



Research Letter

Trends in Medical Debt During the COVID-19 Pandemic

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Introduction

In the US, with millions of COVID-19 hospitalizations, considerable job losses, and corresponding losses in employer-sponsored health insurance, the COVID-19 pandemic has raised concerns about a substantial increase in medical debt.¹ However, the decrease in elective medical procedures²; passage of legislation that partially shields households from COVID-19-related medical costs³; and large expansion of the social safety net,⁴ including increased funding for Medicaid and health insurance exchanges,⁵ may have offset any potential medical debt increase. To better understand these factors, we analyzed trends in medical debt from January 2018 to September 2021 and their associations with local measures of pandemic severity.

Methods

In this cross-sectional study, we measured medical debt in collections using a nationally representative, randomly selected 10% panel of persons with credit reports maintained by TransUnion, a nationwide credit reporting agency. The University of Chicago Institutional Review Board deemed this analysis of deidentified credit bureau data not to be human participant research. We followed the [STROBE](#) reporting guideline.

We supplemented data from January 2018 to June 2020, which were identical to those used in a previous medical debt study,⁶ with newly available data through September 2021. Medical debt is typically reported at least 180 days after the bill was incurred; thus, these data largely reflect medical care provided through March 2021. The 10% panel yielded a sample of 1.457 billion person-month observations and 37 million unique persons.

The main outcome was the mean quarterly flow of medical debt, defined as the amount of new debt listed on credit reports during the preceding 3 months, averaged over persons with credit reports. For comparison, we constructed an analogous measure of the flow of nonmedical debt in collections. The data included zip codes. To analyze trends by income, we assigned each zip code to its population-weighted income quintile using estimates from the 5-year American Community Survey (2015-2019) and then plotted statistics on the quarter 3 flow of medical debt by year.

We examined the sample-weighted association between county-level percentage changes in medical debt from September 2019 to September 2021 and the cumulative COVID-19 infection and vaccination rates through September 2021 using data from the *New York Times*; the change in unemployment rate from September 2019 to the peak of the pandemic (April 2020 for most counties) using data from the US Census Bureau; and the change in consumer spending between January 2020 and September 2021 using data from Opportunity Insights. Details on sample and variable construction appear in the eMethods in the [Supplement](#).

Results

Medical and nonmedical debt during the pandemic followed the prepandemic downward trends (**Figure 1**), with proportionally similar declines across zip code income quintiles (**Figure 2**). There was

+ Supplemental content

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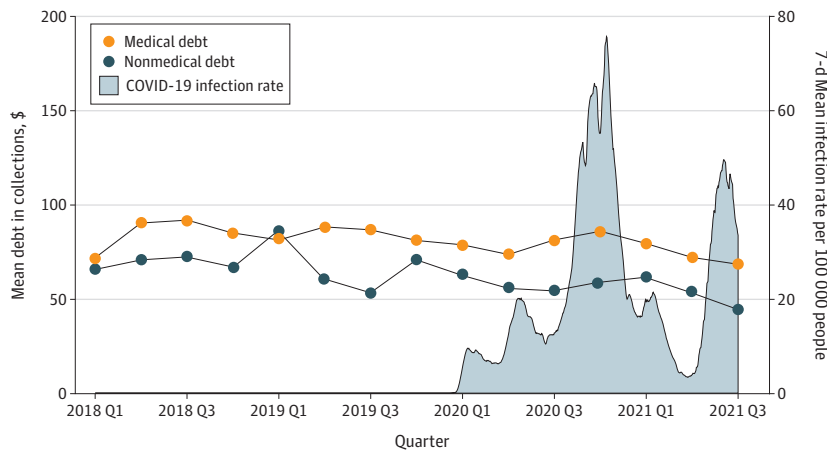
no statistically significant association between the percentage change in medical debt and the measures of pandemic severity. The Pearson correlations were small in absolute value: 0.037 with COVID-19 infection rate, -0.054 with COVID-19 vaccination rate, 0.021 with change in unemployment rate, and 0.018 with change in consumer spending.

Discussion

We found no evidence of a net association between the COVID-19 pandemic and medical debt, overall or across areas with different incomes and pandemic severity. These results are consistent with any increase in medical debt being offset by decreases in elective medical procedures and new health care-related governmental policies.

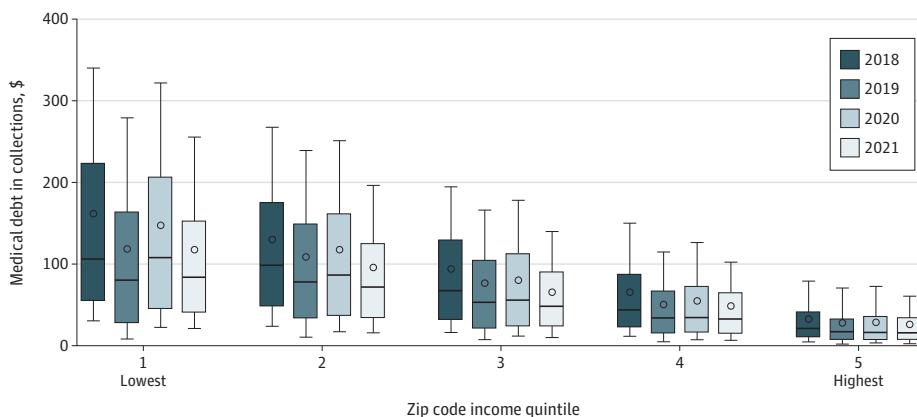
Quantifying the importance of these factors is challenging because of the lack of data linkages at the individual level and the lack of variation in the timing and geographic coverage of many governmental policies. A limitation of this study is it analyzed only debts reported to TransUnion. It did not include debts not reported to credit bureaus, and our data may not be identical to debts reported to other credit bureaus.

Figure 1. Quarterly Flow of Medical Debt in Collections and COVID-19 Infection Rate



Mean quarterly flow of debt was the amount of new debt listed on credit reports in the past 3 months, averaged over all individuals with a credit report. COVID-19 infection rate was the rolling 7-day mean per 100 000 people.

Figure 2. Quarter 3 Flow of Medical Debt by Zip Code Income Quintile



Dots indicate means; horizontal lines, medians; boxes, IQRs; whiskers, range (10th-90th percentile) for mean zip code-level quarter 3 debt flow.

ARTICLE INFORMATION**Accepted for Publication:** March 24, 2022.**Published:** May 20, 2022. doi:10.1001/jamahealthforum.2022.1031**Open Access:** This is an open access article distributed under the terms of the [CC-BY License](#). © 2022 Guttman-Kenney B et al. *JAMA Health Forum*.**Corresponding Author:** Neale Mahoney, PhD, Stanford University, 579 Jane Stanford Way, Stanford, CA 94305 (nmahoney@stanford.edu).**Author Affiliations:** University of Chicago Booth School of Business, Chicago, Illinois (Guttman-Kenney); Harvard Business School, Harvard University, Boston, Massachusetts (Kluender); Department of Economics, Stanford University, Stanford, California (Mahoney); National Bureau of Economic Research, Cambridge, Massachusetts (Mahoney, Wong, Yin); Department of Economics, Duke University, Durham, North Carolina (Xia); Luskin School of Public Affairs, University of California, Los Angeles, Los Angeles (Yin).**Author Contributions:** Dr Mahoney had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.*Concept and design:* Kluender, Mahoney, Wong, Xia, Yin.*Acquisition, analysis, or interpretation of data:* All authors.*Drafting of the manuscript:* All authors.*Critical revision of the manuscript for important intellectual content:* All authors.*Statistical analysis:* All authors.*Administrative, technical, or material support:* Mahoney, Yin.*Supervision:* Mahoney, Yin.**Conflict of Interest Disclosures:** None reported.**Funding/Support:** Dr Mahoney was supported by internal research funds at Stanford University. Dr Wong was supported by grant T32-AG000186 from the National Institute on Aging.**Role of the Funder/Sponsor:** The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.**Additional Information:** The credit data used in this study were provided by TransUnion, a global information solutions company, through a relationship with the Kilts Center for Marketing at the University of Chicago Booth School of Business. TransUnion had the right to review the research before dissemination to ensure it accurately describes TransUnion data; does not disclose confidential information; and does not contain material it deems to be misleading or false regarding TransUnion, TransUnion's partners, affiliates or customer base, or the consumer lending industry.**Additional Contributions:** Ella Mao, BA, Stanford University, made substantial contributions to the data analysis and was compensated for her contributions.**REFERENCES**

- Collins S, Aboulafla G, Gunja M. As the pandemic eases, what is the state of health care coverage and affordability in the U.S.? findings from the Commonwealth Fund health care coverage and COVID-19 survey, March-June 2021. *The Commonwealth Fund*. Accessed January 8, 2022. <https://www.commonwealthfund.org/publications/issue-briefs/2021/jul/as-pandemic-eases-what-is-state-coverage-affordability-survey>
- Cantor JH, Sood N, Bravata D, Pera M, Whaley CM. The impact of the COVID-19 pandemic and policy response on health care utilization: evidence from county-level medical claims and cellphone data. *National Bureau of Economic Research working paper 28131*. Accessed January 8, 2022. https://www.nber.org/system/files/working_papers/w28131/w28131.pdf
- Kaiser Family Foundation. State COVID-19 health policy actions. Accessed December 3, 2021. <https://www.kff.org/b8199e0/>
- US Department of the Treasury. COVID-19 economic relief. Accessed December 3, 2021. <https://home.treasury.gov/policy-issues/coronavirus>
- Centers for Medicare & Medicaid Services. New Medicaid and CHIP enrollment snapshot shows almost 10 million Americans enrolled in coverage during the COVID-19 public health emergency. Accessed December 3, 2021. <https://www.cms.gov/newsroom/press-releases/new-medicaid-and-chip-enrollment-snapshot-shows-almost-10-million-americans-enrolled-coverage-during>

6. Kluender R, Mahoney N, Wong F, Yin W. Medical debt in the US, 2009-2020. *JAMA*. 2021;326(3):250-256. doi:10.1001/jama.2021.8694

SUPPLEMENT.

eMethods.