ISSUE BRIEF
June 2020

Canary in a Coal Mine? A Look at Initial Data on COVID-19's Impact on U.S. Hospitals

John (Xuefeng) Jiang
Eli Broad College of Business
Michigan State University

Ge Bai
Johns Hopkins Carey Business School
Johns Hopkins Bloomberg School of Public Health

Lovisa Gustafsson
The Commonwealth Fund

Gerard F. Anderson
Johns Hopkins Bloomberg School of Public Health
Johns Hopkins School of Medicine

ABSTRACT

ISSUE: During the first three months of the COVID-19 pandemic, hospitals faced significant financial and operating pressure due to their necessary response to the public health crisis. In addition to incurring increased expenses to prepare for and treat COVID-19 patients, hospitals lost revenue for care that was canceled, postponed, or forgone. The federal government has responded with emergency financial relief, but state and federal policymakers still struggle to understand the magnitude of the impact on hospitals because of limited data on hospital financial metrics during the pandemic.

GOAL: To understand the impact of COVID-19 on hospital utilization, revenue, and profitability.

METHODS: Study of quarterly financial disclosures, earnings calls, and stock performance of the four largest publicly traded for-profit hospital systems.

KEY FINDINGS: Admissions, surgeries, and emergency department visits of the four for-profit hospital systems dropped 20 percent to 40 percent during the last two weeks of March 2020 and 30 percent to 70 percent in April 2020. Their first quarter operating profits dropped 13.5 percent (though remained positive), and their market value dropped 52 percent from February 3 to March 18, 2020.

CONCLUSION: COVID-19 affected hospital systems' revenue and profitability. The necessity of providing congressional relief to hospitals remains ambiguous and varies with individual systems.

TOPLINES

- U.S. hospitals experienced a decline in first-quarter revenue and profitability as a result of the COVID-19 pandemic, a new study shows.
- Hospital declines in service volumes, profits, and market value since the pandemic began could indicate trouble on the horizon for other health systems.

The Commonwealth Fund

INTRODUCTION

To help hospitals adjust to the financial pressures caused by the COVID-19 pandemic, Congress has provided $175 billion in financial relief to hospitals and other providers through the Coronavirus Aid, Relief, and Economic Security (CARES) Act and the Paycheck Protection Program and Health Care Enhancement Act.[1] In addition, the CARES Act, among other things, authorized a 20 percent increase in Medicare payments for COVID-19 patients. The two acts were designed to help hospitals adjust to higher expenses and lost revenue, given the concern that hospitals were cancelng elective procedures at the same time they were spending more on personal protective equipment, testing, ventilators, and additional treatment capacity.

When Congress was making relief fund allocation decisions, the operational and financial impact of COVID-19 on U.S. hospitals was unknown. To date, there are only projections,[2] estimations,[3] anecdotal evidence,[4] and survey results from some hospitals.[5] To better understand the financial impact on hospitals, we studied evidence from the four largest publicly traded for-profit hospital systems: HCA Healthcare (HCA), Tenet Healthcare Corporation (Tenet), Community Health Systems, Inc. (CHS), and Universal Health Services, Inc. (UHS). We chose to look at these publicly traded for-profit systems because they are required to report financial information on a timely basis. While our sample is not representative of all hospitals, it provides timely empirical data long before any national hospital financial information has become available, and because they must conform to nationally accepted accounting standards, the data are not subject to the response bias that potentially exists in survey studies.

HCA, Tenet, CHS, and UHS are the only four companies in the acute hospital care industry that were publicly listed on May 8, 2020. Combined, they have 88,638 beds and account for approximately 13 percent of the U.S. private hospital market share and 68 percent of the for-profit hospital market share[6] (Exhibit 1). Between April 21 and May 4, the four systems filed first-quarter (Q1) 2020 10-Q forms, the Security and Exchange Commission's mandatory quarterly financial disclosure for all publicly traded companies in the United States. They also conducted quarterly conference calls to explain past earnings and performance, provide future prognostications, and answer questions from the investment community. These call transcripts provided information on performance and specific actions the hospital systems had taken.

Exhibit 1. Profiles and the COVID-19 Relief Received by For-Profit Hospital Systems

Hospital system	Number of hospitals	Number of beds	Assets (in millions)	Market value (in millions)	COVID-19 grant (in millions)	Medicare advance payments (in millions)
HCA	186	49,357	$45,058	$50,026	$700	$4,000
Tenet	65	17,210	$23,351	$3,963	$345	$1,500
CHS	99	15,620	$15,609	$342	$245	$1,200
UHS	26	6,451	$11,668	$12,438	$195	$375
Total	376	88,638	$95,686	$66,768	$1,485	$7,075

Notes: The COVID-19 grant and Medicare advance payments are based on the hospital systems' disclosures during their Q1 2020 conference calls. They reflect the amount received as of the date of the conference calls and are excluded from the Q1 2020 financial statements.

Data: Authors' analysis of 2019 Forms 10-K, Q1 2020 conference call transcripts on quarterly earnings, and stock prices as of December 31, 2019, for HCA, Tenet, CHS, and UHS.

FINDINGS

Impact on Service Volume

One aim of the congressional funding for hospitals was to provide financial relief for lost revenues due to COVID-19. Thirty states and the District of Columbia issued executive orders requiring that elective procedures be canceled or postponed.[7] Patients, concerned about possible COVID-19 infection, are also limiting hospital visits. Compared with the same period in 2019, admissions, surgeries, and emergency department (ED) visits at HCA declined substantially in the last two weeks of March 2020 (20%, 26%, and 30%, respectively), and the decline intensified in April (30%, 63%, and 50%, respectively). Tenet reported similar trends. CHS reported a 70 percent drop in surgeries in April, and UHS had a 29 percent decline in admissions in the first quarter of 2020 (Exhibit 2).

Impact on Revenue, Expenses, and Profit

All hospital systems reported revenues, three components of operating expenses (salary and compensation, supplies, and other operating expenses), and operating profit (revenue minus the sum of the three components of operating expenses). While all four hospital systems maintained positive operating profits in Q1 2020, their aggregated operating profits dropped by 13.5 percent (Exhibit 3). Compared to Q1 2019, HCA, CHS, and UHS experienced little change in revenue in Q1 2020, but saw increases in salary and compensation expenses, supply expenses (not UHS), and other operating expenses. Tenet had a 10.4 percent decrease in revenue and reduced all three components of operating expenses. In the conference call, Tenet attributed its $83 million drop in operating profit to COVID-19, suggesting that during the last few weeks of March, COVID-19 caused a $125 million operating loss.

Exhibit 2. Service Volumes of For-Profit Hospital Systems

	Q1 2020	Q1 2019	Quarterly change	Last two weeks in March 2020	April 2020
HCA					
Admissions	514,979	511,817	1%	–20%	–30%
Surgeries	350,871	367,066	–4%	–26%	–63%
ED visits	2,221,294	2,243,856	–1%	–30%	–50%
Tenet					
Admissions	165,735	173,470	–5%	–25%	–33%
Surgeries	95,352	102,449	–7%	–40%	–55%
ED visits	641,282	651,852	–2%	–25%	–50%
CHS					
Admissions	127,845	134,882	–5%	NA	–35%
Surgeries	NA	NA	NA	NA	–70%
ED visits	NA	NA	NA	NA	–45%
UHS					
Admissions	77,768	80,663	–4%	–29%	NA
Surgeries	NA	NA	NA	NA	NA
ED visits	NA	NA	NA	NA	NA

Notes: Surgery volume for HCA is the weighted average of inpatient and outpatient surgeries, weighted by Q1 2020 values. All percentage changes are based on the same period in the previous year.

Data: Authors' analysis of Q1 2020 Forms 10-Q and conference call transcripts on quarterly earnings for HCA, Tenet, CHS, and UHS.

Exhibit 3. Revenue, Operating Expenses, and Operating Profit of U.S. For-Profit Hospital Systems, Q1 2019–Q1 2020 (in millions)

	Q1 2020	Q1 2019	Quarterly change
Revenue			
HCA	$12,861	$12,517	2.7%
Tenet	$3,025	$3,376	–10.4%
CHS	$2,830	$2,804	0.9%
UHS	$4,520	$4,545	–0.6%
Total	$23,236	$23,242	0.0%
Salary and compensation expenses			
HCA	$6,118	$5,647	8.34%
Tenet	$1,408	$1,542	–8.69%
CHS	$1,433	$1,366	4.92%
UHS	$2,187	$2,151	1.67%
Total	$11,146	$10,706	4.11%
Supplies expenses			
HCA	$2,427	$2,299	5.6%
Tenet	$737	$811	–9.1%
CHS	$690	$645	7.0%
UHS	$1,013	$1,065	–4.9%
Total	$4,867	$4,820	1.0%
Other operating expenses			
HCA	$2,123	$2,041	4.0%
Tenet	$498	$558	–10.8%
CHS	$318	$307	3.4%
UHS	$763	$741	3.0%
Total	$3,702	$3,647	1.5%
Operating profit			
HCA	$2,193	$2,530	–13.3%
Tenet	$382	$465	–17.8%
CHS	$389	$487	–20.0%
UHS	$557	$588	–5.3%
Total	$3,521	$4,070	–13.5%

Note: Q1 2020 financial statements exclude any government relief or financial assistance related to COVID-19.

Data: Authors' analysis of Q1 2020 Forms 10-Q.

Impact on Cash and Cash Equivalents

Another aim of congressional funding was to provide liquidity for hospitals' cash flows. We used the amount of cash and cash equivalents to assess liquidity. Cash equivalents refer to short-term securities with high liquidity and credit quality, such as treasury bonds, commercial papers, and money market funds. We found that for-profit hospital systems took preemptive actions to improve liquidity. The total cash and cash equivalents of the hospital systems increased by 42 percent between Q4 2019 and Q1 2020, from $1.2 billion to $1.6 billion. Except for UHS, all systems increased their cash positions (Exhibit 4). These changes were unrelated to any federal financial relief pertaining to COVID-19 provided to these hospitals. Tenet reduced capital expenditures by $300 million, borrowed $700 million in secured loans, and raised its revolving credit commitment by $400 million. HCA and UHS suspended stock repurchases and dividend payments.

Impact on Stock Performance

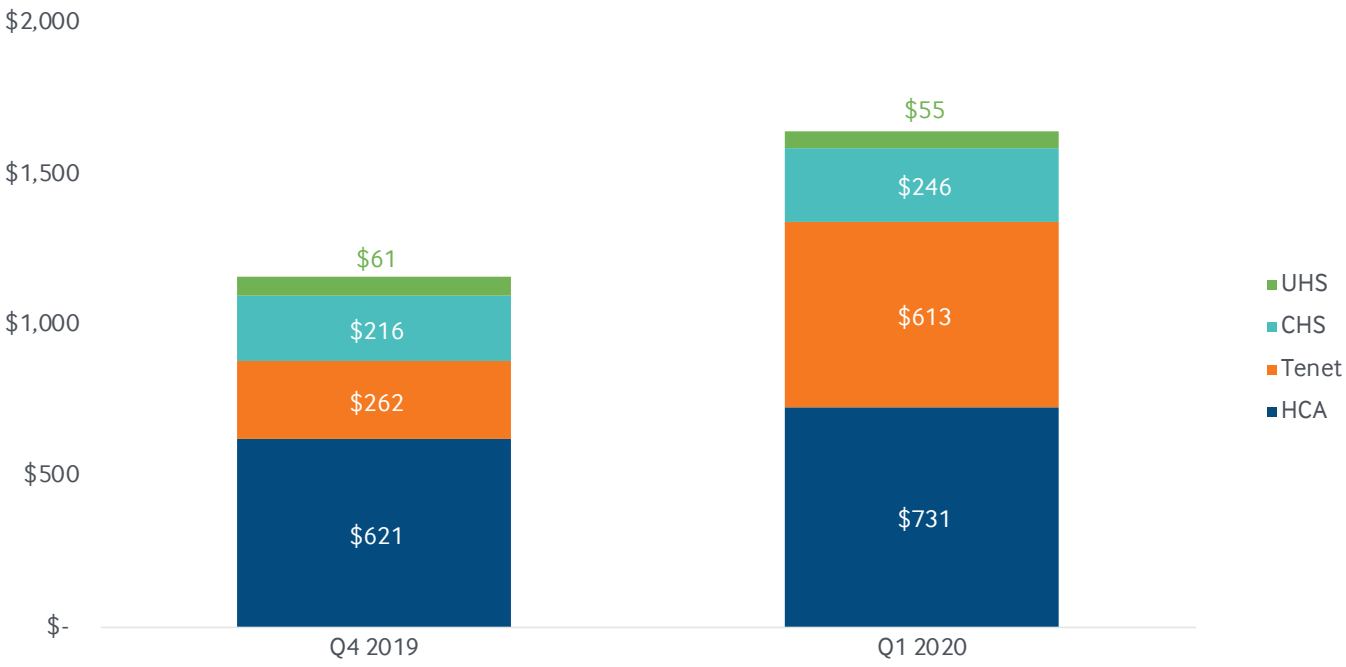
We also analyzed the impact of COVID-19 on the stock prices of the four for-profit systems compared to other U.S. companies. To do this, we calculated the combined market value of the four systems and compared it against the S&P 500 Index, which is widely used to indicate the overall stock market, and the Vanguard Health Care Index Fund (Health Care Index), which represents the overall health care sector and is heavily weighted to pharmaceuticals, biotechnology, and health care equipment. We also reviewed financial media reports to understand their perception of the relationship between stock price volatility and major events related to COVID-19.

The stock prices of the hospital systems appear to have responded to government actions and key COVID-19 related news (Exhibit 5):

- From February 3 to March 18, the combined market value of the four hospital systems dropped by 52 percent, substantially greater than the Health Care Index (20%) or the S&P 500 Index (26%).

Exhibit 4. Changes in Cash and Cash Equivalents of U.S. For-Profit Hospital Systems, Q4 2019—Q1 2020

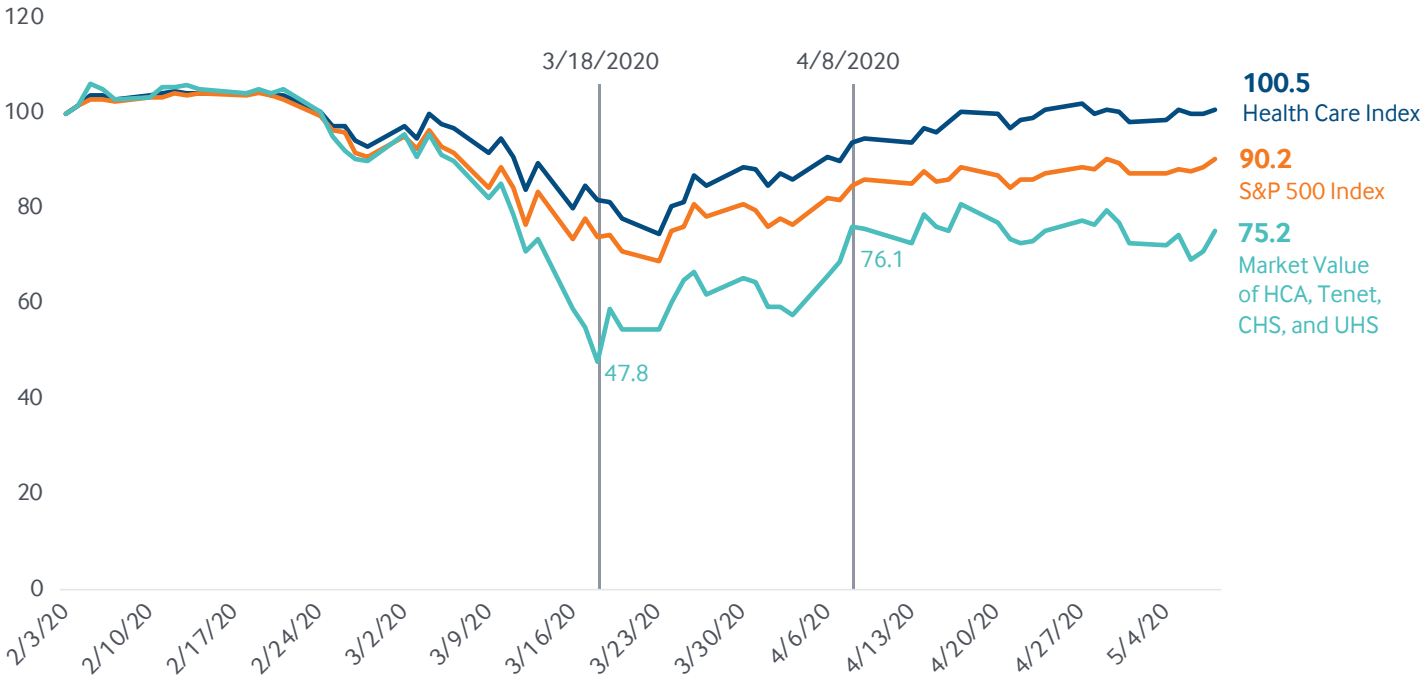
In millions



Note: The amount of cash and cash equivalents at the end of Q1 2020 excludes any government relief or financial assistance related to COVID-19.

Data: Authors' analysis of Q1 2020 Forms 10-Q.

Exhibit 5. Standardized Market Value of For-Profit Hospital Systems, Health Care Index, and S&P 500 Index, 2/3/2020–5/8/2020



Notes: The market value of the four hospital systems is the sum of the market value of each system. The market value for a system on a given date is its closing share price multiplied by the shares outstanding on that day. It measures what the investment community perceives as discounted future profits. All three trends are standardized at 100 on February 3, 2020.

Data: Authors' analysis of stock prices of the four hospital systems, the Vanguard Health Care Index Fund (Health Care Index), and the S&P 500 Index.

- On the evening of March 18, the second major COVID-19 relief package was signed into law.[8] The next day, the Health Care Index and the S&P 500 Index stayed stable, but the market value of the four hospital systems increased by 23 percent.
- On April 8, Dr. Anthony Fauci, director of the Institute of Allergy and Infectious Diseases, announced that new COVID-19 cases were approaching their peak.[9] The hospital systems' market value increased by 10 percent on that day, but the Health Care Index and the S&P 500 Index increased by only 3 percent and 4 percent, respectively.

As of May 8, the Health Care Index and the S&P 500 Index had largely recovered all of their value relative to that of February 3 (101% and 90%). However, the market value of the hospital systems was still only at 75 percent of their February 3 level.

STUDY LIMITATIONS

First, we only provided evidence of four large for-profit hospital systems. For-profit hospitals are located disproportionately in southern states and outside of urban areas, which have the greatest concentration of COVID-19 patients. They also differ from other types of hospitals in various aspects,[10] such as service mix[11] and responsiveness to external changes.[12] Second, the financial information obtained from Form 10-Q does not differentiate domestic operations from international operations. In our analysis, we were unable to exclude any finances connected with overseas hospitals that these hospital systems may have. Third, stock prices reflect all signals available to the market; thus, the specific impacts of COVID-19 and the effect of government actions or other events on stock prices cannot be accurately quantified.

CONCLUSION

The mandatory financial disclosure of for-profit hospital systems provides important signals about the impact of COVID-19 on U.S. hospitals — the canary in the coal mine. While the hospitals studied are not nationally representative and many are located outside of COVID-19 hotspots, their declines in service volumes, profits, and market value as a result of COVID-19 are likely to be seen in other health systems.

The necessity of congressional relief for providers remains ambiguous, however. Hospital systems, when possible, have taken proactive measures to maintain cash positions and limit spending. Different systems have varying solvency risks and access to capital. The allocations of relief funds have been based on metrics such as revenue, expenses, or admissions,[13] without considering individual hospitals' financial vulnerability or profitability. None of the hospitals studied reported operating losses during the time period studied, which may not be the case in other geographies and hospitals serving different patient populations. As a result, hospitals in more precarious positions might not receive sufficient funds to remain viable after the pandemic, while hospitals with strong financial resilience might receive substantial support.

NOTES

1. Coronavirus Aid, Relief, and Economic Security Act of 2020, H.R. 748, 116th Cong. (2020); and Paycheck Protection Program and Health Care Enhancement Act of 2020, H.R. 266, 116th Cong. (2020).

2. Dhruv Khullar, Amelia M. Bond, and William L. Schpero, "COVID-19 and the Financial Health of U.S. Hospitals," *JAMA* 323, no. 21 (May 4, 2020): 2127–28.

3. American Hospital Association, *Hospitals and Health Systems Face Unprecedented Financial Pressures Due to COVID-19* (AHA, May 2020).

4. Christina Farr, "U.S. Hospitals Are Losing Millions of Dollars per Day in the Midst of the COVID-19 Pandemic — and Recovery May Take Years," CNBC, May 5, 2020; and Sarah Kliff, "Hospitals Knew How to Make Money. Then Coronavirus Happened.," *New York Times,* updated May 20, 2020.

5. Christi A. Grimm, *Hospital Experiences Responding to the COVID-19 Pandemic: Results of a National Pulse Survey, March 23–27, 2020* (U.S. Department of Health and Human Services, Office of Inspector General, Apr. 2020).

6. Henry J. Kaiser Family Foundation, "State Health Facts: Hospital Beds per 1,000 Population by Ownership Type, 2018," n.d.

7. "COVID-19: Executive Orders by State on Dental, Medical, and Surgical Procedures," American College of Surgeons, updated June 8, 2020.

8. Claudia Grisales, Susan Davis, and Kelsey Snell, "President Trump Signs Coronavirus Emergency Aid Package," National Public Radio, Mar. 18, 2020.

9. Todd Campbell, "Why Tenet Healthcare Shares Are Soaring 20.5% Today," *The Motley Fool* (blog), Apr. 8, 2020.

10. Ge Bai and Gerard F. Anderson. "A More Detailed Understanding of Factors Associated with Hospital Profitability," *Health Affairs* 35, no. 5 (May 2016): 889–97.

11. Jihwan Moon and Steven M. Shugan, "Nonprofit Versus For-Profit Health Care Competition: How Service Mix Makes Nonprofit Hospitals More Profitable," *Journal of Marketing Research* 57, no. 2 (2020): 193–210.

12. Jill R. Horwitz, "Making Profits and Providing Care: Comparing Nonprofit, For-Profit, and Government Hospitals," *Health Affairs* 24, no. 3 (May/June 2005): 790–801.

13. "CARES Act Provider Relief Fund: General Information," U.S. Department of Health and Human Services, updated June 24, 2020.

ABOUT THE AUTHORS

John (Xuefeng) Jiang, Ph.D., is the Plante Moran Faculty Fellow, professor of accounting and information systems, and professor of finance (by courtesy) at the Eli Broad College of Business of Michigan State University. He collects novel data to address public policy questions at the interface of accounting, finance, and health care. He has made significant contributions to the literature on credit ratings, chief financial officers, and firm disclosures. His recent research on cybersecurity has been published in *JAMA Internal Medicine* and *Annals of Internal Medicine* and covered by the *Wall Street Journal, Forbes, CBS News, U.S. News & World Report, Reuters,* and *Huffington Post*. Dr. Jiang received the 2017 American Accounting Association Distinguished Contribution to Accounting Literature Award. His Ph.D. students have been placed in the University of Florida and the National University of Singapore.

Ge Bai, Ph.D., C.P.A., is an associate professor of accounting at the Johns Hopkins Carey Business School and associate professor of health policy and management at the Johns Hopkins Bloomberg School of Public Health. She is an expert on health care pricing, policy, and management. Bai is currently conducting research on the pricing and financing of health care products and services, hospital charity care, and supply chain of medical supplies. Bai has testified before the House Ways and Means Committee, and she has written for the *Wall Street Journal* and published her studies in leading academic journals. Her work has been widely featured in major media outlets around the world and cited in government regulations and congressional testimonies.

Lovisa Gustafsson, M.B.A., is vice president of the Controlling Health Care Costs program at the Commonwealth Fund. She joined the Fund in 2016 as the program officer for Breakthrough Health Care Opportunities and was promoted to assistant vice president in July 2018. Prior to joining the Fund, Ms. Gustafsson served as senior vice president for the Marwood Group, a health care advisory organization, where she managed various outsourced private equity due diligence and strategy consulting engagements. Before her role at the Marwood Group, she worked as a manager in corporate strategy and business development at McKesson, a senior consulting

associate in quality and operations support for Kaiser Permanente, a senior policy analyst at the Commonwealth of Massachusetts Office of Medicaid, and a manager at Avalere Health LLC. Ms. Gustafsson earned an M.B.A. in health care management from the Wharton School at the University of Pennsylvania and a B.A. in sociology from Harvard University.

Gerard Anderson, Ph.D., is a professor of health policy and management and international health at the Johns Hopkins School of Hygiene and Public Health, professor of medicine at the Johns Hopkins University School of Medicine, and director of the Johns Hopkins Center for Hospital Finance and Management. Dr. Anderson is currently conducting research on policy options for containing the price of prescription drugs, hospital services, and professional services; for insurance system reforms; and for improving the supply chain resiliency of pharmaceuticals and medical devices. Prior to his arrival at Johns Hopkins, he held various positions in the Office of the Secretary, U.S. Department of Health and Human Services. D.r Anderson has directed reviews of health care systems for the World Bank, World Health Organization, and U.S. Agency for International Development in multiple countries and has directed over 100 research projects. He has authored two books on health care payment policy, published over 300 peer-reviewed articles, and testified before Congress more than 50 times.

Editorial support was provided by Maggie Van Dyke.

For more information about this brief, please contact:
John (Xuefeng) Jiang
Eli Broad College of Business
Michigan State University
jiangj@broad.msu.edu

The Commonwealth Fund

Affordable, quality health care. For everyone.

About the Commonwealth Fund
The mission of the Commonwealth Fund is to promote a high-performing health care system that achieves better access, improved quality, and greater efficiency, particularly for society's most vulnerable, including low-income people, the uninsured, and people of color. Support for this research was provided by the Commonwealth Fund. The views presented here are those of the authors and not necessarily those of the Commonwealth Fund or its directors, officers, or staff.