

Geographic Variation in the 2019 Risk of Financial Distress among Rural Hospitals

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KEY FINDINGS

- More than 20% of rural hospitals are predicted to be at high risk (196) or mid-high risk (361) of financial distress in 2019.
- The South Census region has the largest percentage of rural hospitals at both high and mid-high risk of financial distress.
- Alabama, Georgia, Oklahoma, Texas, Kansas, Mississippi, and Tennessee have the largest number of rural hospitals predicted to be at high risk of financial distress.

OVERVIEW

In a 2017 article, we presented the Financial Distress Index (FDI).¹ 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, mid-high, mid-low, or low.² In a previous brief, we found substantial geographic variation in the risk of financial distress among rural hospitals.³ The purpose of this brief is to use updated results from the FDI to describe the geographic variation in the 2019 risk of financial distress among rural hospitals.

RESULTS

The FDI model classified 2,129 rural hospitals; 196 (9.2%) were predicted to be at high risk of financial distress, with 361 (17.0%) predicted to be at mid-high risk of financial distress, while 934 (43.9%) were predicted to be at mid-low risk of financial distress, and 638 (30.0%) were predicted to be at low risk of financial distress.

Figure 1: Number and Percentage of Rural Hospitals at High Risk of Financial Distress in 2019

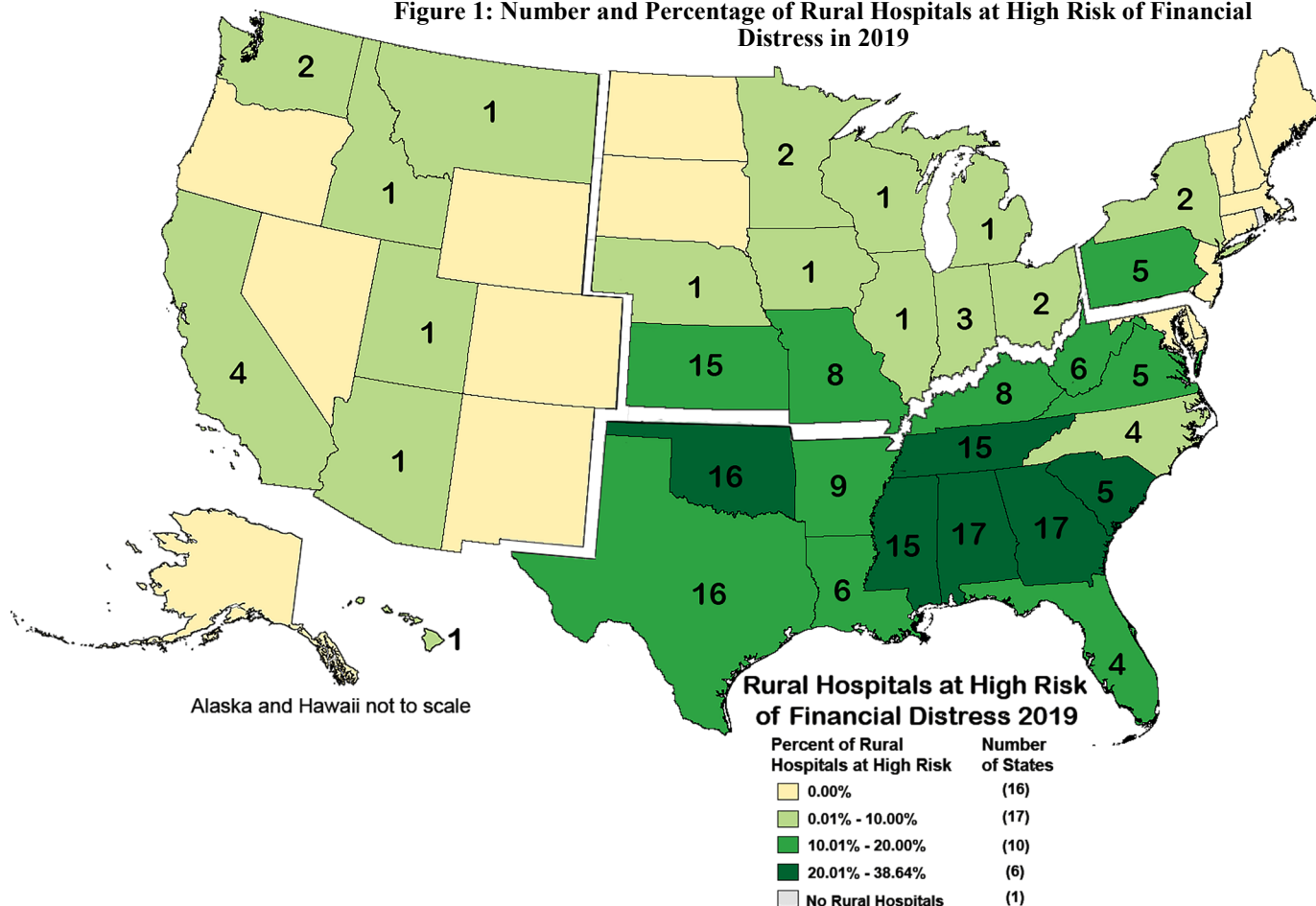
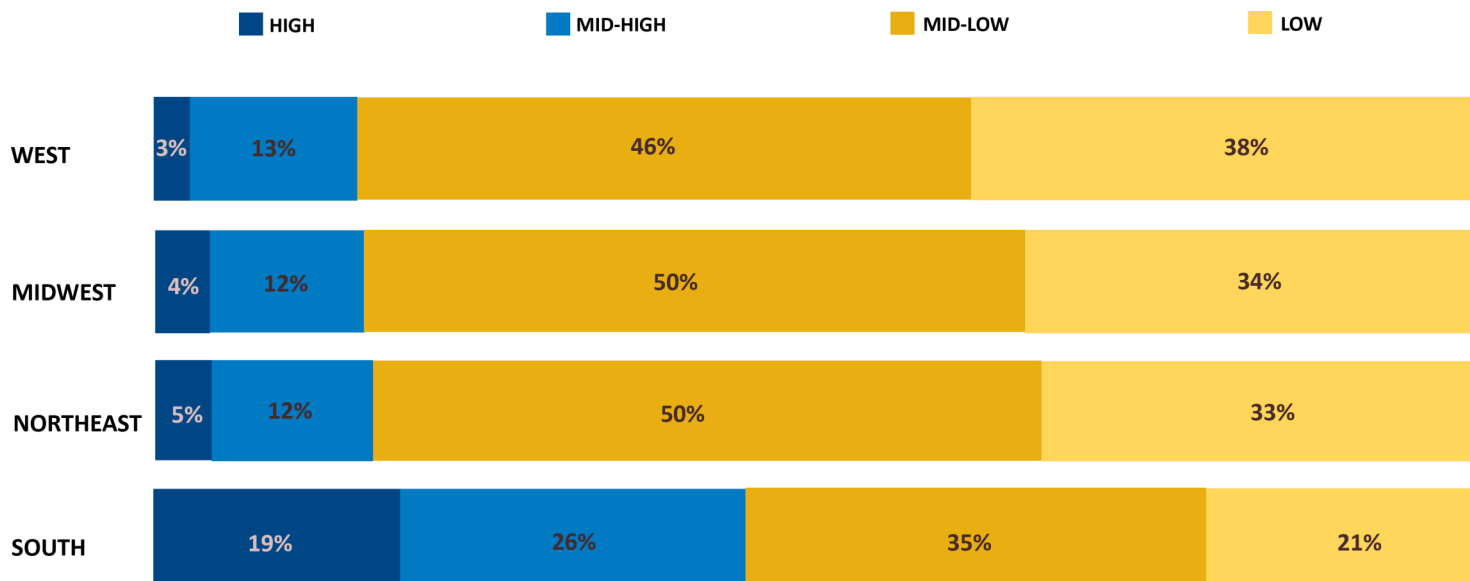


Figure 1 shows that the states with the largest number of rural hospitals predicted to be at high risk of financial distress are Alabama (17), Georgia (17), Oklahoma (16), Texas (16), Kansas (15), Mississippi (15), and Tennessee (15). The states with the largest percentage of rural hospitals predicted to be at high risk are Alabama (38.6%), Tennessee (27.8%), Georgia (25.8%), Mississippi (24.6%), Oklahoma (24.2%), and South Carolina (21.7%). Sixteen states have no rural hospitals predicted to be at high risk of financial distress in 2019.

Figure 2 shows that the South Census region has the largest percentage of rural hospitals at both high and mid-high risk of financial distress. The remaining Census regions have relatively similar percentages of rural hospitals in each risk of financial distress category. For rural hospitals predicted to be at high risk of financial distress, 72.9% are in the South, 17.9% in the Midwest, 5.6% in the West, and 3.6% in the Northeast. Among the 16 states that have no rural hospitals predicted to be at high risk of financial distress, most are in the Northeast and West Census regions.

Figure 2: Percentage of Rural Hospitals in Each Financial Distress Risk Category in 2019 by Census Region



DISCUSSION

The geographic variation in risk of financial distress among rural hospitals is striking. Nearly 73% of rural hospitals predicted to be at high risk of financial distress in 2019 are in the South and six out of the 16 southern states have over 20% of their rural hospitals with a high risk of financial distress prediction for 2019.

The geographic variation in risk of financial distress should be of concern to policy makers for two reasons; first, the probability of closure and reduction of services is significantly greater for rural hospitals predicted to be at high risk of financial distress.⁴ Second, rural residents are typically older, poorer, more dependent on public insurance, and in worse health than urban residents, and may be disproportionately impacted by rural hospital financial distress and closure.⁵⁻⁷ Disaggregating data to specific units of geography can highlight differences in health status.

In a 2019 FDI companion brief, we find that communities served by rural hospitals predicted to be at high risk of financial distress have larger percentages of non-Whites, lower socioeconomic status, and worse health outcomes than communities served by rural hospital not predicted to be at high risk of financial distress.⁸ In another 2019 FDI companion brief, we find that the percentage of rural hospitals predicted to be at high risk of financial distress is growing in the South as well as among Medicare Dependent Hospitals (MDHs) and Prospective Payment System (PPS) hospitals.⁹ Over 80% of the MDHs predicted to be at high risk of financial distress are in the South.

There is a large geographic disparity in risk of financial distress among rural hospitals; with the South census region having a much higher percentage of rural hospitals predicted to be at high risk of financial distress in 2019.

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 2015 to 2019 FDI values for rural hospitals. Our FDI model assigns rural hospitals to high, mid-high, mid-low or low risk of financial distress levels.

Hospital-specific market areas were composed using Medicare discharge counts by ZIP code from the CMS Hospital Service Area File. A ZIP code is included in the market if: when sorted on descending number of that hospital’s Medicare discharges, it is among those that comprise 75 percent of that hospital’s Medicare discharges; or if it contributes 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 hospitals as rural 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). Characteristics of communities served by rural hospitals predicted to be at high risk of financial distress were compared to communities served by rural hospitals that are predicted to not be at high risk of financial distress using bivariate analyses.

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Appendix: Number and Percentage of Rural Hospitals by Risk of Financial Distress in 2019

State	Low Risk (%)	Mid-Low Risk (%)	Mid-High Risk (%)	High Risk (%)	Unclassified
NORTHEAST					
Connecticut	0	2	0	0	0
Maine	6 (24)	16 (64)	2 (8)	0	1
Massachusetts	2 (40)	3 (60)	0	0	0
New Hampshire	5 (31)	11 (69)	0	0	0
New Jersey	1	0	0	0	0
New York	13 (24)	27 (49)	8 (15)	2 (4)	5
Pennsylvania	16 (33)	15 (31)	8 (17)	5 (10)	4
Rhode Island*	N/A	N/A	N/A	N/A	N/A
Vermont	8 (62)	4 (31)	1 (8)	0	0
MIDWEST					
Illinois	24 (32)	35 (47)	15 (20)	1 (1)	0
Indiana	16 (30)	28 (52)	6 (21)	3 (3)	1
Iowa	22 (23)	68 (72)	4 (4)	1 (1)	0
Kansas	7 (6)	59 (54)	26 (24)	15 (14)	3
Michigan	17 (25)	33 (49)	13 (19)	1 (1)	3
Minnesota	43 (46)	45 (48)	2 (2)	2 (2)	2
Missouri	16 (25)	27 (42)	10 (15)	8 (12)	4
Nebraska	31 (43)	35 (49)	5 (7)	1 (1)	0
North Dakota	17 (46)	19 (51)	1 (3)	0	0
Ohio	33 (46)	27 (38)	7 (10)	2 (3)	2
South Dakota	19 (41)	22 (48)	5 (11)	0	0
Wisconsin	44 (57)	25 (32)	4 (5)	1 (1)	3
SOUTH					
Alabama	6 (13)	5 (11)	16 (34)	17 (36)	3
Arkansas	7 (14)	21 (43)	11 (22)	9 (18)	1
Delaware	2 (100)	0	0	0	0
Florida	6 (25)	3 (13)	10 (42)	4 (17)	1
Georgia	13 (19)	18 (26)	18 (26)	17 (25)	3
Kentucky	23 (32)	23 (32)	12 (17)	8 (11)	5
Louisiana	1 (2)	23 (43)	22 (42)	6 (11)	1
Maryland	3 (60)	1 (20)	1 (20)	0	0
Mississippi	8 (12)	15 (22)	23 (34)	15 (22)	6

*Rhode Island has no hospitals qualifying as “rural” based on our definition of being a short-term, general acute, non-federal hospital that is either not located in a metropolitan county, or is located in a RUCA type 4 or higher, or is a Critical Access Hospital.

State	Low Risk (%)	Mid-Low Risk (%)	Mid-High Risk (%)	High Risk (%)	Unclassified
SOUTH (continued)					
North Carolina	22 (39)	20 (35)	9 (16)	4 (7)	2
Oklahoma	11 (16)	20 (29)	19 (27)	16 (23)	4
South Carolina	6 (23)	7 (27)	5 (19)	5 (19)	3
Tennessee	13 (23)	18 (32)	8 (14)	15 (26)	3
Texas	23 (15)	71 (46)	31 (20)	16 (10)	15
Virginia	8 (29)	10 (36)	3 (11)	5 (18)	2
West Virginia	6 (18)	9 (27)	10 (30)	6 (18)	2
WEST					
Alaska	8 (67)	4 (33)	0	0	0
Arizona	7 (39)	8 (44)	2 (11)	1 (6)	0
California	23 (40)	22 (38)	8 (14)	4 (7)	1
Colorado	15 (38)	21 (53)	3 (8)	0	1
Hawaii	1 (8)	5 (38)	5 (38)	1 (8)	1
Idaho	7 (24)	15 (52)	6 (21)	1 (3)	0
Montana	11 (21)	30 (58)	5 (10)	1 (2)	5
Nevada	3 (23)	6 (46)	3 (23)	0	1
New Mexico	10 (42)	12 (50)	2 (8)	0	0
Oregon	16 (50)	14 (44)	0	0	2
Utah	14 (70)	3 (15)	2 (10)	1 (5)	0
Washington	13 (30)	19 (43)	9 (20)	2 (5)	1
Wyoming	12 (52)	10 (43)	1 (4)	0	0
TOTAL	638 (29)	934 (42)	361 (16)	196 (9)	91 (4)

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