

The Cost of Patient Safety Events to Medicare

Introduction

Patient safety events (PSEs) remain a persistent challenge in the U.S. healthcare system, and Medicare beneficiaries continue to be at high risk of experiencing medical errors. PSEs comprise both those that should have been prevented by medical staff and those that occurred in the course of treatment that could not have been prevented.

Studies^{1,2} have found that the occurrence of PSEs is significantly associated with a longer length of stay. The marginal increase in length of stay associated with PSEs, however, has not been quantified in a representative sample of Medicare beneficiaries. Nevertheless, the extent to which PSEs extend length of stay can have significant cost impacts on the Medicare Trust Fund.

The Beneficiary and Family Centered Care (BFCC) National Coordinating & Oversight Review Center (NCORC) undertook a study to:

- 1. Measure how much PSEs extend length of stay.
- 2. Estimate additional days in hospital and financial costs to Medicare resulting from the occurrence of PSEs.

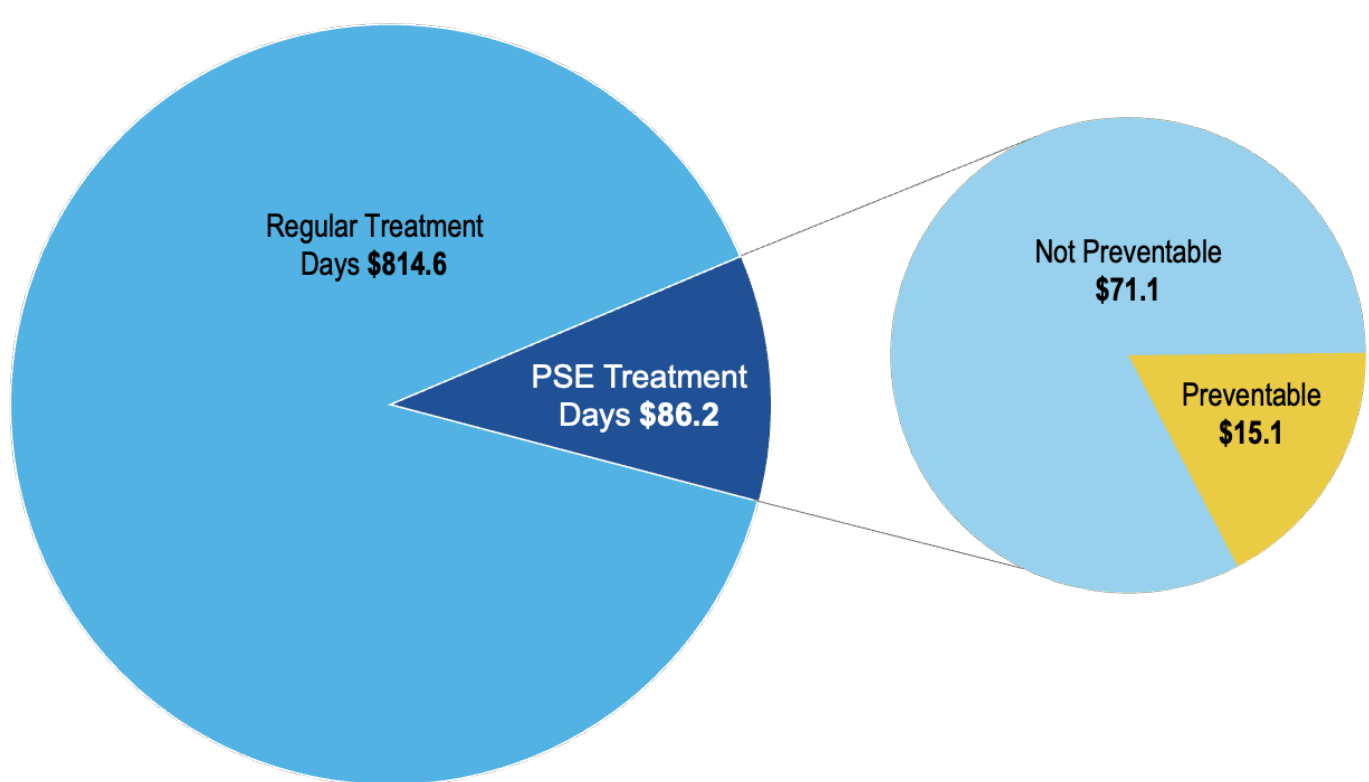
Methods

This analysis used BFCC NCORC patient safety review data. The BFCC NCORC randomly drew 4,000 medical records from the Agency for Healthcare Research and Quality (AHRQ) Quality and Safety Review System (QSRS) records proportional to the number of cases in each hospital type in the QSRs records.

The patient safety reviews provided information on the occurrence of PSEs and, if present, descriptive information about the PSE. To estimate the national burden caused by PSEs, we developed sampling weights to match Medicare Part A (Original Medicare) and Part C (Medicare Advantage) hospitalizations in 2021 related to age, sex, race, length of stay, and State.

We projected additional days of hospitalization and additional payments associated with the occurrence of PSEs by national Medicare plans in 2021. To calculate this payment, we multiplied additional days of hospitalization by Medicare average payment per day for in-hospital care. According to CMS-published data, all Medicare inpatient hospital program payment per covered day in 2021 is approximately \$2,600.³

Estimated Annual Cost of PSEs, Compared to Medicare Expenditures in 2021 (\$ Billions)



Results

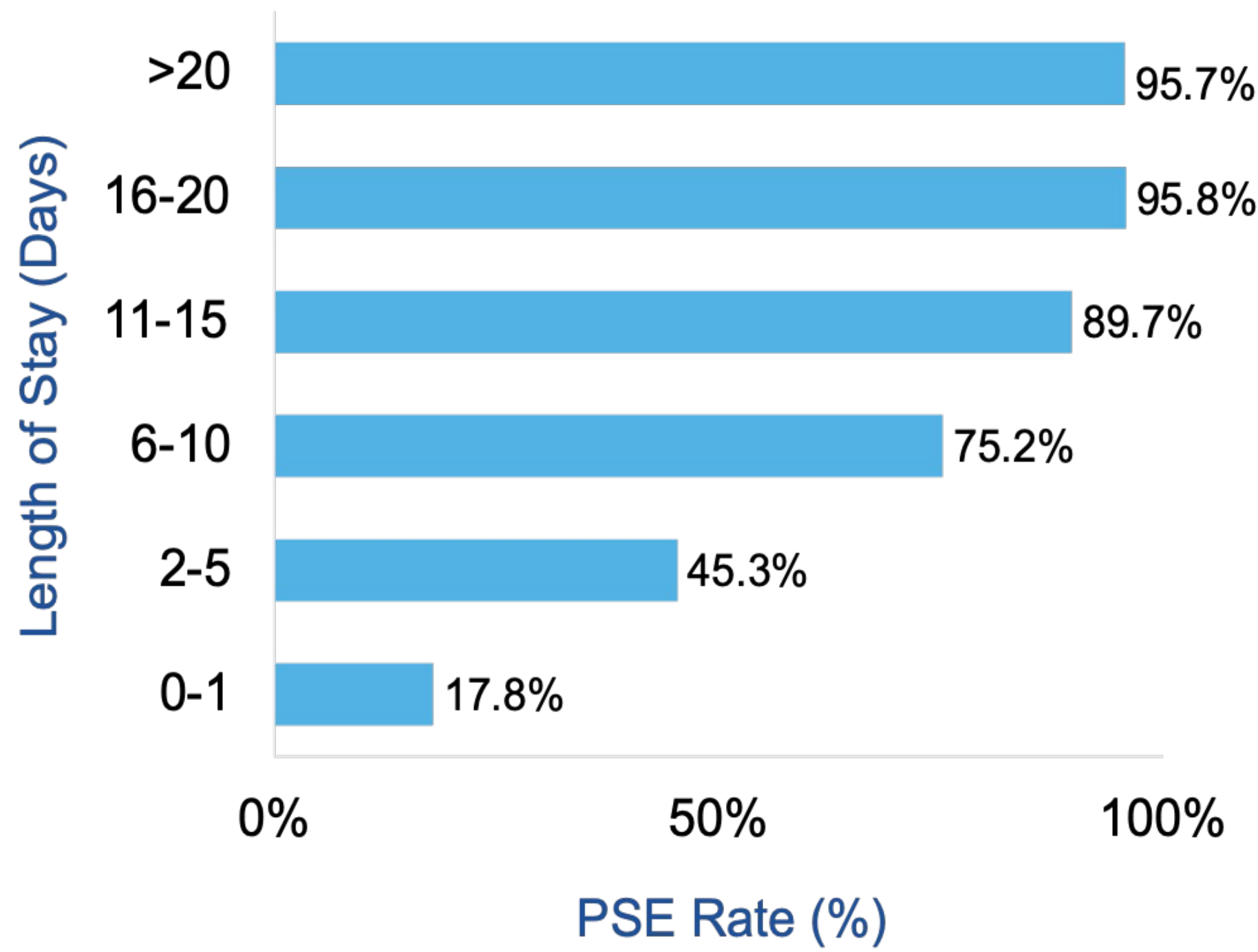
General Characteristics of the Sample

The BFCC NCORC found that 53.3 percent of beneficiaries had one or more PSEs. The PSE rate was lowest among beneficiaries with a length of stay of up to one day (17.8%) and highest among beneficiaries with a length of stay longer than 16 days (greater than 95%).

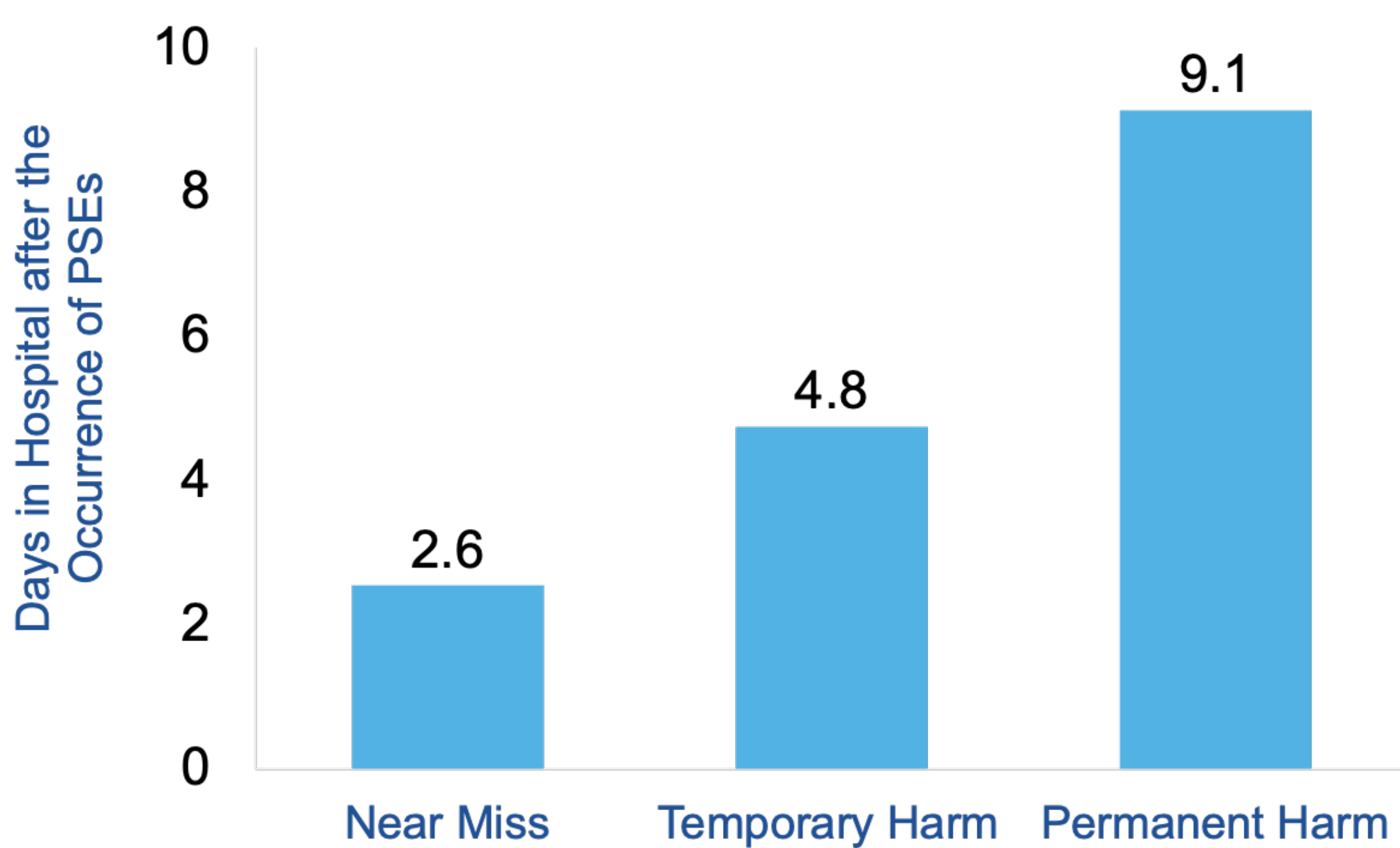
Additional Hospitalized Days Associated with PSEs

The length of stay after a PSE varied significantly according to the severity of the event. The average number of days in the hospital after the occurrence of the first PSE of cases with PSEs that were categorized as near miss, caused temporary harm, or permanent harm were 2.6, 4.8, and 9.1 days, respectively.

Association of Length of Stay and PSE Rate



Days in Hospital After the Occurrence of PSEs by Severity



National Estimation of Additional Inpatient Care and Medicare Payments Led by PSEs

The NCORC estimates that PSEs could cause an additional 32.5 million days in hospitals and \$86.2 billion annually. The total Medicare expenditure for 2021 was \$900.8 billion.⁴ PSEs cost about one-tenth of Medicare spending (9.6%).

The preventability of PSEs was determined by physician reviewers using a decision algorithm. Preventable and not preventable PSEs were associated with 11.5 and 3.6 additional days in the hospital per patient. Preventable PSEs caused about 5.7 million days of hospitalization care and \$15.1 billion dollars of Medicare spending, about 1.7 percent of the total Medicare spending.

PSE-Associated Additional Dates of Hospitalization and Additional Payment for National Medicare in 2021

PSE Category	Additional Days of Hospitalization (Million Days)	Additional Payments (\$ Billions)	Percentage of Total Medicare Program (%)
Not Preventable	26.8	\$71.1	7.9%
Preventable	5.7	\$15.1	1.7%
Total	32.5	\$86.2	9.6%

References

1. Sousa, P., Uva, A. S., Serranheira, F., Nunes, C., & Leite, E. S. (2014). Estimating the incidence of adverse events in Portuguese hospitals: a contribution to improving quality and patient safety. BMC health services research, 14(1), 1-6.
2. Paradis, A. R., Stewart, V. T., Bayley, K. B., Brown, A., & Bennett, A. J. (2009). Excess cost and length of stay associated with voluntary patient safety event reports in hospitals. American Journal of Medical Quality, 24(1), 53-60.
3. CMS Program Statistics - Medicare Inpatient Hospital. Centers for Medicare & Medicaid Services Data. <https://data.cms.gov/summary-statistics-on-use-and-payments/medicare-service-type-reports/cms-program-statistics-medicare-inpatient-hospital> (2021).
4. Centers for Medicare and Medicaid Services. National Health Expenditure Fact Sheet. (2023). <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NHE-Fact-Sheet>