



# Characteristics of Communities Served by Critical Access Hospitals at High Risk of Financial Distress in 2019

Sharita R. Thomas, MPP; George H. Pink, PhD; and Kristin L. Reiter, PhD  
University of North Carolina

## KEY FINDINGS

In comparison to other CAHs, CAHs predicted to be at high risk of financial distress serve communities that have significantly:

- Higher percentages of non-Whites and Blacks in particular.
- Lower rates of high school graduation.
- Higher rates of unemployment.
- Worse health status as measured by percentage of obese adults, tobacco using adults, self-rated health of fair or poor, and number of premature deaths.

## OVERVIEW

In a 2017 article, the NC Rural Health Research Program (NC RHRP), a member of the Flex Monitoring Team (FMT) presented the Financial Distress Index (FDI).<sup>1</sup> The FDI is an algorithm that uses historical data about hospital financial performance, government reimbursement, organizational characteristics, and market characteristics to predict the current risk of financial distress. The model assigns every rural hospital to one of four financial risk categories: high, medium-high, medium-low, or low. In a previous findings brief, NC RHRP found disparities in certain characteristics of communities served by all rural hospitals at high risk of financial distress compared to those served by hospitals that were not at high risk of financial distress.<sup>2</sup> Critical Access Hospitals (CAHs) differ from other rural hospitals in multiple ways (e.g., they are smaller—having 25 or fewer inpatient beds—and are more likely to be located in isolated areas), so understanding disparities among communities served by CAHs at varying risk of financial distress is important.<sup>3</sup>

CAHs are unlike other rural hospitals as they are reimbursed based on reported costs, receiving 99% of Medicare allowable costs for most outpatient and inpatient services.<sup>4,5</sup> CAHs also differ from other rural hospitals in that they must be: 1) at least 15 miles by secondary road or

mountainous terrain OR 2) 35 miles by primary road from the nearest hospital OR 3) declared a “necessary provider” by the state’s governor. As such, CAH closures could put access to hospital services at greater risk for rural residents served by a CAH who would have farther to travel to the next hospital. The purpose of this brief is to use updated results from the FDI to compare the characteristics of communities served by CAHs at high risk of financial distress to those served by CAHs that are not at high risk of financial distress in 2019.

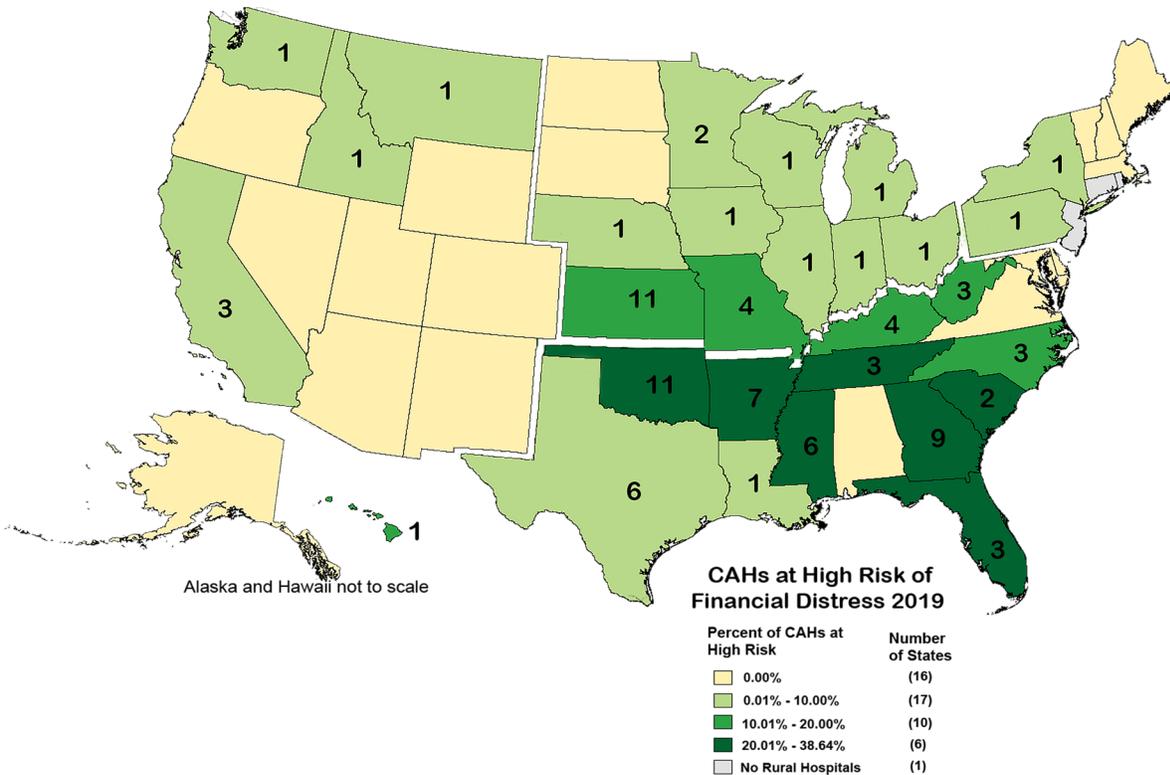
## RESULTS

The model calculated valid FDI scores for 1,254 CAHs; 91 (7.3%) were identified to be at high risk of financial distress, 236 (18.8%) at mid-high risk of financial distress, 650 (51.8%) at mid-low risk of financial distress, and 277 (22.1%) at low risk of financial distress.<sup>6</sup> Figure 1 shows that 63.7% (58) of CAHs at high risk of financial distress are located in the South Census region. The Midwest is the Census region with the next highest number of CAHs at high risk of financial distress with 24 (26.4%). The states with the largest percentage of CAHs at high risk are South Carolina (40.0%), Oklahoma (36.7%), Georgia (34.6%), Arkansas (25.9%), Florida (25.0%), Mississippi (24.0%), and Tennessee (23.1%).



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**Figure 1. Geographic Distribution of the Number and Percentage of CAHs at High Risk of Financial Distress in 2019**



**Table 1. Characteristics of Communities Served by CAHs at High Risk and Not at High Risk of Financial Distress in 2019**

	At high risk of financial distress, median (n <sup>a</sup> )	Not at high risk of financial distress, median (n)	P-value <sup>b</sup>
<b>Demographics (Market)</b>			
Percent non-White <sup>c</sup>	18.1 (91)	8.1 (1,163)	<0.0001
Percent Black <sup>c</sup>	2.5 (91)	0.9 (1,163)	<0.0001
Percent 65 years or older	19.0 (91)	20.0 (1,163)	
<b>Socio-Economics (Market)</b>			
High school graduation <sup>d</sup>	82.2 (91)	88.2 (1,163)	<0.0001
Unemployment <sup>d</sup>	8.8 (91)	6.9 (1,163)	<0.0001
<b>Health Status (County)</b>			
Percent in fair or poor health <sup>e</sup>	19.0 (91)	14.0 (1,161)	<0.0001
Percent of obese adults	33.0 (91)	31.0 (1,161)	0.0001
Percent tobacco use	20.0 (91)	17.0 (1,161)	<0.0001
Years of potential life lost per 100,000 <sup>f</sup>	9,305 (90)	7,323 (1,152)	<0.0001

<sup>a</sup> This is the number of hospitals with available county-level or hospital-specific data. County-level data were not available for all hospitals as these variables were not utilized to produce the financial distress results.

<sup>b</sup> Wilcoxon rank sum test of medians were used to account for outliers.

<sup>c</sup> Blacks are also counted again for the non-White category. Hispanic or Latino ethnicity is not mutually exclusive from the race categories.

<sup>d</sup> These values are a percent. Percent graduated high school is assessed for those 25 years of age or older.

<sup>e</sup> This measure of health is self-reported.

<sup>f</sup> Years of potential life lost is a measure of premature mortality by representing the years of life lost due to death prior to age 75 years.



Table 1 shows differences in demographics, socio-economic, and health status variables among communities served by CAHs at high risk of financial distress and those that are served by other CAHs. We examined race and ethnicity using census data. Due to small numbers, we combined all race categories except for “White” to create a “non-White” category. Census data allow for Hispanic ethnicity to identify with any race category, so the “Black” and “Non-White” categories also include Hispanics who identify as White. Communities served by CAHs at high risk of financial distress had significantly higher percentages of non-Whites (18.1% vs. 8.1%) and Blacks (2.5% vs. 0.9%) in particular. The rate of high school graduation was significantly lower for communities served by CAHs at high risk of financial distress (82.2% vs. 88.2%), and the unemployment rate was significantly higher (8.8% vs. 6.9%) compared to communities served by CAHs not at high risk of financial distress. Communities served by CAHs at high risk of financial distress were located in counties with overall worse health status than counties where CAHs were not at high risk of financial distress. Comparatively, these counties had higher percentages of obese adults, tobacco using adults, self-rated health of fair or poor, and had more premature deaths.

## DISCUSSION

Communities served by CAHs at high risk of financial distress are those most vulnerable to experiencing a closure. The communities served by CAHs at high risk of financial distress have poorer overall health status in addition to a larger burden of socio-economic challenges than communities served by CAHs not at high risk of financial distress. These results are concerning as CAHs may be the only practical source for health care within a small or isolated rural area. Additionally, CAH and rural hospital closures may disproportionately affect underserved groups.<sup>7</sup>

## METHODS

Rural hospital financial performance, government reimbursement, organizational characteristics, and county-level data were obtained from the Centers for Medicare & Medicaid Services (CMS) Hospital Cost Report Information System (“Medicare Cost Reports”), Provider of Services, Hospital Service Area File, County Health Rankings, and Nielsen-Claritas Pop-Facts data. Using data through 2017, we predict the 2019 Financial Distress Index (FDI) values for CAHs.

Hospital-specific market areas were composed using Medicare discharge counts by ZIP code from the CMS Hospital Service Area File, where the market is defined as the smallest number of ZIP codes comprising at least 75 percent of the hospital’s Medicare discharges, plus those ZIPs that contribute at least three percent of that hospital’s Medicare admissions for the year. Except for hospitals in Alaska and Hawaii, ZIP codes more than 150 miles from the hospital are disqualified from being in its market. Hospital-specific markets were used to define communities to assess demographic and socio-economic variables. As health outcome data is not available at the hospital-specific market level, the county where the hospital is located was used to assign health outcomes data.

We identified 1,174 rural CAHs based on location outside Metropolitan Core Based Statistical Areas or within Metropolitan areas but in Rural-Urban Commuting Area codes (RUCA) of four or greater (the definition used by the Federal Office of Rural Health Policy) as well as by CMS provider identification numbers. There were 80 CAHs identified to be located in metropolitan areas due to gaining designation as a necessary provider prior to 2006. Characteristics of communities served by CAHs at high risk of financial distress were compared to communities served by CAHs that are not at high risk of financial distress using bivariate analyses.

## REFERENCES AND NOTES

1. Holmes GM, Kaufman BG, Pink GH. Predicting financial distress and closure in rural hospitals. *The Journal of Rural Health*. 2017 Jun;33(3):239-49.
2. Richman EL, Pink GH. *Characteristics of Communities Served by Hospitals at High Risk of Financial Distress*. NC Rural Health Research Program, UNC-Chapel Hill after NC Rural Health Research Program. December 2017.
3. Large rural areas are those with a Rural Urban Community Area (RUCA) code less than 7, while small rural areas have a RUCA of 7, 8, or 9, and isolated rural areas have a RUCA of 10. More information on RUCA codes can be found by visiting <http://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx>.
4. Holmes GM, Pink G. *Change in Profitability and Financial Distress of Critical Access Hospitals from Loss of Cost-Based Reimbursement*. NC Rural Health Research Program, UNC-Chapel Hill. December 2013.
5. Due to sequestration, the current reimbursement to CAHs was effectively reduced from 101% to 99% of costs.
6. A financial distress index score is only produced for rural hospitals with appropriate data.
7. Thomas SR, Holmes GM, Pink GH. To what extent do community characteristics explain differences in closure among financially distressed rural hospitals? *Journal of Health Care for the Poor and Underserved*. 2016;27(4):194-203.