



The Changing Medical Debt Landscape in the United States

Technical Appendix

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Metrics Definitions (Source)

- **Share with medical debt in collections** is the share of adults with a credit bureau record who have medical debt in collections in their records (Urban Institute Credit Bureau Panel).
- **Median amount of medical debt** is the median amount of medical debt in collections among those with medical debt in collections in their records (Urban Institute Credit Bureau Panel).
- **White communities** are zip code tabulation areas where at least 50 percent of the population is white non-Hispanic (American Community Survey).¹
- **Communities of color** are zip code tabulation areas where at least 50 percent of the population is people of color (American Community Survey).¹
- **Hospital market concentration** uses the Herfindahl–Hirschman index (HHI), based on adjusted admissions of nonfederal general medical/surgical hospitals within a health system (American Hospital Association Annual Survey Database).
- **Hospital closures and mergers** refer to the number of short-term and critical access hospitals that closed or merged (Centers for Medicare & Medicaid Services [CMS] Provider of Services File).
- The **uninsured** is defined as the share of the total population without health insurance (American Community Survey).
- **Disabled adults** are the share of the nonelderly adult population (ages 18 to 64) that reports having any one of six disability types (American Community Survey).²
- **Average household income** is the average household income measured in 2023 dollars (American Community Survey).

Data Sources and Methods

The dashboard is based on data from the Urban Institute Credit Bureau Panel, the American Hospital Association Annual Survey Database, the CMS Provider of Services File, and the American Community Survey. This appendix describes each of these data sources and the creation of metrics included in the feature.

Urban Institute Credit Bureau Panel

The Urban Institute Credit Bureau Panel comprises a nationally representative sample of depersonalized consumer data from a major credit bureau. The data dashboard includes annual data collected from August 2011 through August 2023, comprising a 2 percent sample of consumers each year from 2011 through 2019 (over 5 million consumers per year) and a 4 percent sample from 2020 through 2023 (over 10 million consumers per year). The consumer panel is refreshed with each data pull to maintain national representativeness.³

All records are stripped of personally identifiable information but include a consumer's age, zip code, and county of residence. Because the credit bureau data do not include information about race and ethnicity, the medical debt measures for white communities and communities of color are based on the racial makeup of zip code tabulation areas (ZCTAs) within the geographic area (nation, state, and county). The white community values are based on credit records of people who live in ZCTAs where at least 50 percent of the population is white non-Hispanic. Communities of color values are based on credit records of people who live in ZCTAs where at least 50 percent of the population is African American, Hispanic, Asian or Pacific Islander, American Indian or Alaska Native, another race other than white, or multiracial.

Credit bureau data are reported at the national, state, and county levels for the 50 states and Washington, DC. The downloadable dataset notes missing and unavailable values with "NA." Some values are unavailable because credit bureau metrics are not reported when based on fewer than 50 people. In other cases, values for white communities and communities of color are not reported because there are no ZCTAs with a majority of white residents or a majority population of color in the county or state.

American Hospital Association Annual Survey Database

We use 2011 to 2022 data from the American Hospital Association Annual Survey Database to construct the HHI, a measure of market concentration.⁴ We first calculate the HHI at the hospital referral region (HRR) level.⁵ HRRs define geographic hospital markets, which are large tertiary referral areas comprised of geographically contiguous hospital service areas with a minimum population of 120,000. There are 306 HRRs in the US, and their boundaries frequently cross state lines.

The HHI is calculated by squaring the market share (based on adjusted admissions)⁶ of each unique health system⁷ and independent hospital competing within each HRR and then summing the resulting

numbers. We restrict the sample to hospitals providing general medical and surgical services and exclude federal hospitals.

To create the HHI measure at the state and county levels for each year, we crosswalk each HRR to a state or county and use population weights from the Geocor 2022.⁸ At the national level, the HHI is defined as the unweighted average of the HHI across the 306 HRRs in the country.

CMS Provider of Services File

Closures and mergers data for 2011 to 2022 are derived from the Provider of Services File provided by CMS.⁹ Provider of Services Data contains detailed information about Medicare-approved health care providers, including hospitals, and is used to track facility characteristics and operational status. We use the Provider of Services File each year to identify short-term or critical access hospitals that switched from active in the prior year to merged or closed.

American Community Survey

We use the 2011 to 2022 American Community Survey (ACS)¹⁰ to define white communities and communities of color and to create metrics: uninsured, disabled adults, and average household income.

The definitions of white communities and communities of color are based on ACS five-year estimates of the racial and ethnic composition of ZCTAs' populations from 2011 to 2022. To maintain consistency throughout the analysis, the definitions are based on the average share of white residents and the share of people of color residents for each ZCTA between 2011 and 2022. White communities are ZCTAs where the average share of the white non-Hispanic population is at least 50 percent, and communities of color are ZCTAs where the average share of the population of color is at least 50 percent.

We use one-year ACS estimates to create socioeconomic metrics at the national and state levels and five-year ACS estimates for metrics at the county level. The national- and state-level estimates for 2020 are unavailable because of the impact of COVID-19 on data quality.

Notes

- ¹ In this feature, we use a different definition of communities of color and white communities than in “Debt in America: An Interactive Map,” Washington, DC: Urban Institute, accessed June 25, 2024, <https://apps.urban.org/features/debt-interactive-map/?type=overall&variable=totcoll>.
- ² Disability types are independent living difficulty, vision difficulty, hearing difficulty, ambulatory difficulty, cognitive difficulty, and self-care difficulty.
- ³ Consumers only leave the panel if they no longer have a credit record (e.g., due to being identified as deceased), but a nationally representative sample of consumers with new credit records is added to the panel at each new data pull.
- ⁴ “AHA Annual Survey Database,” AHADData.com, accessed June 25, 2024, <https://www.ahadata.com/aha-annual-survey-database>.
- ⁵ “Hospital Referral Region (HRR),” Definitive Healthcare, accessed June 25, 2024, <https://www.definitivehc.com/resources/glossary/hospital-referral-region>.
- ⁶ Adjusted admissions in the American Hospital Association Annual Survey Database are defined as the sum of admissions and equivalent admissions attributed to outpatient services. The number of equivalent admissions attributed to outpatient services is derived by multiplying admissions by the ratio of outpatient revenue to inpatient revenue.
- ⁷ Within a given HRR, hospitals belonging to the same corporate body that owns or manages health provider facilities are treated as a single entity when calculating the HHI.
- ⁸ “Geocorr 2022: Geographic Correspondence Engine,” MDCDC Data Applications, accessed June 25, 2024, <https://mcdc.missouri.edu/applications/geocorr2022.html>.
- ⁹ “Provider of Services File,” DATA.gov, accessed June 25, 2024, <https://catalog.data.gov/dataset/provider-of-services-file-hospital-non-hospital-facilities-f216f/resource/c43dea5b-305e-4dc8-ac76-b196866a4570>.
- ¹⁰ “American Community Survey Data,” Census.gov, accessed June 25, 2024, <https://www.census.gov/programs-surveys/acs/data.html>.

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For more information on this project, see “The Changing Medical Debt Landscape in the United States,” Washington, DC: Urban Institute, accessed June 5, 2024, <https://apps-staging.urban.org/features/changing-medical-debt-landscape/>.



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