MCBS
Medicare Current Beneficiary Survey

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES
OFFICE OF ENTERPRISE DATA & ANALYTICS

Data Highlight **December 2024**

Prevalence of Long COVID among community-dwelling Medicare beneficiaries between Fall 2022 and Summer 2023

Nicholas H. Schluterman, William Doss

Data from the Medicare Current Beneficiary Survey (MCBS)

Millions of Americans experience symptoms that persist for months after an initial SARS-CoV-2 (COVID-19) infection.[1] These Long COVID symptoms may include shortness of breath, fatigue, brain fog, heart problems, loss of taste or smell, and many others, representing a substantial burden to the nation's overall health.[2] Understanding who is likely to have Long COVID may help health care providers and public policy planners to tailor interventions and anticipate serious complications.[3]

Using data from the 2022 Medicare Current Beneficiary Survey (MCBS) Survey File, this analysis examined the characteristics of beneficiaries who were most likely to have Long COVID from fall 2022 to summer 2023. The analytic sample included 7,458 beneficiaries, weighted to represent a national sample of 59.6 million community-dwelling beneficiaries who were enrolled in Medicare at any point in 2022.

KEY FINDINGS

- Long COVID was more common among Medicare beneficiaries aged < 65 than among older beneficiaries. This was true for all community-dwelling beneficiaries, and among beneficiaries who had an initial COVID infection.
- Beneficiaries who received a COVID vaccination were significantly less likely to have Long COVID.
- Beneficiaries with more chronic conditions were also more likely to have Long COVID. The beneficiaries with the highest rates of Long COVID also had pulmonary disease, arthritis, and heart conditions.

Figure 1: Questionnaire flow of COVID-19 and Long COVID questions on the Medicare Current Beneficiary Survey (MCBS).

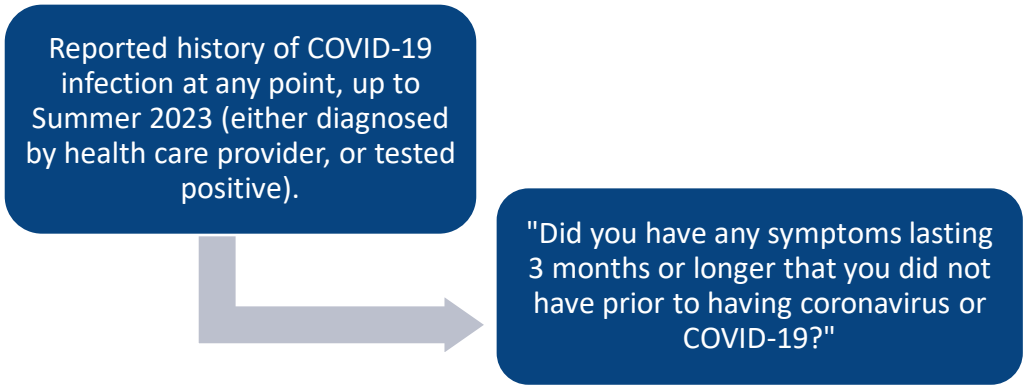
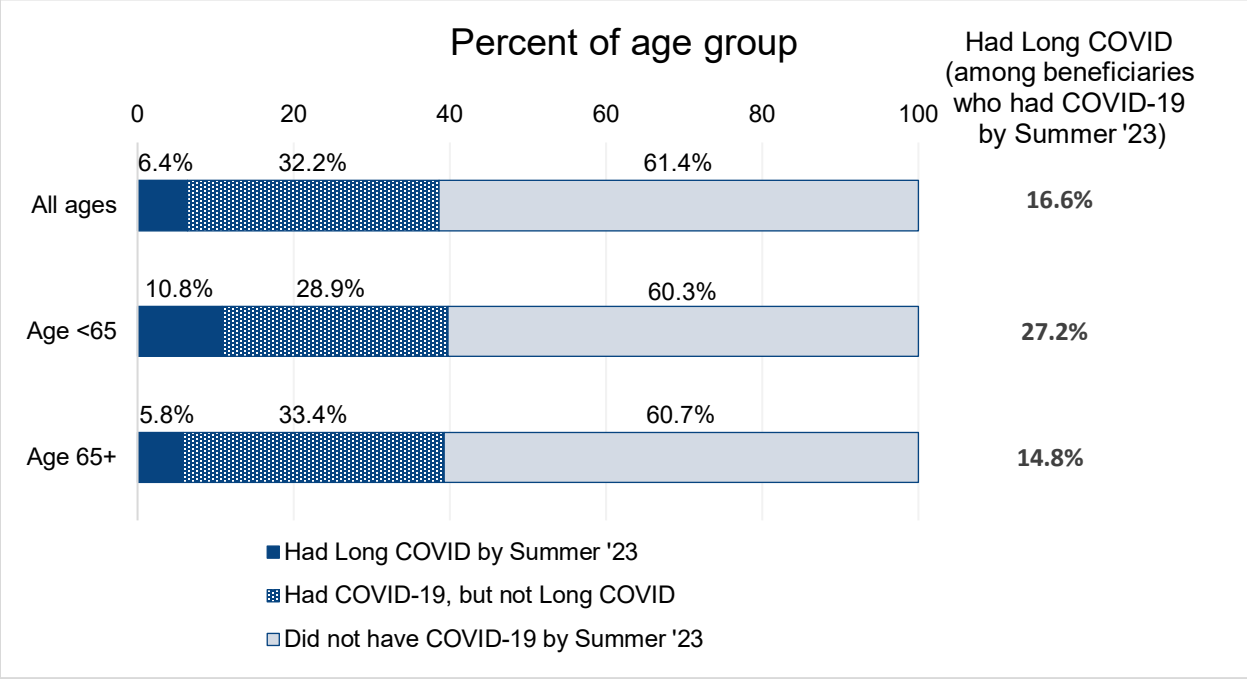


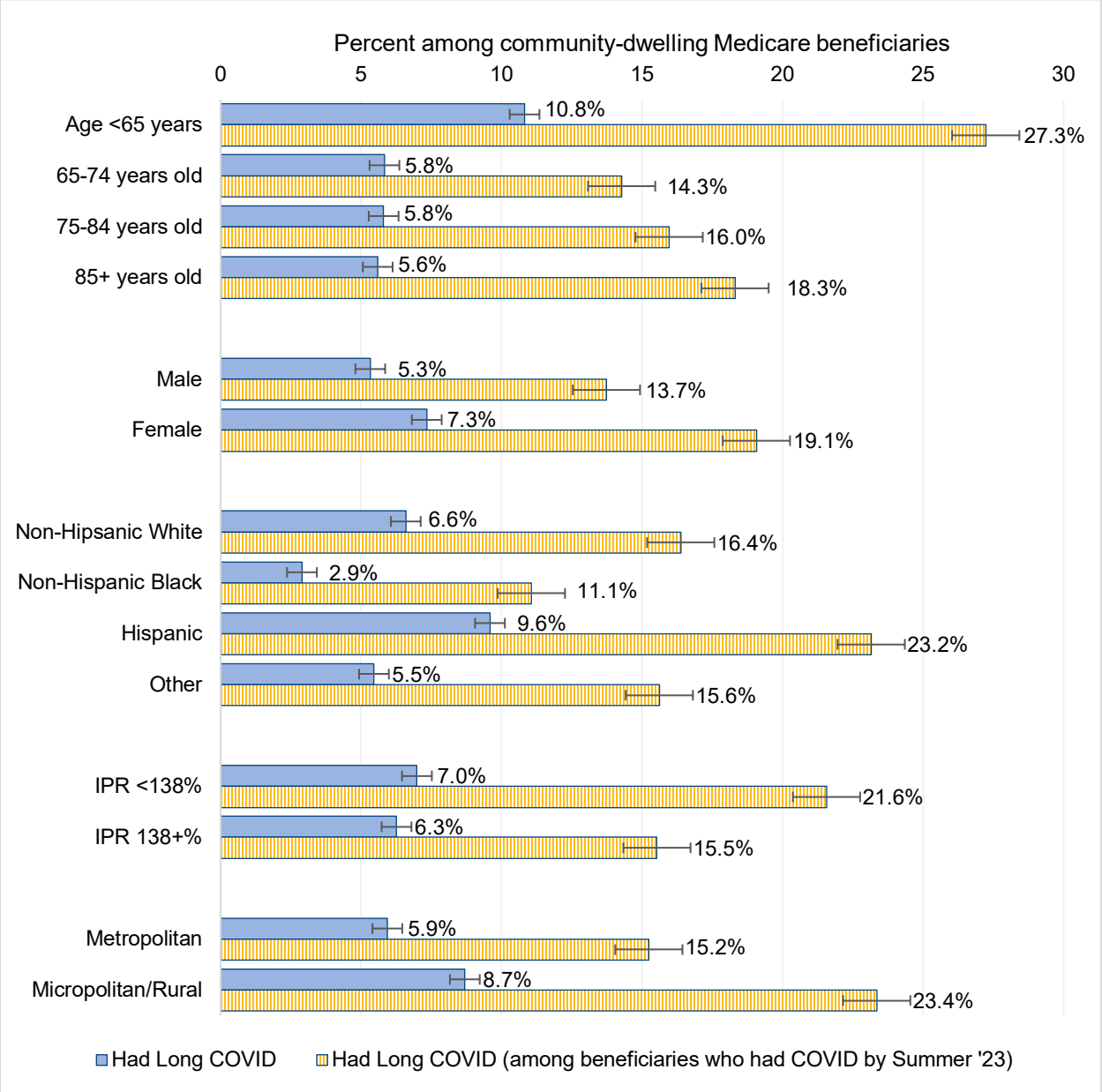
Figure 2: Occurrence of Long COVID among community-dwelling Medicare beneficiaries, Summer 2023.



SOURCE: 2022 Medicare Current Beneficiary Survey (MCBS). Estimates weighted to represent the national population of beneficiaries who were alive, enrolled in Medicare at any point in 2022, and living in the community at the time of their interviews in fall 2022 and summer 2023 (unweighted n=7,458, weighted n=59.6 million). Age refers to age at the beginning of 2022.

- By Summer 2023, approximately one out of ten (10.8%) community-dwelling Medicare beneficiaries under the age of 65 had experienced Long COVID, defined as persistent symptoms that lasted 3 months or longer after an initial COVID-19 infection. This figure represents 27.2% of beneficiaries in this age group who had a COVID-19 infection.
- Among community-dwelling Medicare beneficiaries aged 65 and over, approximately one out of 20 (5.8%) experienced Long COVID during this same time frame. This was 14.8% of beneficiaries in this age group who had a COVID-19 infection.

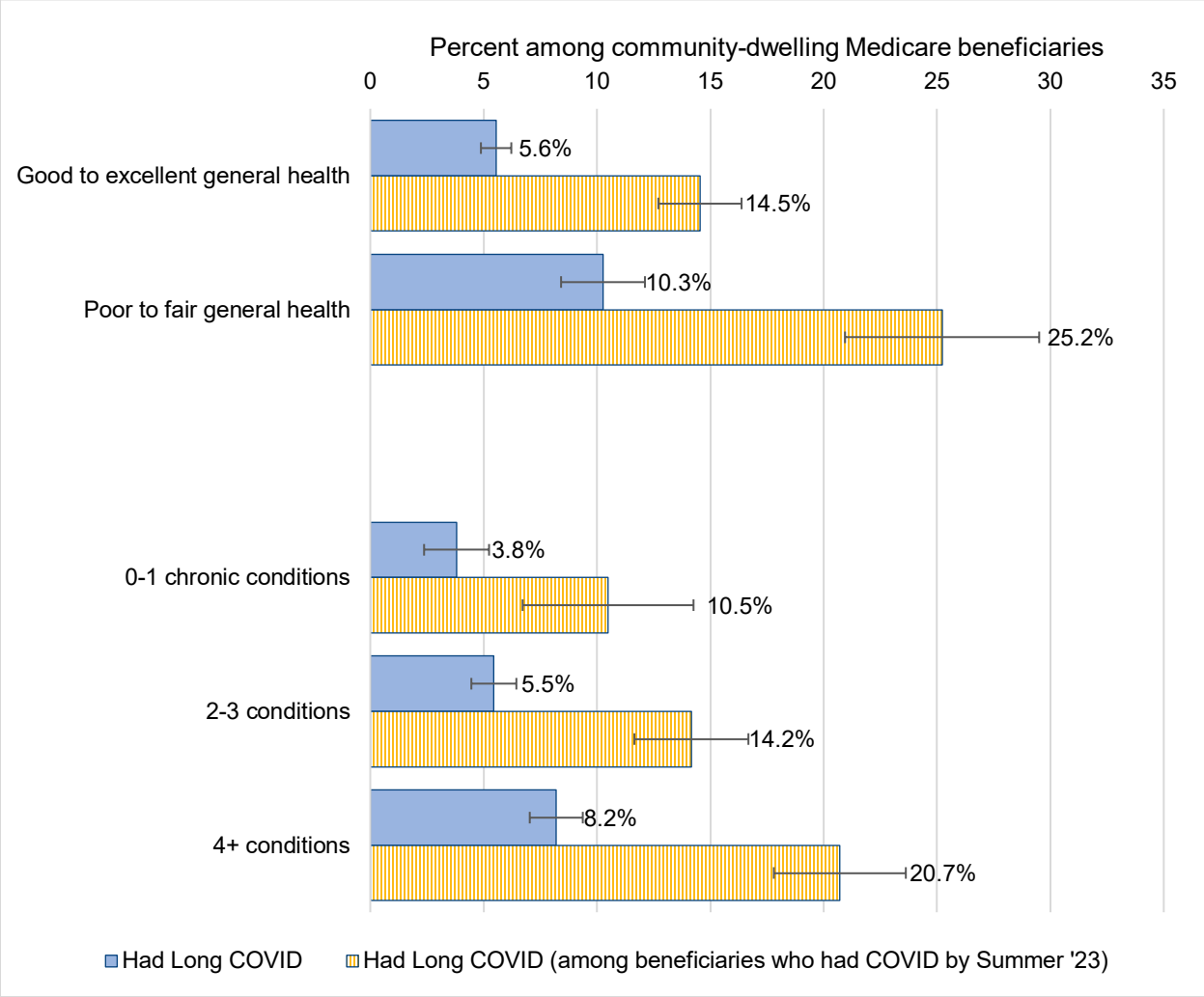
Figure 3: Prevalence of Long COVID among community-dwelling Medicare beneficiaries, by socio-demographic characteristics, Summer 2023.



SOURCE: 2022 Medicare Current Beneficiary Survey (MCBS). IPR: income-to-poverty ratio, using 2022 federal poverty guidelines. Estimates weighted to represent the national population of beneficiaries who were alive, enrolled in Medicare at any point in 2022, and living in the community at the time of their interviews in fall 2022 and summer 2023 (unweighted n=7,458, weighted n=59.6 million). Age refers to age at the beginning of 2022. Error bars represent 95% confidence intervals of the proportions.

- Among community-dwelling Medicare beneficiaries, female beneficiaries were more likely to experience Long COVID than male beneficiaries.
- Non-Hispanic Black beneficiaries were less likely to develop Long COVID than Non-Hispanic White beneficiaries.
- Long COVID was more common among beneficiaries living in micropolitan and rural areas than among metropolitan residents.

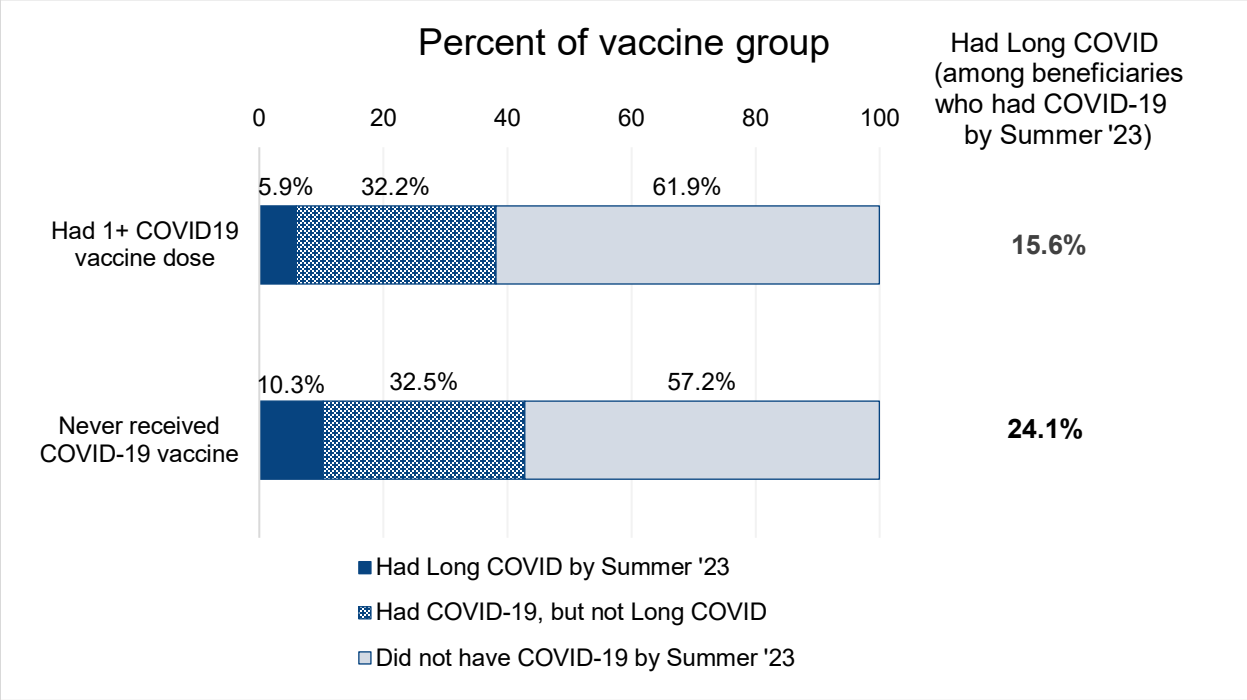
Figure 4: Prevalence of Long COVID among community-dwelling Medicare beneficiaries, by health status, Summer 2023.



SOURCE: 2022 Medicare Current Beneficiary Survey (MCBS). Estimates weighted to represent the national population of beneficiaries who were alive, enrolled in Medicare at any point in 2022, and living in the community at the time of their interviews in fall 2022 and summer 2023 (unweighted n=7,458, weighted n = 59.6 million). General health was self-reported, compared to other people of the beneficiary's age. See *Definitions* section for a list of the 13 included chronic conditions. Error bars represent 95% confidence intervals of the proportions.

- Beneficiaries who perceived their general health as good to excellent were less likely to have Long COVID than their peers whose general health was rated as poor to fair.
- Beneficiaries with more chronic conditions were more likely to also have Long COVID.

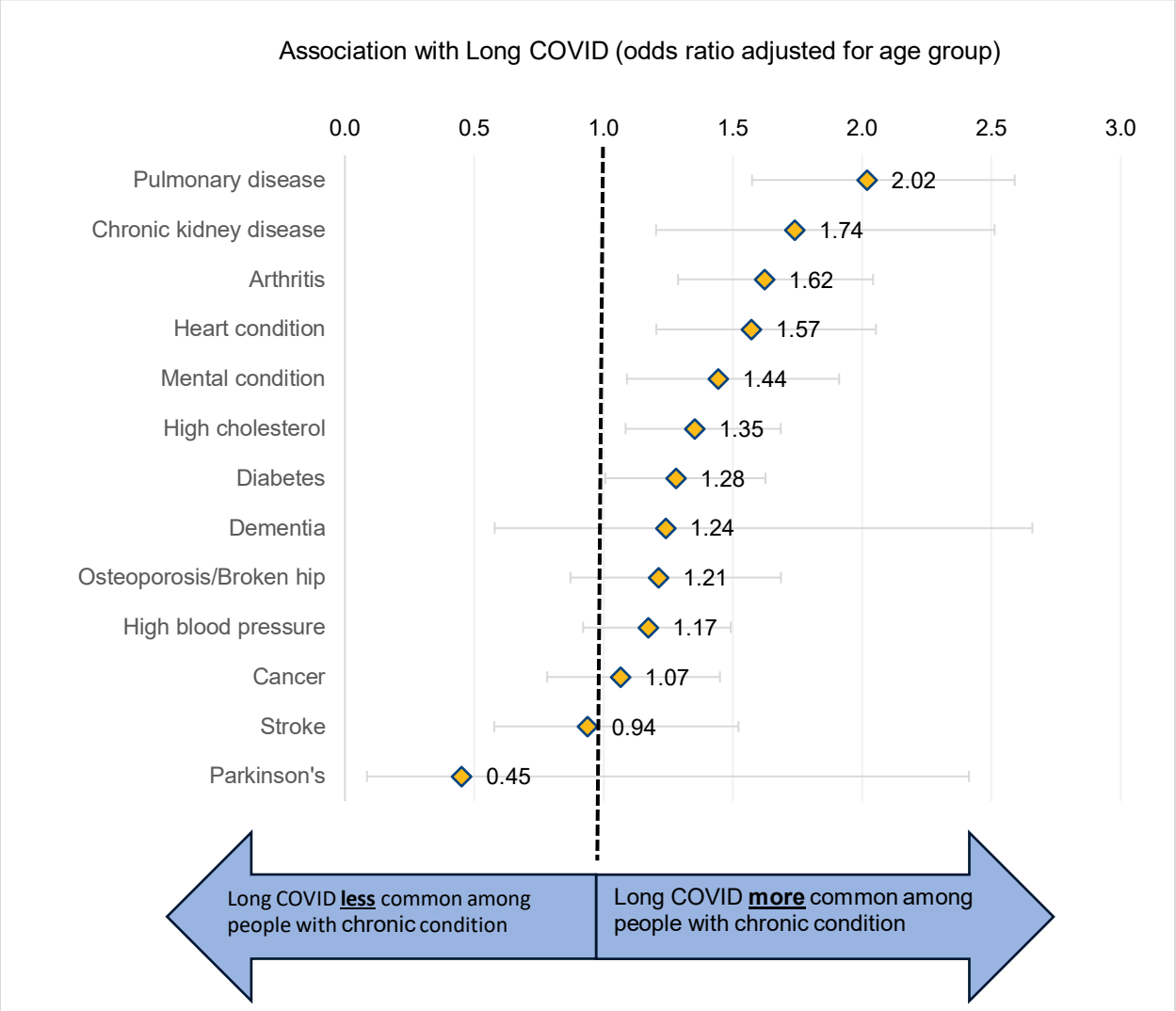
Figure 5: Patterns of Long COVID among community-dwelling Medicare beneficiaries by COVID-19 vaccination status, Summer 2023.



SOURCE: 2022 Medicare Current Beneficiary Survey (MCBS). Estimates weighted to represent the national population of beneficiaries who were alive, enrolled in Medicare at any point in 2022, and living in the community at the time of their interviews in fall 2022 and summer 2023 (unweighted n=7,458, weighted n = 59.6 million). The analysis estimates that 89.3% of this Medicare population had ever received at least one dose of a COVID-19 vaccine.

- Beneficiaries who had at least one COVID-19 vaccine dose were less likely to have Long COVID.
- This relationship between COVID-19 vaccination and a reduced likelihood of Long COVID was true for all Medicare beneficiaries dwelling in the community, as well as among Medicare beneficiaries who had COVID-19.

Figure 6: Associations between individual chronic conditions and Long COVID among community-dwelling Medicare beneficiaries, Summer 2023.



SOURCE: 2022 Medicare Current Beneficiary Survey (MCBS). Estimates weighted to represent the national population of beneficiaries who were alive, enrolled in Medicare at any point in 2022, and living in the community at the time of their interviews in fall 2022 and summer 2023 (unweighted n=7,458, weighted n = 59.6 million). A beneficiary was considered to have a chronic condition if they reported that a health provider had ever diagnosed them with that condition. Odds ratios were adjusted for age group (<65 vs. 65+). Error bars represent 95% confidence intervals of the odds ratios.

- Among the 13 chronic conditions tested, the strongest associations with Long COVID were for pulmonary disease, chronic kidney disease, arthritis, and heart conditions.
- Other chronic conditions that were significantly associated with Long COVID were mental health conditions, high cholesterol, and diabetes.

Discussion

Several million Medicare beneficiaries have experienced Long COVID, constituting a major public health burden with a wide variety of presentations. Among the community-dwelling Medicare beneficiaries examined in this analysis, Long COVID was more common among beneficiaries under the age of 65, who are typically eligible for Medicare because of a qualifying disability or end-stage renal disease.

A few socio-demographic groups, including female beneficiaries and rural/micropolitan residents, were significantly more likely to have Long COVID. COVID-19 vaccination was strongly associated with lower odds of Long COVID, even among beneficiaries who had COVID-19.

Some specific chronic conditions were significantly associated with Long COVID; these included pulmonary disease, chronic kidney disease, arthritis, and heart disease. Interactions with these health issues may multiply the burden of Long COVID, although this analysis was not able to explore the causal direction between chronic conditions and Long COVID.

Definitions

Beneficiary: Beneficiary refers to a person receiving Medicare services who may or may not be participating in the MCBS. Beneficiary may also refer to an individual selected from the MCBS sample about whom the MCBS collects information.

Community interview: Survey administered for beneficiaries living in the community (i.e., not in a long-term care facility such as a nursing home) during the reference period covered by the MCBS interview. An interview may be conducted with the beneficiary or a proxy.

Sex: A beneficiary's sex is self-reported by the respondent.

Income-to-poverty ratio (IPR): Income includes income from all sources, such as pension, Social Security, and retirement benefits, for the beneficiary and spouse, for the calendar year 2022. The poverty line refers to 2022 standard federal poverty line thresholds, published by the U.S. Census Bureau.[4]

Number of chronic conditions: Self-reported MCBS data, current as of the beneficiaries' fall 2022 MCBS interview, indicated whether the beneficiary had ever been diagnosed with any of a list of chronic conditions. The 13 listed chronic conditions used for this data highlight included the following:

- Alzheimer's or non-Alzheimer's dementia
- Arthritis (including rheumatoid arthritis, osteoarthritis, or other arthritis)
- Cancer
- Chronic kidney disease
- Diabetes
- Heart condition (including myocardial infarction, angina pectoris or coronary heart disease, congestive heart failure, or other heart conditions)
- High blood pressure (hypertension)
- High cholesterol
- Mental health condition (including depression or other mental health condition)
- Osteoporosis or broken hip

- Parkinson's disease
- Pulmonary disease (including emphysema, asthma, or chronic obstructive pulmonary disease)
- Stroke

If a beneficiary reported multiple conditions within a single category, only one would be counted. For example, a beneficiary with both a history of myocardial infarction and congestive heart failure would be counted as having one chronic condition.

COVID-19 vaccination: Beneficiaries provided to interviewers an account of every COVID-19 vaccination they had ever received. The current analysis categorized the sample as those who had and those had never received at least one COVID-19 vaccine dose, as of the summer 2023 interview.

Race/ethnicity: Hispanic origin and race are two separate and distinct categories. Persons of Hispanic origin may be of any race or combination of races. Hispanic origin includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or Spanish origin. For the MCBS, responses to beneficiary race and ethnicity questions are reported by the respondent. More than one race may be reported. For conciseness, the text, tables, and figures in this document use shorter versions of the terms for race and Hispanic or Latino origin specified in the Office of Management and Budget 1997 Standards for Data on Race and Ethnicity. Beneficiaries reported as White and not of Hispanic origin were coded as White non-Hispanic; beneficiaries reported as Black/African American and not of Hispanic origin were coded as Black non-Hispanic; beneficiaries reported as Hispanic, Latino/Latina, or of Spanish origin, regardless of their race, were coded as Hispanic. The "Other Race/Ethnicity" category includes other single races not of Hispanic origin (including American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander), or two or more Races.

Data sources and methods

The MCBS is a longitudinal survey of Medicare beneficiaries that is sponsored by the Centers for Medicare & Medicaid Services (CMS) and directed by the Office of Enterprise Data and Analytics (OEDA). The MCBS is the most comprehensive and complete survey available on the Medicare population and is essential in capturing data not otherwise collected through operations and administration of the Medicare program. The MCBS sample includes participants from the 48 continental states in the United States.

The MCBS employs a rotating panel design, in which beneficiaries remain in the sample for a maximum of four years. Each year, beneficiaries who have remained in the sample for up to four years exit the sample, and a new sample of beneficiaries is selected to replace those exiting the sample (roughly one-third of the sample is replaced each year). This data highlight used cross-sectional survey weights to account for overall selection probability of each sample person and included adjustments for the stratified sampling design, survey nonresponse, and coverage error. Balanced repeated replication (BRR) weights were used for variance estimation. Traditionally an in-person survey, the MCBS moved to telephone data collection in 2020 due to the COVID-19 pandemic; the data represented in this brief was mostly collected via telephone, but the survey was returning to in-person collection for a minority of interviews.

MCBS Limited Data Set (LDS) files are available from the CMS for a fee and require a data use agreement. The MCBS LDS files consist of the MCBS Survey File, the MCBS Survey File – Early Release and the MCBS Cost Supplement. The MCBS Survey File includes survey-based

and administrative data on beneficiary socio-demographic characteristics, health status and functioning, access to care, satisfaction, and sources of care. The MCBS Survey File – Early Release provides select microdata from the MCBS Survey File on an expedited schedule. The MCBS Cost Supplement includes survey-based and administrative data on beneficiary health care costs, utilization, sources of payment. Information on ordering MCBS files can be obtained from CMS' LDS website at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/Data-Disclosures-Data-Agreements/DUA_-_NewLDS.html

Study population

The analytic dataset included 7,458 Medicare beneficiaries who represented the national population of community-based (i.e. not living in a facility) Medicare beneficiaries. Weighted data allowed the results to represent a national population of 59.6 million community-based Medicare beneficiaries. Probability of selection into the sample was stratified by age, sex, race, and place of residence. For more information on sampling procedures, please see the 2022 MCBS Methodology Report.[5]

About the authors

This report was written by Nicholas Schluterman and William Doss at the Centers for Medicare & Medicaid Services (CMS) Office of Enterprise Data and Analytics (OEDA).

References

1. National Academies of Sciences, Engineering, and Medicine. 2024. A Long COVID Definition: A Chronic, Systemic Disease State with Profound Consequences. Available from: https://nap.nationalacademies.org/catalog/27768/a-long-covid-definition-a-chronic-systemic-disease-state-with. Accessed September 2024.
2. Centers for Disease Control and Prevention. 2024. Long COVID Basics. Available from: https://www.cdc.gov/covid/long-term-effects/index.html. Accessed September 2024.
3. Office of Long COVID Research and Practice. 2024. Implementation of the Government-Wide Response to Long COVID. Available from: https://www.hhs.gov/sites/default/files/long-covid-update-2024.pdf. Accessed September 2024.
4. U.S. Census Bureau. 2024. Poverty Thresholds. Available from: https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html. Accessed September 2024.
5. Centers for Medicare and Medicaid Services. 2024. 2022 MCBS Methodology Report. Available from: https://www.cms.gov/files/document/2022-mcbs-methodology-report.pdf. Accessed October 2024.