

## Falls Prevention Awareness Day — September 22, 2016

September 22, 2016, marks the 9th annual observation of Falls Prevention Awareness Day in the United States. Falls are the leading cause of injury, death, and disability for older persons in the United States.\* This issue of *MMWR* includes a report describing the epidemiology of falls among older adults, and how health care providers can use CDC's STEADI (Stopping Elderly Accidents, Deaths, and Injuries) initiative† to reduce preventable falls. STEADI provides tools for health care providers to screen older adult patients, assess fall risk, and provide effective interventions.

In 2011, health department and health system partnerships in Oregon and New York used CDC funding to implement STEADI into their primary care practices (1). Before implementing STEADI, health care providers in these sites rarely talked to their older adult patients about falls (1,2). After implementation, participating health care providers in New York screened and assessed 65% of older adult patients for fall risk (2), and participating health care providers in Oregon screened and assessed approximately half of all older adult patients (1).

To help prevent older adult falls, health care providers are encouraged to take three steps: 1) screen patients for fall risk, 2) review and manage patients' medications that might increase fall risk, and 3) recommend daily vitamin D supplements for improved bone, muscle, and nerve health. Additional information is available at <http://www.cdc.gov/steadi>.

\* <http://www.cdc.gov/injury/WISQARS>.

† <http://www.cdc.gov/steadi>.

### References

1. Casey CM, Parker EM, Winkler G, Liu X, Lambert GH, Eckstrom E. Lessons learned from implementing CDC's STEADI falls prevention algorithm in primary care. *Gerontologist* 2016;gnw074. <http://dx.doi.org/10.1093/geront/gnw074>
2. Parker EM, Lee R, Floyd F, et al. Making older adult fall prevention part of routine care in a large health system in New York state. *Gerontologist* 2015;55(Suppl 2):320.

## Falls and Fall Injuries Among Adults Aged ≥65 Years — United States, 2014

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Falls are the leading cause of fatal and nonfatal injuries among adults aged ≥65 years (older adults). During 2014, approximately 27,000 older adults died because of falls; 2.8 million were treated in emergency departments for fall-related injuries, and approximately 800,000 of these patients were subsequently hospitalized.\* To estimate the numbers, percentages, and rates of falls and fall injuries among older adults by selected characteristics and state, CDC analyzed data from the 2014 Behavioral Risk Factor Surveillance System (BRFSS) survey. In 2014, 28.7% of older adults reported falling; the estimated 29.0 million falls resulted in 7.0 million injuries. Known effective strategies for reducing the number

\* <http://www.cdc.gov/injury/wisqars>.

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of older adult falls include a multifactorial clinical approach (e.g., gait and balance assessment, strength and balance exercises, and medication review). Health care providers can play an important role in fall prevention by screening older adults for fall risk, reviewing and managing medications linked to falls, and recommending vitamin D supplements to improve bone, muscle, and nerve health and reduce the risk for falls.

BRFSS is an annual, random-digit-dialed telephone survey of the noninstitutionalized U.S. civilian population aged  $\geq 18$  years conducted annually in all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands. Detailed information regarding the survey is available online.<sup>†</sup> The median response rate for 2014 was 47.0%.

In 2014, survey respondents were asked, “In the past 12 months, how many times have you fallen?” If the response was one or more times, they were asked, “How many of these falls caused an injury? By an injury, we mean the fall caused you to limit your regular activities for at least a day or to go see a doctor.” This analysis was limited to adults aged  $\geq 65$  years in all 50 states and the District of Columbia who were asked the questions about falls.

The first question was used to estimate the percentage of older adults who reported one or more falls and the total number of falls; the second question was used to estimate the number of fall injuries. Response options ranged from zero to 76 or more with reported means of 0.67 falls and 0.16 fall

injuries. The percentages and numbers of falls and fall injuries included all adults aged  $\geq 65$  years in the denominator. Adults with responses of “Don’t know/Not sure,” “Refused,” or “Not asked or missing” for questions about falls, fall injuries, or demographic characteristics were excluded, reducing the sample to 147,319 adults.<sup>§</sup>

The percentages and numbers were compared across the following subgroups: sex, age group, race/ethnicity, marital status, education, annual household income, health status, and state of residence. Orthogonal polynomial contrasts and pairwise t-tests were used to identify significant increases or decreases where appropriate. The 2014 BRFSS data were weighted by iterative proportional fitting (raking) to represent state-level population estimates and aggregated to represent a nationwide estimate.<sup>¶</sup> All results presented are weighted. Analyses were conducted using statistical software to account for the complex sampling design.

In 2014, 28.7% of older adults reported falling at least once in the preceding 12 months, resulting in an estimated 29.0 million falls (Table 1). Of those who fell, 37.5% reported at least one fall that required medical treatment or restricted activity for at least 1 day, resulting in 7.0 million fall injuries. Women (30.3%) were more likely to report falling than men (26.5%) ( $p < 0.01$ ) and were more likely to report a fall injury (12.6% compared with 8.3%;  $p < 0.01$ ). The percentage of

<sup>†</sup> <http://www.cdc.gov/brfss>.

<sup>§</sup> [http://www.cdc.gov/brfss/annual\\_data/2014/pdf/codebook14\\_llcp.pdf](http://www.cdc.gov/brfss/annual_data/2014/pdf/codebook14_llcp.pdf).

<sup>¶</sup> <http://www.cdc.gov/surveillancepractice/reports/brfss/brfss.html>.

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TABLE 1. Percentages and rates\* of falls and fall injuries† in the preceding 12 months reported by adults aged ≥65 years (N = 147,319), by selected characteristics — Behavioral Risk Factor Surveillance System, United States, 2014

Characteristic	No. reporting a fall <sup>§</sup>	% (95% CI)	No. of falls reported (millions)	Rate <sup>¶</sup> (95% CI)	No. reporting a fall injury	% (95% CI)	No. of fall injuries reported (millions)	Rate** (95% CI)
<b>Overall</b>	<b>43,958</b>	<b>28.7 (28.2–29.1)</b>	<b>29.0</b>	<b>672 (648–695)</b>	<b>16,083</b>	<b>10.7 (10.4–11.0)</b>	<b>7.0</b>	<b>164 (156–171)</b>
<b>Sex</b>								
Men	15,668	26.5 (25.8–27.2)	12.4	657 (620–694)	4,731	8.3 (7.9–8.8)	2.4	127 (118–136)
Women	28,290	30.3 (29.7–31.0)	16.5	683 (653–714)	11,352	12.6 (12.1–13.0)	4.6	192 (181–203)
<b>Age group (yrs)</b>								
65–74	23,859	26.7 (26.2–27.3)	16.2	650 (619–680)	8,650	9.9 (9.5–10.3)	3.8	154 (146–163)
75–84	14,379	29.8 (29.0–30.7)	9.5	669 (634–703)	5,267	11.4 (10.8–12.1)	2.4	170 (155–185)
≥85	5,720	36.5 (35.0–38.0)	3.3	820 (705–935)	2,166	13.5 (12.4–14.6)	0.8	199 (172–226)
<b>Race/Ethnicity</b>								
White	38,180	29.6 (29.1–30.0)	23.3	683 (661–706)	13,869	10.9 (10.6–11.2)	5.6	163 (156–170)
Black	2,204	23.1 (21.5–24.8)	1.8	487 (432–542)	795	7.8 (6.9–8.8)	0.4	115 (93–137)
American Indian/Alaska Native	542	34.2 (29.6–39.2)	0.4	1,322 (838–1,805)	234	16.8 (13.0–21.3)	0.1	441 (233–649)
Asian/Pacific Islander	271	19.8 (14.0–27.1)	— <sup>††</sup>	—	—	—	—	—
Hispanic	1,191	26.4 (23.8–29.2)	1.8	655 (483–827)	489	10.7 (9.0–12.7)	0.4	164 (132–196)
Multiple/Other	844	33.5 (29.5–37.8)	0.5	971 (734–1,208)	340	15.4 (12.5–18.7)	0.2	314 (171–456)
<b>Marital status</b>								
Married	19,241	26.2 (25.6–26.8)	14.2	597 (570–624)	6,491	9.3 (8.9–9.8)	3.3	140 (129–150)
Divorced	6,582	32.7 (31.3–34.1)	4.3	825 (741–908)	2,613	13.3 (12.3–14.4)	1.1	209 (190–229)
Widowed	15,062	31.7 (30.9–32.6)	8.0	703 (669–736)	5,858	12.2 (11.6–12.8)	2.1	182 (169–194)
Separated	491	30.2 (25.5–35.3)	0.5	928 (709–1,148)	208	12.8 (9.8–16.4)	0.1	275 (172–378)
Never married	2,116	29.6 (27.3–31.9)	1.3	813 (641–986)	743	10.7 (9.4–12.3)	0.3	177 (136–218)
Member of unmarried couple	318	32.8 (26.5–39.8)	—	—	—	—	0.1	291 (138–445)
<b>Education</b>								
Less than high school graduate	4,439	30.2 (28.7–31.7)	5.6	810 (724–896)	1,728	11.9 (10.9–12.9)	1.3	193 (172–215)
High school graduate	13,317	27.2 (26.5–28.0)	8.1	600 (572–628)	4,856	9.9 (9.4–10.4)	1.9	143 (134–152)
Some college	11,614	29.9 (29.0–30.9)	8.9	721 (669–772)	4,438	11.9 (11.1–12.6)	2.3	189 (171–207)
College graduate or more	14,460	28.1 (27.3–28.8)	6.2	607 (577–636)	5,005	9.6 (9.1–10.1)	1.4	139 (129–149)
<b>Annual household income (\$)</b>								
<15,000	4,832	34.9 (33.1–36.7)	4.0	987 (893–1,080)	2,119	15.1 (13.8–16.5)	1.1	277 (243–312)
15,000–24,999	8,726	30.7 (29.6–31.8)	6.2	802 (746–858)	3,438	12.3 (11.6–13.1)	1.5	198 (181–216)
25,000–34,999	5,480	30.2 (28.9–31.6)	3.5	665 (619–712)	1,920	10.6 (9.8–11.5)	0.8	157 (139–175)
35,000–49,999	6,054	28.0 (26.9–29.2)	3.9	647 (592–702)	2,084	10.0 (9.2–10.9)	0.9	145 (130–160)
50,000–74,999	5,007	26.1 (24.9–27.3)	3.1	587 (511–663)	1,728	9.4 (8.6–10.2)	0.7	129 (116–143)
≥75,000	5,911	24.8 (23.7–25.9)	3.7	532 (461–604)	1,885	8.6 (7.8–9.4)	0.8	119 (104–134)
<b>Health status</b>								
Excellent	3,922	19.2 (18.1–20.3)	1.8	340 (307–374)	1,136	5.9 (5.2–6.6)	0.4	69 (60–77)
Very good	11,089	23.7 (22.9–24.4)	5.7	457 (410–505)	3,479	7.9 (7.4–8.4)	1.2	101 (92–109)
Good	14,481	28.3 (27.4–29.1)	8.3	578 (547–608)	5,055	10.1 (9.5–10.7)	2.0	138 (125–151)
Fair	9,285	36.7 (35.5–37.9)	7.4	979 (918–1,040)	3,883	15.3 (14.4–16.2)	1.9	253 (232–275)
Poor	4,936	47.3 (45.3–49.3)	5.5	1771 (1,619–1,923)	2,440	22.1 (20.6–23.6)	1.5	480 (430–530)

Abbreviation: CI = confidence interval.

\* Number of falls in the preceding 12 months.

† An injury caused by a fall in the preceding 12 months that caused respondents to limit their regular activities for ≥1 days or to go see a doctor.

§ Unweighted number of older adults reporting a fall. Because of varying question-specific nonresponse, sample sizes vary among questions.

¶ Number of falls per 1,000 adults aged ≥65 years.

\*\* Number of fall injuries per 1,000 adults aged ≥65 years.

†† Sample size &lt;50 or relative standard error &gt;30%.

older adults who fell increased with age ( $p<0.01$ ), from 26.7% among persons aged 65–74 years, to 29.8% among persons aged 75–84 years, to 36.5% among persons aged ≥85 years. The percentage of older adults who fell was higher among whites (29.6%) and American Indian/Alaska Natives (AI/ANs)

(34.2%) than among blacks (23.1%) and Asian/Pacific Islanders (19.8%). The percentage of older adults who reported a fall injury also increased with age ( $p<0.01$ ), from 9.9% among persons aged 65–74 years to 11.4% among persons aged 75–84 years, to 13.5% among persons aged ≥85 years. AI/ANs

were more likely to report a fall-related injury (16.8%) than were whites (10.9%), Hispanics (10.7%), and blacks (7.8%). The rate of fall-related injuries was significantly higher in the population reporting poor health (480 per 1,000) than the population reporting excellent health (69 per 1,000).

Among states and the District of Columbia, the percentage of older adults who reported a fall ranged from 20.8% in Hawaii to 34.3% in Arkansas. Several states had either significantly higher or lower percentages of reported falls among older adults compared with the national average (Figure) (Table 2). The percentage of older adults experiencing fall injuries ranged from 7.0% in Hawaii to 12.9% in Missouri.

### Discussion

In 2014, 28.7% of older adults in the United States reported an estimated 29.0 million falls in the preceding 12 months. Older adult falls can result in death, serious injury, and loss of independence (1,2). This analysis found that an estimated 7 million falls required medical treatment or caused restricted activity for at least 1 day. Women and those in older age groups were at higher risk for falling and being injured in a fall. Reduced muscle strength is a risk factor for falls, and aging and female sex are associated with reduced muscle mass (1,2). Women have been found to be more likely to report falls than men (3). Aging also is associated with changes in gait and balance, increased inactivity, more severe chronic conditions, and more prescription medication use, all of which are risk factors for falls (1). Limited research exists on the causes for racial/ethnic differences, but these differences might be related to differences in health

### Summary

#### What is already known about this topic?

Falls are the leading cause of fatal and nonfatal injuries among persons aged ≥65 years (older adults).

#### What is added by this report?

In 2014, 28.7% of older adults reported falling at least once in the preceding 12 months, resulting in an estimated 29.0 million falls. Of those who fell, 37.5% reported at least one fall that required medical treatment or restricted their activity for at least 1 day, resulting in an estimated 7.0 million fall injuries.

#### What are the implications for public health practice?

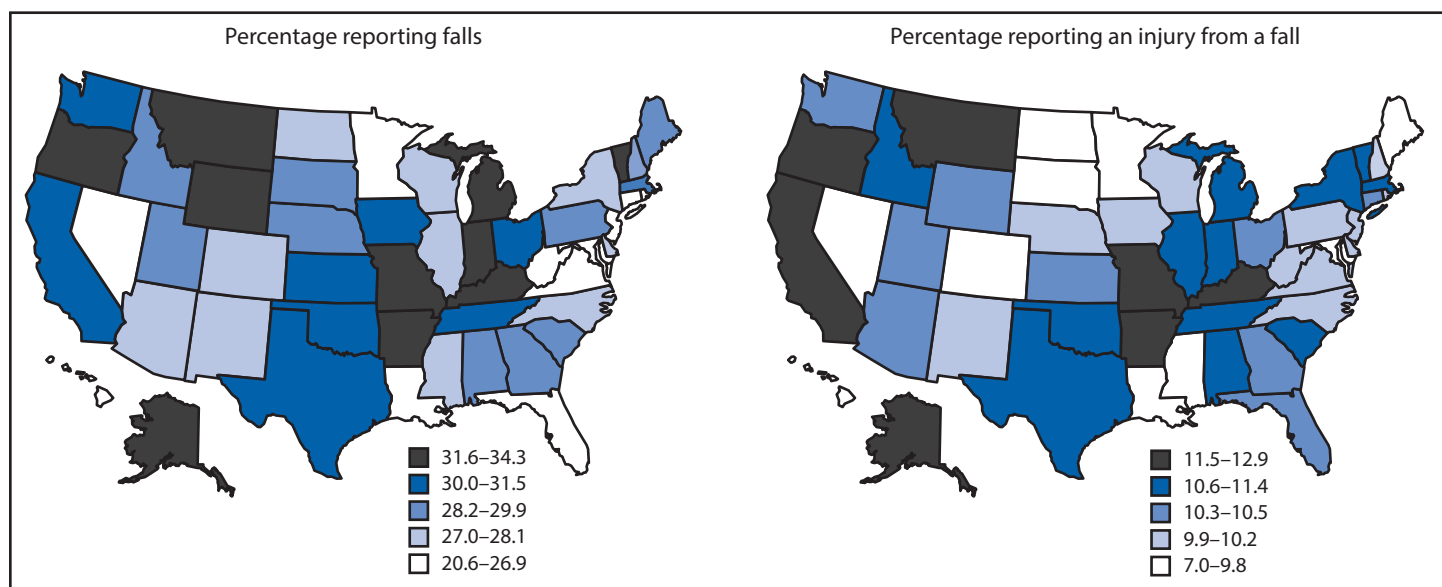
Although falls are common, approximately half of older adults who fall do not discuss it with their health care provider. However, older adult falls are largely preventable. Health care providers can play an important role in fall prevention by 1) screening older adults for fall risk, 2) reviewing and managing medications linked to falls, and 3) recommending vitamin D where appropriate for improved bone, muscle, and nerve health.

and behavior (4,5). Reasons for state differences are unknown; however, even in Hawaii, the state with the lowest incidence, 20.8% of older adults reported a fall.

Annual Medicare costs for older adult falls have been estimated at \$31.3 billion (6), and the older adult population is expected to increase 55% by 2030.\*\* Applying the number of falls from this analysis to the projected 2030 population would result in an

\*\* <http://www.census.gov>.

FIGURE. Percentages of falls and fall injuries\* in the preceding 12 months reported by adults aged ≥65 years (N = 147,319) — Behavioral Risk Factor Surveillance System, United States, 2014



\* Injuries resulting from falls that caused respondents to limit their regular activities for ≥1 days or to go see a doctor.

**TABLE 2. Percentages and rates\* of falls and fall injuries† in the preceding 12 months reported by adults aged ≥65 years (N = 147,319), by states ranked by percentage of older adults reporting ≥1 fall — Behavioral Risk Factor Surveillance System, United States, 2014**

State	No. reporting a fall <sup>§</sup>	% (95% CI)	No. of falls reported (thousands)	Rate <sup>¶</sup> (95% CI)	No. reporting a fall injury	% (95% CI)	No. of fall injuries reported (thousands)	Rate <sup>**</sup> (95% CI)
<b>Overall</b>	<b>43,958</b>	<b>28.7 (28.2–29.1)</b>	<b>29,000</b>	<b>672 (648–695)</b>	<b>16,083</b>	<b>10.7 (10.4–11.0)</b>	<b>7,000</b>	<b>164 (156–171)</b>
Arkansas	727	34.3 (31.6–37.0) <sup>††</sup>	377	868 (725–1011) <sup>††</sup>	275	11.5 (9.9–13.4)	79	183 (148–218)
Alaska	324	32.9 (29.0–37.0) <sup>††</sup>	65	940 (683–1197) <sup>††</sup>	114	11.9 (9.4–15.0)	12	178 (128–227)
Michigan	901	32.6 (30.5–34.8) <sup>††</sup>	1,216	810 (671–949)	323	11.4 (10.0–13.0)	265	177 (137–217)
Missouri	865	32.4 (29.9–35.0) <sup>††</sup>	741	823 (639–1008)	326	12.9 (11.2–14.9) <sup>††</sup>	187	208 (150–266)
Montana	908	32.2 (29.7–34.7) <sup>††</sup>	137	824 (670–977)	351	12.1 (10.5–13.9)	27	163 (139–187)
Kentucky	1,174	32.1 (29.7–34.6) <sup>††</sup>	473	770 (660–880)	445	11.9 (10.3–13.6)	108	176 (145–208)
Wyoming	836	32.1 (29.7–34.5) <sup>††</sup>	65	831 (668–994)	276	10.5 (9.1–12.2)	15	196 (122–270)
Indiana	1,272	31.8 (29.9–33.7) <sup>††</sup>	685	762 (659–864)	441	11.0 (9.8–12.3)	156	174 (142–207)
Oregon	626	31.8 (29.4–34.4) <sup>††</sup>	495	822 (684–960) <sup>††</sup>	251	12.3 (10.6–14.2)	145	241 (125–357)
Vermont	561	31.7 (29.2–34.3) <sup>††</sup>	78	777 (646–909)	197	11.1 (9.5–12.9)	15	151 (126–177)
Iowa	887	31.5 (29.5–33.7) <sup>††</sup>	322	686 (604–767)	289	9.9 (8.7–11.3)	70	149 (118–179)
Washington	1,120	31.2 (29.3–33.2) <sup>††</sup>	813	840 (652–1028)	406	10.5 (9.3–11.8)	150	155 (131–179)
Oklahoma	920	30.9 (28.9–32.9) <sup>††</sup>	488	891 (706–1075) <sup>††</sup>	322	11.1 (9.9–12.6)	120	219 (122–315)
California	613	30.7 (28.0–33.5)	3,134	801 (631–970)	225	12.4 (10.4–14.8)	807	207 (156–257)
Kansas	1,321	30.5 (28.9–32.0) <sup>††</sup>	292	735 (619–851)	455	10.4 (9.4–11.4)	76	191 (106–275)
Texas	1,504	30.2 (27.9–32.7)	1,906	654 (563–745)	551	11.4 (9.9–13.2)	476	164 (136–191)
Tennessee	600	30.1 (27.5–32.8)	685	737 (614–860)	213	11.4 (9.6–13.4)	166	179 (131–228)
Ohio	1,209	30.1 (28.0–32.3)	1,210	688 (610–767)	452	10.4 (9.1–11.9)	259	147 (124–171)
District of Columbia	427	30.1 (26.9–33.4)	51	687 (548–826)	155	11.7 (9.5–14.3)	13	175 (121–230)
Maine	1,014	29.9 (27.9–31.9)	195	836 (640–1032)	327	9.3 (8.1–10.5) <sup>§§</sup>	35	151 (116–185)
Idaho	586	29.9 (27.2–32.8)	154	697 (600–794)	201	10.6 (8.8–12.7)	37	170 (131–209)
Utah	1,049	29.6 (27.8–31.6)	192	668 (591–744)	383	10.5 (9.3–11.8)	43	149 (126–172)
Alabama	925	29.4 (27.3–31.6)	524	733 (630–836)	342	10.7 (9.4–12.3)	121	170 (134–206)
South Carolina	1,097	29.2 (27.4–31.1)	553	749 (623–874)	431	11.4 (10.2–12.8)	155	211 (140–281)
Massachusetts	1,591	28.6 (26.8–30.5)	588	611 (532–689)	613	10.6 (9.5–11.9)	146	152 (127–177)
Pennsylvania	1,083	28.6 (26.7–30.5)	1,208	588 (524–651) <sup>§§</sup>	380	9.9 (8.7–11.2)	271	132 (114–151) <sup>§§</sup>
Georgia	615	28.6 (26.2–31.1)	769	649 (560–738)	227	10.5 (8.9–12.2)	190	160 (124–196)
South Dakota	720	28.5 (25.6–31.6)	74	577 (473–681)	242	9.7 (8.0–11.8)	18	143 (103–183)
Nebraska	2,235	28.2 (26.8–29.6)	187	701 (614–789)	751	9.9 (9.0–10.9)	39	146 (120–172)
Delaware	441	28.1 (25.4–31.0)	97	660 (495–826)	160	10.0 (8.3–12.0)	21	143 (112–175)
Mississippi	457	28.1 (25.3–31.0)	282	674 (526–822)	163	8.9 (7.4–10.6) <sup>§§</sup>	55	133 (98–167)
North Carolina	642	28.0 (25.9–30.2)	868	616 (543–688)	234	10.0 (8.7–11.6)	237	168 (132–205)
New Hampshire	619	28.0 (25.5–30.6)	131	649 (530–768)	228	9.6 (8.2–11.3)	33	162 (108–217)
New Mexico	828	27.8 (25.5–30.2)	190	661 (567–755)	294	10.2 (8.7–11.9)	46	158 (125–192)
Wisconsin	505	27.8 (24.9–30.9)	496	690 (470–911)	192	10.1 (8.3–12.2)	104	145 (111–179)
New York	547	27.7 (25.2–30.3)	1,598	584 (507–661) <sup>§§</sup>	205	10.7 (9.1–12.6)	422	154 (126–183)
Arizona	1,722	27.5 (26.0–29.1)	676	707 (591–824)	677	10.4 (9.4–11.5)	142	148 (130–167)
Illinois	457	27.4 (24.7–30.3)	1,058	610 (485–736)	178	11.1 (9.3–13.2)	277	160 (125–195)
North Dakota	732	27.2 (24.8–29.7)	71	677 (539–815)	264	9.5 (8.1–11.2)	15	145 (101–188)
Colorado	1,107	27.1 (25.4–28.8)	374	601 (515–688)	395	9.4 (8.4–10.5) <sup>§§</sup>	85	137 (115–158) <sup>§§</sup>
Nevada	386	26.9 (23.6–30.5)	233	605 (475–735)	141	9.8 (7.8–12.2)	76	198 (124–272)
Rhode Island	550	26.8 (24.4–29.3)	90	566 (457–674)	219	10.2 (8.6–12.0)	24	150 (113–186)
West Virginia	536	26.6 (24.4–28.9)	208	642 (533–751)	206	9.9 (8.5–11.6)	48	149 (121–177)
Connecticut	661	26.5 (24.2–29.0)	263	496 (425–567) <sup>§§</sup>	266	10.3 (8.8–12.1)	79	149 (117–182)
Minnesota	1,185	26.1 (24.5–27.6) <sup>§§</sup>	448	591 (514–669)	415	9.0 (8.0–10.1) <sup>§§</sup>	105	139 (114–164)
Virginia	700	25.6 (23.5–27.8) <sup>§§</sup>	602	534 (468–600) <sup>§§</sup>	265	9.9 (8.5–11.4)	154	137 (112–162) <sup>§§</sup>
Florida	1,060	25.1 (23.4–26.9) <sup>§§</sup>	2,087	599 (513–686)	440	10.4 (9.3–11.7)	526	151 (129–174)
Maryland	1,179	25.1 (23.1–27.2) <sup>§§</sup>	405	506 (437–576) <sup>§§</sup>	418	8.1 (7.0–9.3) <sup>§§</sup>	93	116 (98–134) <sup>§§</sup>
Louisiana	530	24.9 (22.7–27.1) <sup>§§</sup>	365	591 (511–670)	193	8.6 (7.3–10.1) <sup>§§</sup>	92	150 (108–191)
New Jersey	937	23.6 (21.6–25.7) <sup>§§</sup>	653	525 (421–629) <sup>§§</sup>	397	10.2 (8.9–11.8)	187	151 (111–190)
Hawaii	467	20.8 (18.5–23.4) <sup>§§</sup>	85	399 (331–467) <sup>§§</sup>	169	7.0 (5.6–8.6) <sup>§§</sup>	18	83 (66–101) <sup>§§</sup>

Abbreviation: CI = confidence interval.

\* Number of falls in the preceding 12 months.

† An injury caused by a fall in the preceding 12 months that caused respondents to limit their regular activities for ≥1 days or to go see a doctor.

§ Unweighted number of older adults reporting a fall. Because of varying question-specific nonresponse, sample sizes vary among questions.

¶ Number of falls per 1,000 adults aged ≥65 years.

\*\* Number of fall injuries per 1,000 adults aged ≥65 years.

†† Significantly higher than the overall percentage or rate.

§§ Significantly lower than the overall percentage or rate.

estimated 48.8 million falls and 11.9 million fall injuries, unless effective interventions are implemented nationwide.

The findings in this report are subject to at least four limitations. First, BRFSS data are self-reported and subject to recall bias. Second, BRFSS does not include persons in long-term care facilities who are at higher risk for falls (7). Third, the broad definition of fall injury for this analysis might have resulted in a higher estimate of injurious falls compared with other reports. Finally, the response rate (median = 47%) could have resulted in nonresponse bias; however, weighting and survey methodology are used to adjust the estimates and reduce the effect of nonresponse bias.

Older adult falls are largely preventable, and health care providers (e.g., physicians, nurses, nurse practitioners, physician assistants, pharmacists, physical therapists, and occupational therapists) can play an important part by discussing falls with older adult patients and providing appropriate interventions (8). The American and British Geriatrics Societies (AGS/BGS) Clinical Practice Guideline recommends that health care providers use a multifactorial approach to prevent falls that includes activities such as asking about falls, assessing gait and balance, reviewing medications, and prescribing interventions such as strength and balance exercises, or taking vitamin D.<sup>††</sup> This type of approach has been estimated to be capable of reducing falls by 24% (8). Based on the AGS/BGS guidelines, CDC has developed the STEADI (Stopping Elderly Accidents, Deaths, and Injuries) initiative<sup>§§</sup> to provide resources to help health care providers incorporate fall prevention into primary care (3). STEADI stresses three initial steps that can be completed in one patient visit: 1) ask patients if they have fallen in the past year, feel unsteady, or worry about falling; 2) review medications and stop, switch, or reduce the dosage of drugs that increase fall risk; and 3) recommend daily vitamin D supplementation for improved bone, muscle, and nerve health (with dosage of vitamin D and decision on whether to co-supplement with calcium to be determined based on the patient's history).

Health care providers should discuss fall prevention with their patients because approximately half of older adults who fall do not discuss it with their health care provider, often because they fear this will lead to a loss of independence (9). Health care providers cite limited time and cost as barriers to incorporating preventive services, such as those proposed by STEADI, into their clinical practice (10). However, the Centers for Medicare & Medicaid Services (CMS) now provides incentives for health care providers to conduct fall prevention

activities through payment and delivery reforms (e.g., Welcome to Medicare Visit, Medicare Annual Wellness Visit, and the Medicare Shared Savings Accountable Care Organization Program).<sup>¶¶</sup> CMS also links health care provider incentives to fall prevention quality measures through the Physician Quality Reporting System (PQRS) in the Merit-Based Incentive Program. PQRS includes two quality measures for falls: Falls Risk Assessment and Falls Plan of Care.<sup>\*\*\*</sup> Mechanisms such as payment and delivery reforms and quality reporting measures are opportunities to make fall prevention a routine part of clinical practice and reduce the barriers to providing services that can prevent falls among older adults.

<sup>¶¶</sup> <http://www.medicareinteractive.org/get-answers/medicare-covered-services/preventive-care-services/annual-wellness-visit>.

<sup>\*\*\*</sup> <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/PQRS/index.html>.

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<sup>††</sup> [http://www.americangeriatrics.org/health\\_care\\_professionals/clinical\\_practice/clinical\\_guidelines\\_recommendations/prevention\\_of\\_falls\\_summary\\_of\\_recommendations](http://www.americangeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/prevention_of_falls_summary_of_recommendations).

<sup>§§</sup> <http://www.cdc.gov/steadi/>.