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DATA SNAPSHOT

September 2025 | OEI-05-24-00181

**Serious Falls Resulting in
Hospitalization Among Medicare-
Enrolled Nursing Home Residents,
July 2022–June 2023**



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Why OIG Did This Review

- This data snapshot is being released as a companion to our report [*Nursing Homes Failed To Report 43 Percent of Falls With Major Injury and Hospitalization Among Their Medicare-Enrolled Residents \(OEI-05-24-00180\)*](#).
- That report found that nursing homes failed to report almost half of serious falls among Medicare-enrolled residents, as required, in resident assessments, leading to inaccurate nursing home fall rates on [CMS's Care Compare website](#).
- Because most nursing home residents in the United States are enrolled in Medicare, analysis of falls among Medicare-enrolled residents provides insights that are broadly relevant to nursing home safety.

What OIG Did

- Using Medicare hospital claims, we identified Medicare enrollees who experienced a hospitalization due to a fall with major injury during the 1-year review period from July 1, 2022, through June 30, 2023. We determined the subset of those enrollees who were nursing home residents at the time of the fall using Minimum Data Set (MDS) assessments.
- We then used the hospital claims and MDS assessments to describe the prevalence and outcomes of these serious falls; the demographic characteristics and risk factors of the residents who fell; and the characteristics of the nursing homes in which the falls occurred.

What OIG Found

- Medicare-enrolled nursing home residents experienced **42,864 falls with major injury and hospitalization** and **1,911 residents died while hospitalized**.
- Medicare and enrollees paid more than **\$800 million** for the resulting hospital care.
- **Most residents had fall risk factors** identified by nursing homes prior to their falls.
- **Female** residents, **older** residents, and residents with **short stays** had the highest fall rates.
- Nursing homes with **lower nurse staffing levels** and **lower quality ratings** had higher fall rates.

What OIG Concludes

More than 40,000 Medicare-enrolled nursing home residents experienced serious falls—those resulting in major injury and hospitalization—over this 1-year review period. These falls reduced residents' quality of life and were costly for the Medicare program. More robust fall prevention programs and other quality improvement initiatives can help reduce falls among nursing home residents.

Key Terms

Nursing homes: For the purposes of this review, nursing homes are Medicare- and/or Medicaid-certified nursing facilities and skilled nursing facilities.

Medicare-enrolled residents or Medicare-enrolled nursing home residents: People living in nursing homes who are enrolled in the Medicare program, including those who are also enrolled in Medicaid. This represents most nursing home residents in the United States.

Resident assessments: Nursing homes are required to complete resident assessments, using the standardized Minimum Data Set (MDS) questionnaire, when a person enters a nursing home, quarterly thereafter, upon significant change in condition, and upon discharge. These assessments collect information about each residents' health, physical functioning, mental status, and general well-being.

Falls with major injury and hospitalization: This review focuses on a subset of the most serious falls among nursing home residents—those resulting in a major injury and inpatient hospitalization. We identified these falls in hospital claims. Then, we used hospital claims and MDS assessments to describe the circumstances of the falls.

Nursing home episodes: A nursing home episode is a defined period of time when a person is a resident in a nursing home. We used the Centers for Medicare & Medicaid Services' (CMS's) methods to calculate nursing home episodes. A person can have more than one episode in our 1-year review period if they are a resident at two different nursing homes or if they are discharged from a nursing home and then return at a later date.

Resident days: The total number of days that each resident stayed at a nursing home. If all beds in a nursing home were continuously occupied, the number of resident days per year would equal the number of beds times 365.

This graphic shows a hypothetical example of a nursing home's schedule for four residents in a 7-day week. Each resident's stay is a different number of days. In the 7 days, this nursing home had 19 resident days.

	Su	M	T	W	Th	F	Sa	Resident Days
Resident A								7
Resident B								3
Resident C								5
Resident D								4

Fall rate: The Agency for Health Care Research and Quality recommends using the number of falls per resident day to compare fall rates across groups of patients or providers. This approach accounts for the length of time each resident was at risk of falling in the facility. We used this approach and scaled to 100,000 resident days for ease of interpretation.

Fall Prevalence and Outcomes

Medicare-enrolled nursing home residents experienced 42,864 falls resulting in major injury and hospitalization over 1 year

There were 3.2 million Medicare-enrolled nursing home residents over the 1-year period we reviewed. We identified 42,864 falls (experienced by 41,508 residents) with major injury and hospitalization during this period.¹ Most of these residents had only one fall during the year.

These nursing home residents were treated for serious conditions once hospitalized, and many died

1,911 nursing home residents died while hospitalized for a fall with major injury.²

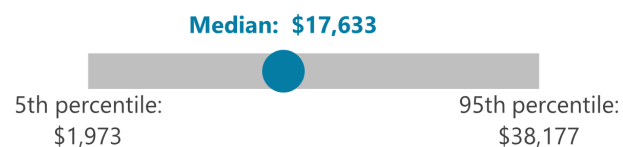
The major injuries sustained by the nursing home residents hospitalized for falls were:

- **bone fractures** (90 percent of falls);
- **subdural hematomas** (8 percent);
- **head injuries with altered consciousness** (5 percent); and
- **joint dislocations** (1 percent).*

*The total sums to greater than 100 percent because a single hospitalization may have more than one of these injury types coded.

Medicare and enrollees paid more than \$800 million for the nursing home residents' hospitalizations

The amount Medicare and enrollees paid for each of these hospitalizations varied widely. The average amount paid was \$19,298, and the median was \$17,633.



In the majority of cases (57 percent), hospitals billed for treatments including **hip replacements**, **knee replacements**, and **limb reattachments**.

Hospitals also billed for treatment of coma (9 percent) and infection, including sepsis (6 percent).

Most residents returned to the same nursing home after discharge

Of residents who were discharged from the hospital after a fall with major injury, 86 percent returned to the same nursing home where they fell.

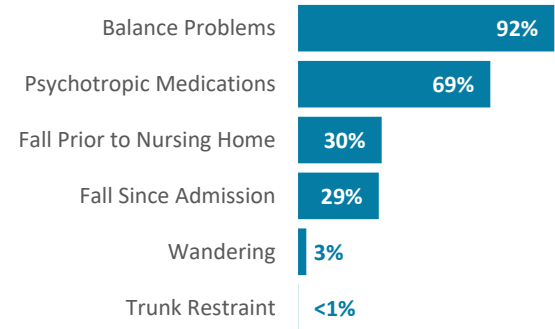
Fall Risk Factors

Nursing homes flagged almost all of these residents as having fall risk factors before the serious fall occurred

The MDS specifies six risk factors for falls, which CMS recommends that nursing homes assess upon resident entry and at least annually.³ CMS recommends that nursing homes consider these risk factors when creating and updating residents' person-centered care plans. The risk factors are:

- **balance problems** during transition;
- **psychotropic medications**;
- **fall prior to nursing home** entry;
- at least one **fall since admission** to the nursing home;
- **wandering**; and
- **trunk restraint** used in bed or chair (e.g., vests or belts).

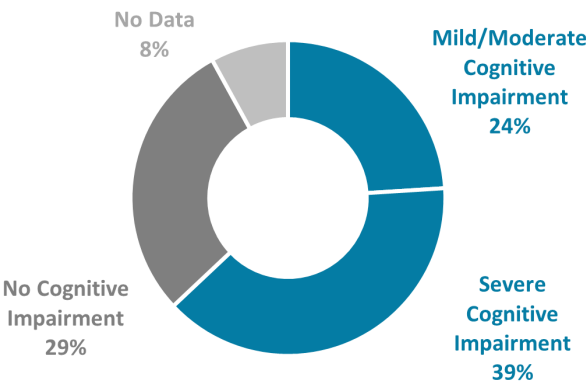
Nursing homes identified one or more of these risk factors for 98 percent of residents prior to their falls with major injury and hospitalization.⁴ The most commonly identified risk factors were balance problems and receiving psychotropic medications.



Most of the nursing home residents who were hospitalized for falls with major injury had cognitive and/or functional impairment prior to the fall

In addition to the six fall risk factors specified in the MDS, **functional and cognitive status have been shown to be associated with a higher risk of falls** among older adults.⁵

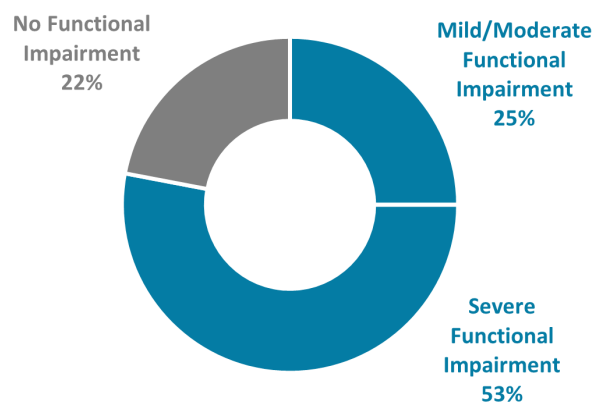
Sixty-three percent of residents who were hospitalized for a fall with major injury **were cognitively impaired**.



The MDS includes a series of questions to assess residents' cognitive function, which we used to categorize residents as having no cognitive impairment, mild/moderate cognitive impairment, or severe cognitive impairment. Sixty-three percent of residents who were hospitalized for a fall with major injury had either mild/moderate or severe cognitive impairment. Eight percent of residents did not have information about cognitive impairment in the assessment prior to the fall.

Seventy-eight percent of residents who were hospitalized for a fall with major injury were functionally impaired.

The MDS includes questions to assess residents' functional status to determine the level of assistance required to complete activities of daily living. We used these questions to categorize residents as having no functional impairment, mild/moderate functional impairment, or severe functional impairment. Seventy-eight percent of residents who were hospitalized for a fall with major injury had either mild/moderate or severe functional impairment.



Fall Rates by Resident and Stay Characteristics

Medicare-enrolled nursing home residents spent a combined total of approximately 396 million days in nursing homes during the 1-year review period. The average episode length of stay was 100 days in the nursing home, and the median length of stay was 29 days.

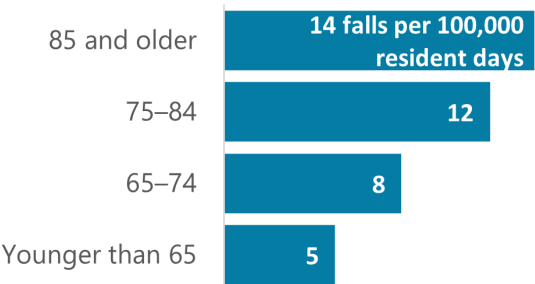
There were 42,408 falls with major injury and hospitalization among residents with this episode length of stay information.⁶ This corresponds to an **overall fall rate of 10.7 falls per 100,000 resident days**.

To explore which groups of residents fell most often, we calculated **fall rates by resident sex, age, and length of stay**.

Female residents had higher fall rates than male residents



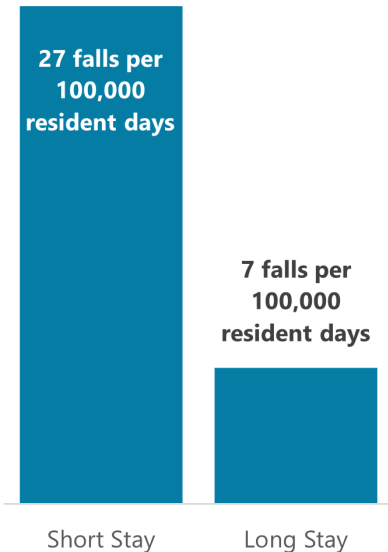
Older residents had higher fall rates than younger residents



Fall rates were three times higher for short stays than for long stays

Residents typically stay at a nursing home either for a short period of post-acute care (e.g., rehabilitation after a hospitalization) or for long-term care to support activities of daily living. Sixty-nine percent of all nursing home episodes over the 1-year period we reviewed were short stays (100 days or fewer), while 31 percent were long stays (101 days or more). The median length of stay for short-stay episodes was 18 days, while the median length of stay for long-stay episodes was 338 days.

During short stays there were 27 falls with major injury and hospitalization per 100,000 resident days, while during long stays there were 7 falls with major injury and hospitalization per 100,000 resident days.



Care Compare fall rates, measured as falls per episode, show the opposite pattern—that long-stay residents fall four times more than short-stay residents. This is due to differences in measurement. While short-stay residents experience fewer falls per episode than long-stay residents, when the much shorter time in the nursing home is accounted for, their fall rate per day is higher.

Nursing Home Characteristics

Most nursing homes in the country had residents who experienced falls with major injury and hospitalization

- Eighty-three percent of the approximately 15,000 nursing homes in the United States had one or more of these serious falls over the 1-year period we reviewed.
- Sixty-nine percent of nursing homes had three or fewer of these serious falls, but many nursing homes had more. For example, one nursing home had 23 falls with major injury and hospitalization.

To better understand the types of nursing homes in which residents had serious falls, we analyzed the relationship between fall rates and selected nursing home characteristics. Because many of the characteristics are related to each other—and potentially nursing homes’ fall rates—in complex ways, we used a regression to assess each characteristic’s independent association with falls per resident day. To help interpret the regression results, we then calculated predicted fall rates, changing the value of one characteristic at a time while holding all other characteristics fixed.

The characteristics we selected for our analysis were:

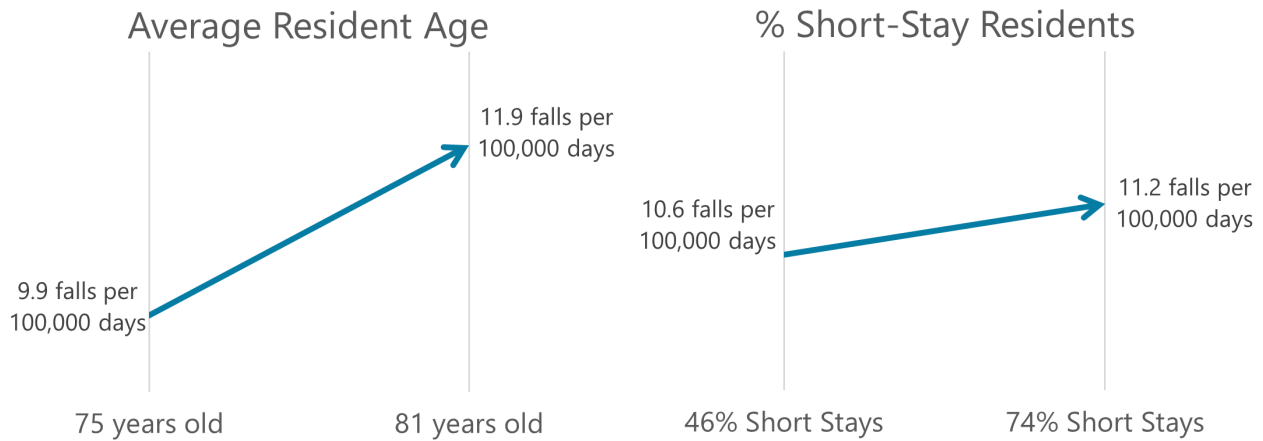
- resident average age;
- percentage of short-stay residents (versus long-stay residents);
- registered nurse (RN) staffing hours per resident day;
- overall star rating;
- ownership (for-profit, nonprofit, or Government-owned);
- number of residents;
- number of Medicare- and Medicaid-certified beds (hereafter referred to as “certified beds”); and
- rural location.

Refer to Appendix A for summary statistics and the full regression results.



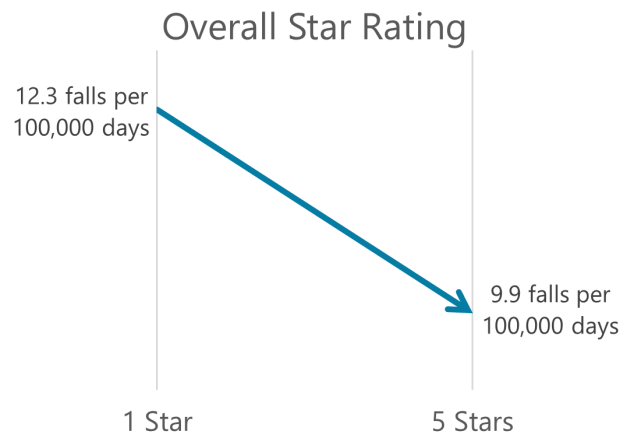
Nursing homes with more older residents and more short-stay residents had higher fall rates

Two of the nursing home characteristics we assessed—**average resident age** and **percentage of short-stay residents**—we calculated from the resident characteristics explored earlier. Consistent with those findings, both higher average resident age and higher percentage of short-stay residents **were associated with higher fall rates** at the nursing home level.



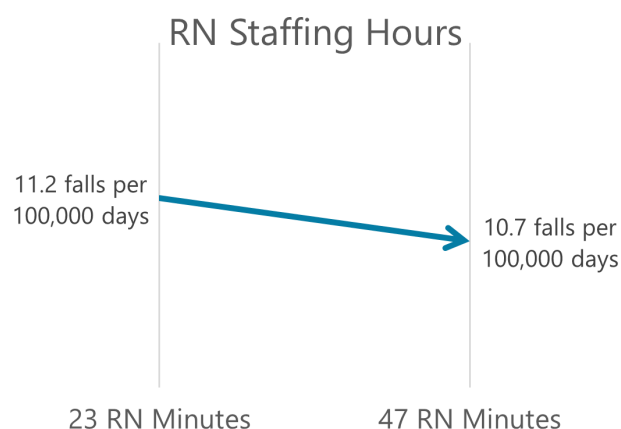
Higher nursing home overall star ratings were associated with lower fall rates

CMS assigns each nursing home an overall quality rating of one to five stars based on performance across the three domains of health inspections, staffing, and quality measures. Higher **overall star ratings** were associated with lower fall rates.



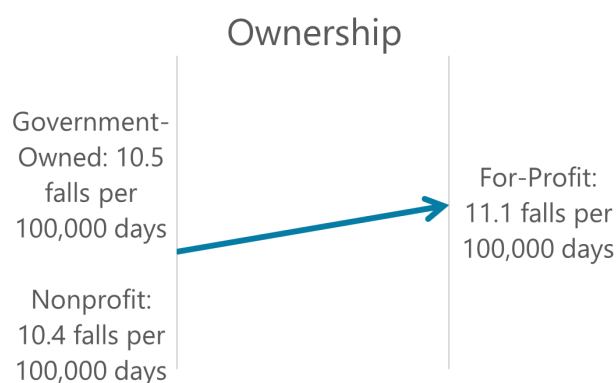
Nursing homes with more RN staffing were associated with lower fall rates

CMS collects data on nursing home staffing levels using the Payroll Based Journal. We examined RN staffing hours per resident per day. Nursing homes with more **RN time per resident per day** were associated with lower fall rates.



For-profit ownership was associated with higher fall rates

Nursing homes with different ownership structures (for-profit, nonprofit, and Government-owned) had different fall rates. **For-profit nursing homes** were associated with higher fall rates than nonprofit and Government-owned nursing homes.



Rural location had no effect on fall rates

There was no statistically significant association between rural and nonrural nursing home locations and fall rates.

What OIG Concludes

More than 40,000 Medicare-enrolled nursing home residents experienced serious falls—those resulting in major injury and hospitalization—over the 1-year review period. These falls reduced residents’ quality of life, and they were costly for the Medicare program, with more than \$800 million in related hospital payments. While not all falls can be prevented, implementation of comprehensive fall prevention programs has been shown to reduce falls in the nursing home setting.

CMS is actively working to improve provider reporting of falls in patient assessments and the accuracy of the quality measures for falls with major injury across post-acute-care settings. CMS also will begin to base bonus payments to nursing homes on fall rates beginning in 2027. It is our hope that the new information in this report; CMS’s actions in this area; and the renewed focus on nursing home safety and reducing unnecessary costs in Medicare will spur nursing homes to implement more robust fall prevention programs and other quality improvement initiatives to better serve nursing home residents going forward.

Detailed Methodology

For our companion report, [*Nursing Homes Failed To Report 43 Percent of Falls With Major Injury and Hospitalization Among Their Medicare-Enrolled Residents \(OEI-05-24-00180\)*](#), we identified falls with major injury and hospitalization among Medicare-enrolled nursing home residents. We limited our review to nursing home residents who were discharged from the nursing home (to be admitted to the hospital) between July 1, 2022, and June 30, 2023. Refer to that report for methods used to identify these nursing home residents and falls.

In this data snapshot, we included an additional 628 falls to those in the companion report. These falls did not have discharge assessments within 1 day of the start of the hospitalization, so they were not included in that analysis of falls reporting. However, they are included in this analysis to provide a complete picture of all falls we identified in the inpatient claims among Medicare-enrolled nursing home residents.

Data Sources

Medicare Claims and Encounters

We used both Medicare fee-for-service claims and managed care encounters (hereafter, referred to as “claims”) to examine the hospital care resulting from falls with major injury. Inpatient hospital claims were used to identify hospital admissions for falls with major injury and treatments received from the hospital after the fall. We used inpatient hospital and professional claims to determine the costs of the hospital admissions.

Minimum Data Set Assessments

We used the MDS assessments of people who experienced a fall with major injury and hospitalization during the 1-year review period (July 1, 2022, through June 30, 2023). We used information from discharge assessments that were completed because of the hospital admission, as well as regular assessments prior to the fall and the assessment immediately following the fall for people who returned to a nursing home after the hospital stay.

Additionally, we used MDS assessments to determine the total number of residents who lived in each nursing home during the 1-year review period.

Medicare Enrollment Database

We used the Medicare Enrollment Database (EDB) from calendar years 2022 and 2023 to determine date of birth, sex, and date of death of nursing home residents. We linked between the Medicare EDB and MDS at the resident level, using Medicare identification numbers.

The Medicare claims and EDB information along with MDS assessments were extracted from CMS’s Integrated Data Repository Cloud system in November and December of 2024.

Care Compare Provider Data Catalog

We used data for Nursing Homes Including Rehab Services from CMS's Provider Data Catalog from November 2023 to identify nursing home-level characteristics.⁷

Data Analysis

Diagnoses

We used diagnosis codes from inpatient hospital claims to identify major injuries as specified in the MDS: bone fractures, joint dislocations, closed head injuries with altered consciousness, and subdural hematomas.

Billing Codes

We used Diagnostic-Related Group (DRG) billing codes in the inpatient claims to determine the type of care for which the hospital billed. We grouped DRG codes into the following categories based on keywords in their descriptions: Fractures, Coma, and Sepsis/Infection.

Death at the hospital was determined from date of death and date of hospital discharge. If the date of death from the Medicare EDB was the same as the hospital discharge date from the inpatient hospital claim, then we determined that the person died during the hospital stay.

Costs of Hospital Care

Costs of hospital care were derived from Medicare Parts A and B claims and Part C encounters for hospital services. From Part A, inpatient fee-for-service claims, we totaled the Medicare-paid and enrollee cost-sharing components. We then identified any Part B professional claims that occurred on the same dates as the Part A inpatient claims with the following place of service codes: IP Hospital, ER-Hospital, Ambulance-Land, OP Hospital, Ambulance-Air/Water, Off Campus-OP Hospital, and Urgent Care Facility. We added the Medicare and enrollee cost-sharing payment amounts for these professional claims to the Part A claim amounts to get the total fee-for-service payment for the hospital care.⁸ For encounter records, we followed the same steps but used the payment amounts reported by Medicare Advantage organizations on the encounter records.

Fall Risk Factors

We created six categories from the following fall risk factors defined by the MDS:

- wandering,
- balance problems,
- trunk restraint use (whether a resident used a trunk restraint in bed and/or in a chair),
- high-risk medication use (whether a resident received antianxiety or antidepressant medication),

- falls prior to entering the nursing home (whether a resident fell within 1–30 days and/or 31–180 days before entering the nursing home), and
- falls at the nursing home (whether a resident fell at the nursing home).

For this evaluation, we defined “high-risk medications” as four categories of psychotropics tracked in the MDS: antianxiety medications, antidepressants, antipsychotics, and hypnotics (in contrast to the two classes listed above as fall risk factors in the MDS manual).

We determined whether the nursing home identified that the resident had each of the risk factors before the fall occurred. We used the most recent relevant MDS assessment within 100 days prior to the fall. We limited our review to assessments within 100 days to focus on the factors most likely to influence the fall.

Cognitive Impairment

We used the first regular assessment in which the cognitive screening section of the MDS should have been administered prior to the fall to examine cognitive impairment. We used items from the MDS Brief Interview for Mental Status and cut-points specified in the MDS manual to classify residents as having no cognitive impairment (i.e., they were cognitively intact), moderate impairment, or severe impairment. Residents who did not have an MDS assessment of the type that includes the cognitive screening section, or did not have the cognitive screening score present in their assessment, were classified as “no data.”

Functional Impairment

We used the first relevant assessment prior to the fall to examine functional impairment prior to the fall. In these assessments, nursing home staff are asked to report on the amount of help they provide with several activities of daily living. We focused on the following six activities:⁹

- bed mobility (movement while in a lying position),
- transfer (movement between surfaces [i.e., from a bed to a wheelchair]),
- walking in their room,
- walking in the corridor,
- locomotion on the unit (movement to and from closer locations [in room and to other rooms in the same corridor]), and
- locomotion off the unit (movement to and from farther locations).

We considered the resident impaired for each activity if they were coded as requiring extensive assistance or having total dependence or if they did not do the activity. We considered them unimpaired for each activity if a resident was coded as independent, requiring supervision, or requiring limited assistance.

Then, we combined impairment ratings across all activities. We considered the resident to have moderate functional impairment if they were impaired for one to three activities. We considered the resident to have severe functional impairment if they were impaired for at least four activities. Less

than 1 percent of residents did not have an MDS assessment of the type that includes the functional assessment section or were missing responses to the items assessing functional assessment, so the share classified as “no data” is not displayed in the results.

Resident-Level Demographics

Resident age was calculated as the time between resident date of birth, from the Medicare EDB, and July 1, 2022, the start of our study period. We divided nursing home residents into groups based on age: younger than 65, 65–74, 75–84, and 85 and older. We obtained the residents’ sex from the Medicare EDB.

We then calculated fall rates separately for residents by group (age and sex). To do this, we determined the number of falls among the group and then divided by the total number of nursing home resident days in the 1-year period for that group. Residents without the MDS assessments needed to define the start and end dates of the nursing home episode were excluded from this calculation (and all following fall rate calculations). For example, to calculate the fall rate among female residents, we determined the number of falls among female nursing home residents, and then we determined the number of resident days for female nursing home residents. To get the fall rate, we divided the number of falls among female residents by the total number of resident days for female residents and multiplied by 100,000 to scale the fall rate as falls per 100,000 resident days.

Long-Stay Versus Short-Stay Determination

Nursing home length of stay was calculated from dates on MDS assessments. We followed the methods described in CMS’s *MDS 3.0 Quality Measures User’s Manual* to group assessments into episodes for each resident.¹⁰ We then classified episodes into short versus long stays on the basis of cumulative days in the nursing home. Short stays were stays between 0 and 100 days, and long stays were stays that were 101 days or longer.

We calculated fall rates separately for short stays and long stays. As with age and sex above, we divided the number of falls for each group by the number of resident days across all episodes in that group to calculate falls per 100,000 resident days.

Nursing Home Characteristics

We examined the association between nursing home characteristics and fall rates using regression analysis.

First, we identified all nursing home residents with MDS assessments with reference dates between July 1, 2022, and June 30, 2023. We then limited our review to those residents enrolled in Medicare by keeping only records we could link to Medicare enrollment information in the Medicare EDB using Medicare identification numbers.

For each nursing home with Medicare-enrolled residents, we calculated the total number of falls and the total number of days spent in the nursing home among those residents (i.e., resident days) over the 1-year review period. We determined the following for each nursing home (with data source noted):

- resident average age (EDB linked with MDS),
- percentage of short-stay residents (versus long-stay residents) (MDS),
- reported RN staffing hours per resident day (Care Compare),
- overall star rating (Care Compare),
- ownership (for-profit, nonprofit, or Government-owned) (Care Compare),
- number of residents (MDS),
- number of certified beds (Care Compare), and
- rural location (ZIP code from Care Compare linked with the Health Resources and Services Administration's list of rural ZIP codes).

We used facility identification numbers from CMS's Certification and Survey Provider Enhanced Reports system to link between these data sources.

Then, we calculated summary statistics for these nursing homes. We calculated medians and/or means for continuous measures (numbers of certified beds and Medicare-enrolled residents, percentage of long-stay residents, average age, RN staffing hours, falls, resident days, and falls per 100,000 resident days) and percentages for categorical measures (star rating, ownership, and rural location).

To understand relationships between each of these factors and fall rates, we used negative binomial regression to understand which factors were associated with nursing home-level fall rates controlling for the other actors in the model. We selected a negative binomial model because the dependent variable, the number of falls, is a count variable (always zero or greater, whole integer values). We used number of resident days as the offset to scale the outcome to falls per resident day (i.e., fall rate) to account for the varying exposure time of each nursing home's residents. We included the following nursing home characteristics in the negative binomial regression: number of Medicare-enrolled residents, number of certified beds, resident average age, percentage of short-stay (versus long-stay) episodes, reported RN staffing hours per resident per day, overall star rating, ownership, and rural location. We log transformed the continuous variables, except for resident average age, to reduce the influence of outliers.

Finally, to interpret the regression results, we used the negative binomial regression model to predict fall rates, varying one factor at a time, holding all other factors at their actual values. These can be interpreted as sample average marginal effects or sample average incremental effects. We then plotted these marginal or incremental effects as slope graphs to illustrate visually how predicted fall rate changes when each factor changes.

Limitations

This analysis may not have identified all falls with major injury that resulted in a Medicare-paid hospitalization among nursing home residents. For example, this analysis was based on diagnosis codes for falls and injuries in Medicare hospital claims; therefore, we may not have identified falls with major injury among nursing home residents if the inpatient hospital claims did not fully capture the cause and extent of patients' injuries. Additionally, OIG and others have found that Medicare Advantage encounter records are often less complete than traditional Medicare claims.^{11, 12} As a

result, we may not have identified all falls leading to hospitalization among people enrolled in Medicare Advantage.

Finally, for the characteristics of the residents who fell and the nursing homes described in this report, we could not examine people or nursing homes with missing data. Throughout the findings, we note how missing data were treated in the analyses. There are people for whom we did not have MDS assessments prior to or after the fall; as such, we could not describe aspects of those people derived from those assessments. There was a small share of nursing homes that had residents during our review period per the MDS but that did not have a match to the Care Compare or had missing information in those data. We omitted those nursing homes from calculations for which they did not have data. For calculation of fall rates, we excluded residents who did not have well-constructed episodes in the MDS as defined by CMS.

Standards

We conducted this study in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

Appendix

Appendix A: Nursing Home Characteristics Associated With Changes in Fall Rates

Table A-1: Nursing home characteristics summary statistics

Characteristic	Statistic
Number of nursing homes	14,218
Number of certified beds, median	100
Number of residents, median	202
Percentage of short-stay residents, median	60.9%
Average age (years), mean	77.9
Reported RN hours per resident per day, median	0.55 hours/33 minutes
Overall star rating (%)	
1 star (lowest)	23.4%
2 stars	20.6%
3 stars	19.4%
4 stars	18.1%
5 stars (highest)	18.5%
Rural location (%)	34.2%
Ownership (%)	
For-profit	71.9%
Nonprofit	22.0%
Government	6.1%
Falls with major injury and hospitalization, median	2
Number of resident days, median	24,291
Fall rate, median falls per 100,000 resident days, median	9.5

Note: Our review was limited to nursing homes with no missing values in the nursing home characteristics analyzed here.

Source: OIG analysis of Medicare claims, MDS assessments from July 2022 through June 2023, and Care Compare data from November 2023.

Table A-2: Regression results: association between nursing home characteristics and fall rates

Parameter	Estimate	Standard Error	P-Value
Intercept	-11.390	0.149	<0.0001
Ln (number of residents)	0.372	0.021	<0.0001
Ln (number of beds)	-0.435	0.021	<0.0001
Ln (percentage of short-stay residents)	0.117	0.028	<0.0001
Average age (years)	0.031	0.002	<0.0001
Ln (reported RN hours per resident per day)	-0.090	0.015	<0.0001
Overall star rating			
1 star (lowest)	Ref.		
2 stars	-0.109	0.018	<0.0001
3 stars	-0.098	0.018	<0.0001
4 stars	-0.189	0.019	<0.0001
5 stars (highest)	-0.219	0.021	<0.0001
Nonrural	Ref.		
Rural	0.018	0.015	0.2230
Ownership			
For-profit	Ref.		
Nonprofit	-0.067	0.016	<0.0001
Government	-0.055	0.028	0.0473
N	14,218		

Notes: Results are from a negative binomial regression; outcome = number of falls (at the nursing home level); offset = number of resident days; Ref. = reference group.

Source: OIG analysis of Medicare claims, MDS assessments from July 2022 through June 2023, and Care Compare data from November 2023.

Endnotes

¹ In this data snapshot, we included an additional 628 falls to those in the companion report, [Nursing Homes Failed To Report 43 Percent of Falls With Major Injury and Hospitalization Among Their Medicare-Enrolled Residents \(OEI-05-24-00180\)](#). Falls without discharge assessments within 1 day of the start of the hospitalization were not included in that analysis of unreported falls. However, those falls are included in this data snapshot to provide a complete picture of all the falls we did identify in the inpatient hospital claims among Medicare-enrolled nursing home residents.

² Our analysis did not assess whether the residents' falls were the direct cause of their death while hospitalized.

³ CMS, [Long-Term Care Facility Resident Assessment Instrument 3.0 User's Manual](#), Version 1.17.1, Section 2.7 and Chapter 4. Accessed on Oct. 31, 2024.

⁴ Twenty-two percent of residents who had a fall with major injury did not have a relevant MDS assessment during the 100 days prior to the fall; as such, they were not included in the calculations of percentages of residents with these fall risk factors. Of the remaining 78 percent of residents, not all had responses to every MDS item used to determine the six fall risk factors in the assessment completed prior to the fall. If a response is missing for a given item, the resident was counted as not having that risk factor. This means that the percentages for the individual risk factors are likely lower than the true prevalence.

⁵ Karolina Minta, Giorgio Colombo, William R. Taylor, and Victor R. Schinazi, ["Differences in fall-related characteristics across cognitive disorders,"](#) *Frontiers in Aging Neuroscience*, vol. 15, June 8, 2023. Accessed on Mar. 27, 2025. Magdalena Sylwia Kamińska, Jacek Brodowski, and Beata Karakiewicz, ["Fall Risk Factors in Community-Dwelling Elderly Depending on Their Physical Function, Cognitive Status and Symptoms of Depression,"](#) *International Journal of Environmental Research and Public Health*, vol. 12, no. 4, Mar. 24, 2015, pp. 3406–3416. Accessed on Mar. 27, 2025.

⁶ We could not link 456 falls to a well-constructed episode using MDS assessments. These falls were excluded from the analyses of fall rates because the number of days the resident was in the nursing home could not be determined.

⁷ Downloaded from [Nursing homes including rehab services | Provider Data Catalog](#) on Dec. 21, 2023.

⁸ Enrollees with supplemental coverage may not be responsible for paying the full cost-sharing amount for hospital services. The claims do not allow us to distinguish between enrollee cost-sharing paid by enrollees and these policies. Therefore, we counted the total enrollee cost-sharing as "Medicare or enrollee" payments for care in these estimates.

⁹ Andrea Wysocki, Kali S. Thomas, and Vincent Mor, ["Functional Improvement Among Short-Stay Nursing Home Residents in the MDS 3.0,"](#) *Journal of the American Medical Directors Association*, vol. 16, no. 6, June 1, 2015, pp. 470–474. Accessed on Apr. 23, 2025.

¹⁰ CMS, [MDS 3.0 Quality Measures User's Manual](#), Version 16.0, Chapter 4. Accessed on May 5, 2025.

¹¹ OIG, [*CMS's Encounter Data Lack Essential Information That Medicare Advantage Organizations Have the Ability To Collect \(OEI-03-19-00430\)*](#), Aug. 24, 2020.

¹² Sean Creighton, Robin Duddy-Tenbrunsel, and James Michel, [*"The Promise And Pitfalls Of Medicare Advantage Encounter Data," Health Affairs Forefront*](#), Feb. 25, 2019. Accessed on May 10, 2023.

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