Emergency Department (ED) Visits, Ages 65 and older—North Carolina, 2014

	Fall Deaths		Nonfatal Fall Hospitalizations and Emergency Department (ED) Visits			
	Number of Deaths	Death Rate per 100,000[2]	Number of Hospitalizations	Nonfatal Hospitalization Rate per 100,000[2]	Number of ED Visits	Nonfatal ED Visit Rate per 100,000[2]
TOTAL	908	67.3	13,841	1,019.3	61,810	4,471.4
Sex						
Male	424	84.0	3,919	733.5	18,605	3,348.0
Female	484	56.8	9,922	1,204.8	43,200	5,239.8
Age Group						
Ages 65-74	131	15.1	3,430	395.3	20,640	2,378.5
Ages 75-84	286	67.3	5,144	837.9	21,809	5,129.2
Ages 85+	491	288.2	5,267	1,238.7	19,361	11,363.3
Race/Ethnicity						
White, NH[3]	836	76.0	12,291	1,115.7		
Black, NH	47	22.7	992	467.4		
Hispanic	9	43.0	134	607.7		
Asian/PI[4], NH	5	44.1	38	242.3		
AI/AN[5], NH	8	81.3	197	2,041.2		

- Males had a higher rate of fall deaths than females (84.0 per 100,000 and 56.8 per 100,000, respectively).
- Females had higher rates for nonfatal hospitalizations and ED visits.
- Persons ages 85 and older had the highest rates of fatal and nonfatal fall injuries. This age group had 19 times the rate of deaths than those aged 65-74.
- American Indian/Alaskan Native residents had the highest rates of fall deaths and Black Non-Hispanic residents had the lowest.
- American Indian/Alaskan Native residents had the highest rates of fall hospitalizations and Non-Hispanic Asian/Pacific Islander residents had the lowest. Race/Ethnicity data was left out for ED visits due to incompleteness.

[2]Rates are age-adjusted except for rates by age group.
[3]Non-Hispanic
[4]Pacific Islander
[5]American Indian/Alaskan Native

North Carolina

Special Emphasis Report: Fall Injuries among Older Adults 2005-2014

PROJECTED LIFETIME COSTS

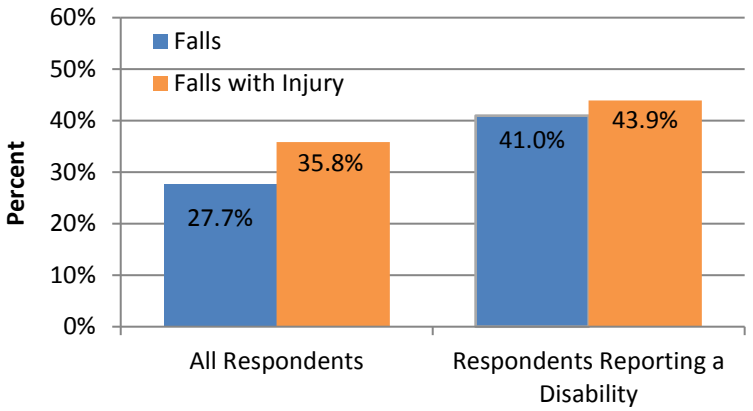
Lifetime costs[4] associated with unintentional fall injuries in 2014 among North Carolina residents ages 65 and older are estimated to be almost $1.4 billion. Most of these costs were associated with injuries requiring hospitalization.

	Number of Injuries	Medical Cost	Work Loss Cost	**Combined Cost**
Deaths	908	$20,762,000	$99,552,000	**$120,314,000**
Hospitalizations	13,841	$568,743,000	$417,559,000	**$986,302,000**
ED Visits	61,810	$200,858,000	$87,381,000	**$288,239,000**
TOTAL	76,559	$790,363,000	$604,492,000	**$1,394,855,000**

SURVEY DATA

- The Behavioral Risk Factor Surveillance Survey (BRFSS) is a statewide phone survey of community dwelling (i.e. non-institutionalized) North Carolina adults. It provides self-reported data on a variety of topics, including falls, fall-related injuries, and medical conditions.
- In 2014, an estimated 642 of North Carolina adults ages 65 and older reported having fallen and 36% reported a fall-related injury in the past 12 months.
- Older North Carolina adults who reported the following conditions were significantly ***more likely***[5] to report falls and fall-related injuries in the past 12 months:
  - poor mental health/depression
  - diabetes
  - asthma
  - stroke
  - coronary artery disease (CAD)
  - obesity
  - no exercise
  - disability[6]

FIGURE 6. Self-Reported Falls and Fall Injuries in the Past 12 Months, Ages 65 and older—North Carolina, 2014



- Older adults who reported a physical, cognitive and/or emotional disability[6] had particularly high fall rates, with an estimated 41% reporting having fallen and 44% reporting fall-related injuries in the past 12 months.

---

[4]Costs were calculated using the CDC's WISQARS Cost Module application which provides cost estimates for medical and work loss for injury-related deaths, hospitalizations, and emergency department visits. http://www.cdc.gov/injury/wisqars/ .

[5]These conditions are statistically significant at the (P<.05 level). However, causality shouldn't be assumed. Selected chronic health conditions: respondents reported "Yes" to **EVER** having been diagnosed with: Diabetes; Asthma; Stroke; Depression; Coronary artery disease (CAD)/Angina **or** with Myocardial infarction. Poor mental health includes persons who reported experiencing 14+ days of poor mental health in the past month. Respondents are asked their height and weight to calculate BMI. Obesity is defined as a BMI greater than or equal to 30.0. Exercise is defined as respondents reporting "No" to **ANY** leisure-time physical activity.

[6]Disability is defined as having one or more of the following conditions for at least one year; (1) impairment or health problem that limited activities or caused cognitive difficulties, (2) used special equipment or required help from others to get around.

North Carolina

Special Emphasis Report: Fall Injuries among Older Adults 2005-2014

FALL PREVENTION RESOURCES

STEADI (Stopping Elderly Accidents Deaths & Injuries): The Centers for Disease Control and Prevention (CDC) is working to make fall prevention a routine part of clinical care. STEADI uses established clinical guidelines and effective strategies to help primary care providers address their older patients' fall risk and identify modifiable risk factors: www.cdc.gov/steadi.

PREVENTION ACTIVITIES IN NORTH CAROLINA

Prevention activities surrounding falls are coordinated by the NC Falls Prevention Coalition. The Coalition partners with the NC Division of Aging and Adult Services (NC DAAS), the UNC Center for Aging and Health, the University of North Carolina Injury Prevention Research Center, along with the Division of Public Health (DPH) and many more to address: infrastructure development and maintenance, community awareness and education, provider education, risk assessment and behavioral intervention, surveillance and evaluation, and advocacy for supportive polices and environments.

Through this work evidence-based falls prevention programs are offered across the state including: A Matter of Balance, the Otago Exercise Program, Tai Chi for Arthritis, and YMCA: Moving for Better Balance.

The NC DPH-Injury & Violence Prevention Branch produces the CDC State Injury Surveillance, periodic short reports and surveillance updates that include falls information/data.

Accomplishments/successes include: a grant awarded to NC DAAS to increase the number of those at risk for falls who participate in evidence-based falls prevention programs while increasing sustainability of these programs; the development of a statewide database "hub" to create a centralized referral system for falls prevention programs and information (http://healthyagingnc.com); Statewide Falls Prevention Summits held in 2014, 2015, and upcoming in 2017; falls prevention being included in the injury recommendations for NC Healthy People 2020 initiative and the State Aging Services Plan; and the annual observance of NC Falls Prevention Awareness Week.

DATA SOURCES and DEFINITIONS

North Carolina State Center for Health Statistics, Vital Statistics-Hospitalizations, 2005-2014;
North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT), 2005-2014;
CDC's Web-based Injury Statistics Query and Reporting System (WISQARS) Cost Module, 2014
North Carolina Behavioral Risk Factor Surveillance Survey (BRFSS), 2014;
North Carolina Falls Prevention Coalition; National Council on Aging

North Carolina Division of Public Health
www.injuryfreenc.ncdhhs.gov/index.htm
Released October, 2016