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# The Impact of COVID-19 Funding on Profitability of Critical Access Hospitals

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## KEY FINDINGS

- Between April 2020 and March 2022, Critical Access Hospitals (CAHs) received a median of \$1,511,301 per hospital in COVID-19 Public Health Emergency (PHE) Funding to offset lost revenue and increased expenses related to the pandemic. This cash inflow significantly increased operating profitability.
- If PHE funding had not been provided to CAHs in April 2020-March 2022, we estimate that the median operating margin would have fallen by 7.6 percentage points and the number of CAHs with negative operating margins would have increased by 16.6 percentage points. From April 2020 to March 2022:
  - > Median operating margin with PHE funding was 7.3%.
  - > Median estimated operating margin without PHE funding would have been -0.3%.
  - > The percent of CAHs with negative operating margin with PHE funding was 24.8%.
  - > The estimated percent of CAHs with negative operating margin without PHE funding would have been 41.4%.

## PURPOSE

The purpose of this study is to assess the impact of Public Health Emergency funding (PHE funding) on Critical Access Hospitals (CAHs) by 1) comparing CAH profitability before the COVID-19 pandemic (six years before April 2020) to during the pandemic (April 2020 – March 2022), and; 2) estimating what profitability would have been if PHE funding had not been provided to CAHs. Study findings illustrate the importance of federal funding to CAHs that often are the sole providers of care in their rural communities.

## BACKGROUND

The COVID-19 pandemic impacted hospitals in many ways, most notably through canceled elective procedures, increased patient load, and provider shortages.<sup>1-3</sup> CAHs were particularly affected because they are small rural hospitals that serve a large proportion of public health insurance beneficiaries,<sup>4</sup> have low financial liquidity, and rely heavily on revenue from outpatient services.<sup>5</sup> The COVID-19 pandemic not only exacerbated these financial challenges, but also increased workforce shortages, diminished access to capital, and shifted hospital focus from high-margin areas of care to more acute COVID-19 cases.<sup>5</sup>

To offset losses during COVID-19 and keep hospital doors open during the pandemic, the federal government instituted the Coronavirus Aid, Relief, and Economic Security (CARES) Act in March of 2020 and began distributing funds in April.<sup>6</sup> The CARES Act included the Provider Relief Fund (PRF), which distributed a total of \$178 billion to rural and urban providers; the American Rescue Plan (ARP), which supplied rural hospitals with an additional \$8.5 billion to maintain access to services for rural residents; and the Paycheck



Protection Program (PPP), which has allocated \$100 billion in PPP loans to health care providers.<sup>7</sup> PRF funding was rolled out in four targeted phases from April 2020 through January 2022 with ARP funds being distributed alongside phase 4 funding from November 2021 through January 2022.<sup>8</sup> In this study, the funds described above are referred to collectively as “PHE funding.”

**DATA AND SAMPLE**

CAH data were obtained from the June 2022 release of the Health Care Cost Reporting Information System (HCRIS) produced by the Centers for Medicare & Medicaid Services, appended with additional hospital-years from the December 2022 release, which occurred during the study period.<sup>9</sup> The initial sample contained 9,179 hospital-years from 1,367 unique non-Indian Health Service CAHs with Medicare cost reports ending between April 2015-March 2022 and at least 360 days in the reporting period. Each hospital had to submit a cost report for at least two years in pre-pandemic years (April 2015-March 2020) and two years in post-pandemic years (April 2020-March 2022) to be included in the sample. Hospitals were excluded if they reported negative values for PHE funding (n = 49) or they reported values of zero for PHE funding in both April 2020-March 2021 and April 2021-March 2022 (n = 204). Our final balanced sample included 1,039 unique CAHs and 7,178 hospital years between April 2015-March 2022.

The following HCRIS data were included:

**TABLE 1: HCRIS Variable Definitions**

Variable	Definition	Worksheet G-3
Operating revenue	Net patient revenue + other revenue	Lines 3 + (8 to 22) + 24
Operating income	Net patient revenue + other revenue – total operating expenses	Lines 3 + (8 to 22) + 24 - 4
Total revenue	Total revenue	Lines 3 + 25
Net income	Total revenue – total expenses	Line 29
COVID-19 Funding	COVID-19 Public Health Emergency Funding	Line 24.5

*Note: PHE funding included in this study portrays funding reported in HCRIS Line 24.5 from April 2020 until the end of our study, March 2022.<sup>9</sup> Because of this, our sample may not include the entirety of funding distributed to hospitals. In addition, the reporting instructions for Line 24.50, COVID-19 PHE Funding, indicate to “aggregate revenue received for COVID-19 public health emergency (PHE) funding including both provider relief fund (PRF) and Small Business Association Loan Forgiveness amounts” and may not include additional funds from private payers and/or Medicaid.*

**METHODS**

Two common measures of profitability were selected: operating margin and total margin. *Operating margin* measures the control of operating expenses relative to operating revenue (net patient and other revenue). A positive value indicates operating expenses are less than operating revenue (an operating profit) and a negative value indicates operating expenses are greater than operating revenue (an operating loss). *Total margin* measures the control of total expenses relative to total revenues. A positive value indicates total expenses are less than total revenues (a profit), and a negative value indicates total expenses are greater than total revenues (a loss). Total margin includes contributions, donations, income from investments, government appropriations, and associated expenses, whereas operating margin excludes these sources of income because they are not directly related to hospital operations.

We define the start of the COVID-19 years as April 1, 2020, because PHE funding was initially distributed in April 2020. Therefore, we used cost report data from April 1 – March 31 each year. In this way, we were able to separate the beginning of 2020, January – March, before the distribution of any PHE funding, while maintaining 12-month years. This allows for accurate comparison between each year. Table 2 describes the pre-COVID-19 and COVID-19 periods.



**TABLE 2: Cost reporting periods included**

	Data Label	Cost reports ending between	
Pre-COVID-19 period	2015-16	Apr 1, 2015	Mar 31, 2016
	2016-17	Apr 1, 2016	Mar 31, 2017
	2017-18	Apr 1, 2017	Mar 31, 2018
	2018-19	Apr 1, 2018	Mar 31, 2019
	2019-20	Apr 1, 2019	Mar 31, 2020
COVID-19 period	2020-21	Apr 1, 2020	Mar 31, 2021
	2021-22	Apr 1, 2021	Mar 31, 2022

Descriptive statistics were used to compare CAH profitability in the pre-COVID-19 and COVID-19 periods. To estimate what profitability would have been if PHE funding had not been provided to CAHs, we simulated operating and total margin with the PHE funding removed. We then compared the simulated margin to the actual margin as an estimate of the PHE funding impact on CAH profitability in 2020-2022. This approach assumes that hospitals did not change their costs in response to the PHE funding. The actual and simulated operating and total margins are defined in Table 3.

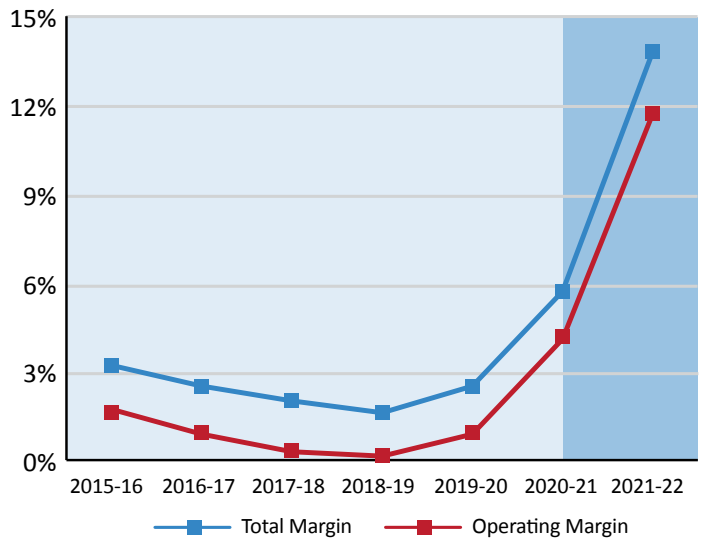
**TABLE 3: Definitions for Actual and Simulated Operating and Total Margins**

	Operating margin	Total margin
<b>Actual</b>	$\frac{\text{Operating income}}{\text{Operating revenue}}$	$\frac{\text{Net income}}{\text{Total revenue}}$
<b>Simulated</b>	$\frac{\text{Operating income} - \text{PHE Funding}}{\text{Operating revenue} - \text{PHE Funding}}$	$\frac{\text{Net income} - \text{PHE Funding}}{\text{Total revenue} - \text{PHE Funding}}$
<b>Difference</b>	Actual operating margin – simulated operating margin	Actual total margin – simulated total margin

**RESULTS**

**CAH profitability during the pre-COVID-19 and COVID-19 periods**

**FIGURE 1: Median actual CAH operating and total margin, 2015-16 to 2021-22\***

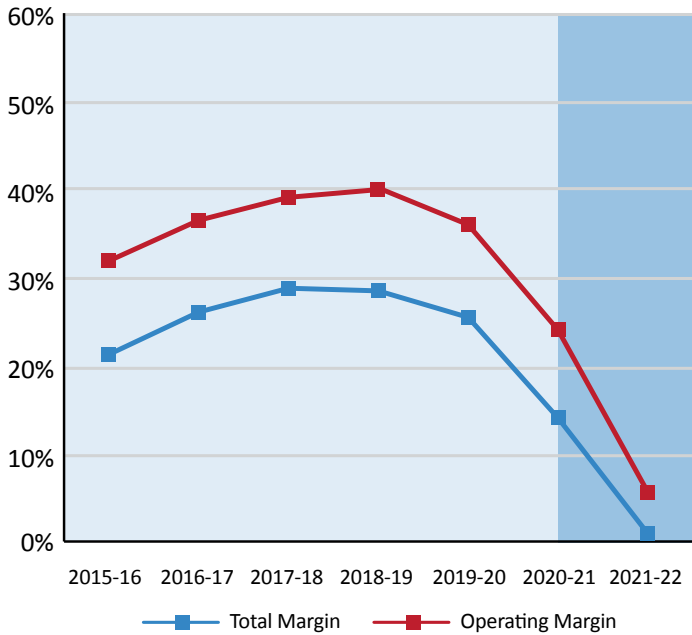


\*Note: Blue shading denotes the COVID-19 period and includes PHE funding.

Figure 1 portrays a decreasing trend in both operating and total margin during the pre-COVID-19 period.<sup>10</sup> However, during the COVID-19 period, both measures of profitability increase well beyond their peak in pre-COVID-19 years likely due to PHE funding.<sup>5</sup>



**FIGURE 2: Percentage of CAHs with a negative actual operating and total margin, 2015-16 to 2021-22\***



\*Note: Blue shading denotes the COVID-19 period and includes PHE funding

Figure 2 shows the percentage of CAHs with negative total and operating margins in the pre-COVID-19 and COVID-19 periods. The percent reporting negative margins increases during pre-COVID-19 years and then drops during COVID-19 years. This coincides with the increase in both margins during 2020-2022 displayed in Figure 1.

**Estimated effect of PHE funding on CAH profitability**

Table 4 compares CAH profitability with and without PHE funding. If CAHs had not received PHE funding in 2020-21, then we estimate that the median actual operating margin of 4.0% would have dropped to -3.0%, a decline of 7.0 percentage points. In 2021-22, we estimate an even larger decline of 9.6 percentage points in median operating margin without PHE funding.

A similar result is found for median total margin. If CAHs had not received PHE funding in 2020-21, then we estimate that the median total margin of 5.6% would have dropped to -1.2%, a decline of 6.8 percentage points. In 2021-22, we estimate a decline of 9.4 percentage points in median total margin without

**TABLE 4: Median CAH profitability with (actual) and without (simulated) PHE funding during 2020-21 and 2021-22**

	April 1, 2020 – March 31, 2021	April 1, 2021 – March 31, 2022	Full Period: April 1, 2020 – March 31, 2022
Hospital years	1,039	1,039	2,078
Percent of hospitals reporting PHE funding	74.7%	88.0%	81.3%
Median PHE funding	\$1,163	\$1,910	\$1,511
Median actual operating margin	4.0%	11.7%	7.3%
Median simulated operating margin	-3.0%	2.1%	-0.3%
Difference <sup>a</sup>	-7.0%	-9.6%	-7.6%
Median actual total margin	5.6%	13.8%	9.4%
Median simulated total margin	-1.2%	4.4%	1.9%
Difference <sup>a</sup>	-6.8%	-9.4%	-7.5%

Note(s): <sup>a</sup> Differences presented may be impacted by rounding.



PHE funding. Both operating and total margins simulated without PHE funding in 2021-2022 (the second year of the pandemic) suggest an increase in margins to levels greater than margins observed in the pre-pandemic period; however, it is important to note that accounting for revenues and expenses during the pandemic was complicated, and timing differences in reporting along with other challenges unique to rural providers may affect these values. Caution is warranted in interpretations.<sup>4</sup> More data are required to understand longer-term trends in financial performance.

Table 5 compares the percentage of CAHs with a negative profitability margin with and without PHE funding. If CAHs had not received PHE funding in 2020-21, then we estimate that the percentage with a negative operating margin would have increased from 34.0% to 45.6%, an increase of 11.7 percentage points. In 2021-22, we estimate an even larger increase of 21.6 points in the percentage with a negative operating margin without PHE funding.

A similar result is found for median total margin. If CAHs had not received PHE funding in 2020-21, then we estimate that the percentage with a negative total margin would have increased from 24.1% to 40.7%, an increase of 16.7 percentage points. In 2021-22, we estimate a similar increase of 16.7 points in the percentage with a negative total margin without PHE funding. As with the margins reported in Table 4, caution is warranted in interpreting these values as they may have been impacted by timing of reporting and other challenges unique to rural providers.<sup>4</sup>

**TABLE 5: Percentage of CAHs with negative operating and total margin with (actual) and without (simulated) PHE funding, 2020-2022**

	April 1, 2020 – March 31, 2021	April 1, 2021 – March 31, 2022	Full Period: April 1, 2020 – March 31, 2022
Actual percentage of CAHs with a negative operating margin	34.0%	15.6%	24.8%
Simulated percentage of CAHs with a negative operating margin if no PHE funding	45.6%	37.2%	41.4%
Difference <sup>a</sup>	11.7%	21.6%	16.6%
Actual percentage of CAHs with a negative total margin	24.1%	10.9%	17.5% 16.7%
Simulated percentage of CAHs with a negative total margin if no PHE funding	40.7%	27.5%	34.1%
Difference <sup>a</sup>	16.7%	16.7%	

**Note(s):** <sup>a</sup> Differences presented may be impacted by rounding.



## DISCUSSION

While previous studies indicated the avenues by which hospitals and health care systems were hurt by the pandemic,<sup>1-3</sup> these results quantify the impact due to PHE funding and simulate financial performance as if government funding was not dispersed. Cost reports for 2020, 2021, and 2022 portray a large increase in profitability. However, as stated previously, these results should not be interpreted in isolation. Government relief funding that came in the form of the PRF, PPP, and ARP mitigated many of the negative effects of COVID-19 and even increased financial performance beyond pre-pandemic levels. While this is good news for hospitals, especially CAHs, trends in the absence of funding paint a different picture. Profitability, as measured by simulated margins in the absence of PHE funding was significantly lower and the percent of hospitals with negative margins was significantly higher in fiscal year 2020-2021 compared to pre-pandemic trends. In 2021-2022, trends without PHE funds show improvements in financial performance above pre-pandemic levels. However, this apparent increase even in the absence of funds should be interpreted cautiously. Financial reporting during COVID-19 was complicated, and differences in the timing of reporting of revenues and expenses may skew results. For example, expenses may have been reported during one accounting period while many revenues were deferred to future periods. In light of potential timing differences in reporting and the continued challenges rural hospitals face such as low patient volume, a large proportion of uninsured or publicly insured, and high patient bypass,<sup>4</sup> financial performance should continue to be monitored as future data become available. Without government funding, financial performance, specifically profitability, may return to pre-pandemic trends of low and decreasing margins as hospitals experience the impacts of inflation and labor shortages. According to study findings, Federal funding proves to be an important source of revenue for

CAHs. Administrators should be wary of this fact and pay close attention to CAH financial performance in the months and years to come. Finally, Federal funders could consider mechanisms to improve the financial well-being of CAHs as well as other rural hospitals that face continued financial pressures and serve as the sole source of care in their communities.

Future studies should consider more closely the data quality of PHE funding reported on the Medicare cost report. Some hospitals may report funding in different line items of their cost report, for example as government appropriations. Additionally, some hospitals reported negative or zero PHE funding on line 24.5, in both their 2020 and 2021 Medicare cost reports. Finally, supplemental funding received from state governments, private payers and/or Medicaid may be reflected elsewhere in the cost report. More information about how and when hospitals reported all sources of relief funding during the pandemic will be helpful in continuing to parse out the effects of the pandemic and federal PHE funds.



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