



# The Chartis Center for Rural Health

*Insight and Solutions to Address Today's Most Complex Challenges*



**THE CHARTIS GROUP**

CHARTIS CENTER FOR RURAL HEALTH

*The Rural Health Safety Net Under Pressure:  
Understanding the Potential Impact of COVID-19*

April 2020

## Key Points

- Prior to the COVID-19 pandemic, indicators tracked by The Chartis Center for Rural Health all showed that the instability in the rural health safety net was worsening – not improving.
- Key services are disappearing across rural America and the emergence of COVID-19 magnifies the lack of access to intensive care unit beds in these communities.
- The pandemic threatens to further weaken the viability of rural hospitals, which rely overwhelmingly on revenue associated with outpatient services.

In the study, '[The Rural Health Safety Net Under Pressure: Rural Hospital Vulnerability](#),' The Chartis Center for Rural Health utilized a multilevel regression model to determine the likelihood of closure for the nation's rural hospitals. Since 2010, nearly 130 rural hospitals have ceased operations<sup>1</sup> and the model developed by The Chartis Center for Rural Health revealed that 453 rural hospitals (nearly 25 percent) are vulnerable to closure.

The emergence of COVID-19 has added a new – and unexpected – pressure point that threatens to further erode the rural health safety net. While the COVID-19 crisis intensifies in metropolitan areas nationwide, we are learning of hot spots of infection in less populous areas in states such as Arkansas, Georgia and Mississippi, which could mean these areas are disproportionately impacted by the virus<sup>2</sup>. Research from The Chartis Center for Rural Health shows that rural populations are older, less healthy and less affluent than their urban counterparts. Additionally, these communities face less access to care (e.g., mental health, primary care) and important services such as [obstetrics are being eliminated](#) thereby forcing individuals to either forego or delay treatment or travel greater distances for care<sup>3</sup>.

For rural providers, the spread of COVID-19 across a vulnerable population has the potential to place a significant strain on existing resources (financial and operational), staffing and expertise. By definition, Critical Access Hospitals have *25 or fewer beds*, while Rural and Community Hospitals range between *26 and 200 beds*<sup>4</sup>. Nationally, the number of intensive care unit (ICU) beds in rural hospitals is 6,309.

One of the many precautions undertaken by hospitals and healthcare providers to limit the spread of the virus and reduce infection is to cancel or postpone non-essential tests, procedures and other medical appointments. Today, 44 percent of rural hospitals operate in the red and the loss (or



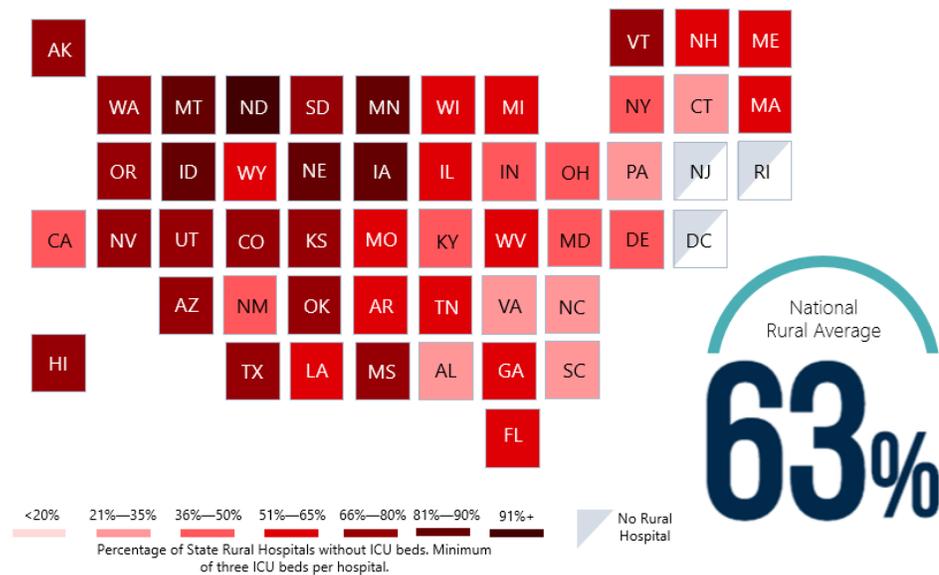
postponement) of outpatient service revenue compounds the potential impact of COVID-19<sup>5</sup>. This updated analysis builds upon the findings of our vulnerability study to provide new insight into the stability of the rural health safety net amidst the COVID-19 pandemic.

### Pressure Point – Access to Intensive Care Unit Beds

Access to beds, particularly ICU beds, is critical for responding to the pandemic. Analysis conducted by The Chartis Group shows that the national average is 19 ICU beds per 100,000 people. The national total number of ICU beds is just over 62,000<sup>6</sup>. Today, 19.3 percent of the U.S. population, or one in every five Americans, lives in rural communities<sup>7</sup>. Yet only 6,309 ICU beds are located in rural hospitals, which is approximately one ICU bed for every 9,500 rural Americans. As a result, much of rural America is part of an ICU desert. Of the 6,309 rural ICU beds, 870 are spread throughout the country’s approximately 1,300 Critical Access Hospitals, while the remaining 5,439 ICU beds are in Rural and Community Hospitals<sup>8</sup>.

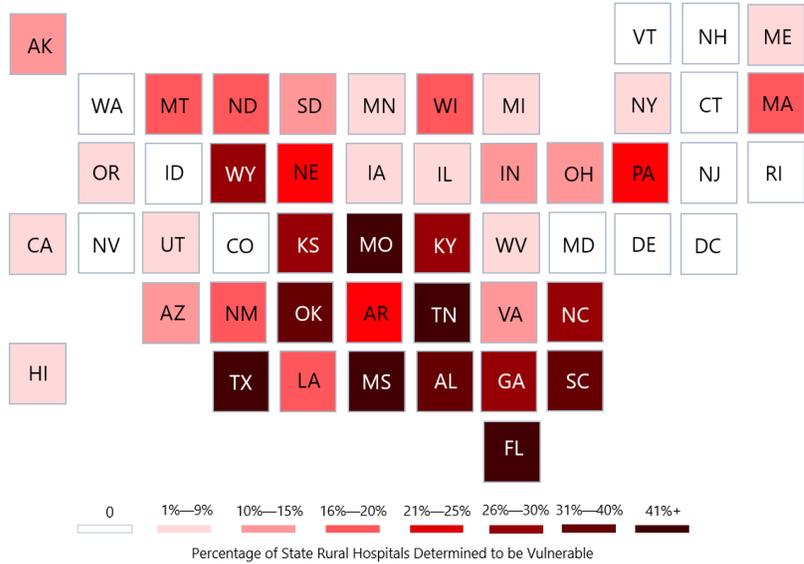
According to our analysis, 63 percent of the nation’s rural hospitals (Critical Access Hospitals and Rural and Community Hospitals) are without any ICU beds. In 20 states, the percentage of rural hospitals without ICU beds is at least 66 percent. Our national ICU bed heat map (**Figure 1**) reveals that states with the highest percentages are predominantly in the Upper Midwest, Upper Great Plains and the Pacific Northwest.

**Figure 1** – Percentage of a state’s rural hospitals *without* ICU beds.



While more than 90 percent of the rural facilities in North Dakota lack ICU beds, states with a high concentration of rural hospitals such as Iowa, Kansas, Nebraska and Texas all fall in the next two bands of the heat map (e.g., 66 percent to 80 percent and 81 percent to 90 percent).

**Figure 2 – States with the highest percentage of rural hospitals identified as vulnerable.**



### Pressure Point – Hospital Vulnerability

When we explored rural hospital vulnerability, regions such as the Pacific Northwest and Upper Great Plains, for example, had relatively few hospitals determined to be vulnerable (**Figure 2**). In fact, Colorado and Washington do not have any vulnerable hospitals. Vulnerability is at its highest in the Lower Great Plains and Southeast: two regions where the hospital closure crisis has been particularly severe. Among the nearly 130 rural hospitals that have closed since 2010, more than 50 of those closures occurred in those two regions<sup>9</sup>.

While there is some disparity between the states and/or regions at the high end of our heat map spectrum, our analysis reveals a number of states with a high percentage of rural hospitals identified as vulnerable *and* a high percentage of rural hospitals lacking ICU beds (**Table 1**). This suggests that ICU beds in states such as Florida, Oklahoma and Texas, for example, are perhaps at a greater risk for decreasing – or disappearing all together.

**Table 1**

State	Number of Rural Hospitals	Percentage of Rural Hospitals Vulnerable	Percentage of Rural Hospitals without ICU Beds
Texas	152	51%	68%
Oklahoma	76	37%	71%
Mississippi	64	42%	75%
Tennessee	48	52%	53%
Florida	23	43%	52%

## Pressure Point – Loss of Outpatient Revenue

Outpatient services are the core business for rural hospitals. As noted earlier, these services have been suspended in the wake of COVID-19. A detailed analysis of rural hospital cost report data indicates that for rural hospitals (e.g., 1,300 Critical Access Hospitals and 900 Rural and Community Hospitals), the national median for outpatient revenue, as a percentage of total revenue, is 76 percent (**Figure 3**). Among the cohort of 1,300 Critical Access Hospitals, the median is 79 percent and for the Rural and Community Hospital cohort the median is 71 percent. As we consider the financial impact of COVID-19, remember that nearly 50 percent of all rural hospitals are operating in the red. The loss of 50 to 75 percent of revenue will accelerate the downward spiral for many facilities without intervention from the federal government.

*"We will struggle to maintain financial viability with services lost in response to recommendations."*

- Rural Hospital in the Northwest (via iVantage Health Analytics' KnowledgeWeb)

In the all rural cohort, only three states – Alaska, Delaware and Hawaii – have a median percentage below 60, while we see states in the Midwest (i.e., Illinois, Iowa and Michigan) with percentages in the low- to mid-80s. A total of 12 other states fall into the range of 76 percent to 80 percent of total revenues tied to outpatient services, and another 20 states occupy the 70 percent to 75 percent band. While we can chart variation from state to state, and even in some cases region to region, it is important to keep in mind that nearly the entire breadth of the heat map scale is *above* 60 percent.

**Figure 3** – Percentage of revenue associated with outpatient service lines.

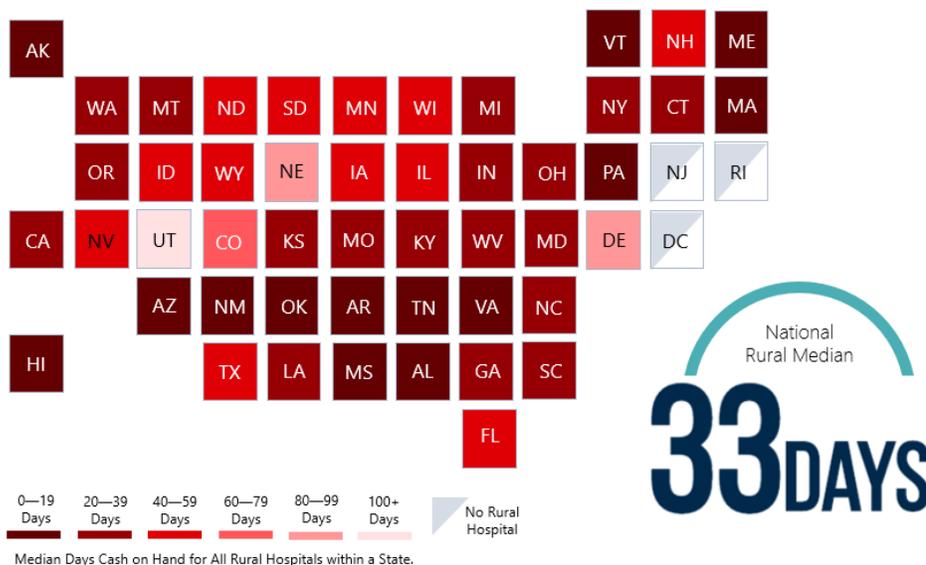


## Pressure Point – Days Cash on Hand

To better understand the potential financial ramifications around COVID-19, we included days cash on hand in our updated analysis. Given the financial impact of losing outpatient revenue and pre-existing instability across the rural health safety net, this metric provides an additional lens into the financial viability of rural hospitals.

Nationally, the all-rural median is 33 days (**Figure 4**). Although there are a few instances of state rural medians in excess of 80 days (i.e., Delaware, Nebraska and Utah), the majority of states (32) are sub 39 days with 14 states in the lowest band of zero to 19 days. As of April 3, 2020, the federal guidelines regarding social distancing will be in place until at least April 30, which increases the likelihood that we will see rural hospitals run out of cash prior to a reversion of social behavior. In the Critical Access Hospital cohort, the national median is 42 days, but for the Rural and Community Hospital cohort, the national median is considerably lower at 21 days.

**Figure 4** – Median days cash on hand for all rural hospitals in each state.



## Shaping What Comes Next

COVID-19 is adding a new dimension to the existing national conversation about the long-term viability of rural hospitals. These facilities face the same challenges commonplace in news reports about hospitals in metropolitan areas – shortage of supplies and equipment, rapidly changing guidelines and information, and providing frontline staff with the knowledge required to adequately treat and care for patients. But rural hospitals have the added challenge of confronting this pandemic at a time when more than 450 facilities are vulnerable to closure.

The [CARES Act](#), which was signed into law by the President on March 27, 2020, includes a number of provisions aimed at easing the impact of COVID-19 on rural hospitals. Key sections for rural providers include:

- **Section 3719** expands, for the duration of the COVID-19 national emergency period, an existing Medicare accelerated payment program. Qualified facilities would be able to request up to a six-month advanced lump sum or periodic payment. Hospitals can elect to receive up to 100 percent of the prior period payments, and Critical Access Hospitals can receive up to 125 percent. Additionally, a qualifying hospital would not be required to start paying down the loan for four months and would also have at least 12 months to complete repayment without a requirement to pay interest.
- **Section 3709** temporarily lifts the Medicare sequester, which reduces payments to providers by 2 percent, starting May 1 through December 31, 2020.
- **Section 3710** increases the payment that would otherwise be made to a hospital for treating a patient admitted with COVID-19 by 20 percent. This add-on payment would be available through the duration of the COVID-19 emergency period.
- **Section 3212** reauthorizes HRSA grant programs that promote the use of telehealth technologies for health care delivery, education and health information services.
- **Section 3213** reauthorizes HRSA grant programs to strengthen rural community health by focusing on quality improvement, increasing health care access, coordination of care, and integration of services. The CARES Act also removes the requirement from HR 6074 that a doctor had to have treated a patient within the last three years to use expanded telehealth under Medicare (this includes the Rural Hospital Flexibility Grant (Flex Grant) and the Small Hospital Improvement Program (SHIP Grant)).
- **Section 3831** extends funding for Community Health Centers, the National Health Service Corps, and Teaching Health Centers that Operate GME Programs until November 20, 2020.
- **Section 3211** provides \$1.32 billion in supplemental funding to community health centers for testing and treating patients for COVID-19.

The CARES Act is an important step in easing the pressure the pandemic is placing upon rural hospitals as are other programs such as the [Small Business Paycheck Protection Program](#) which provides independent non-profit rural hospitals with fewer than 500 employees the opportunity to apply for \$10 million in emergency funding. As part of this program, the loans can be forgiven if at least 75 percent of the funds are used for payroll costs, including retaining or quickly rehiring employees and maintaining salary levels. That said, an ongoing dialogue (e.g. the [Immediate Relief for Rural Facilities and Providers Act of 2020](#), which is also known as the Bennett-Barrasso Act and the [Rural Hospital Closure Relief Act of 2019](#) which allows vulnerable hospitals to convert to Critical Access status) and advocacy efforts suggest that additional government intervention may be required in the coming

weeks and months. The National Rural Health Association, for example, believes the \$100 billion provider grant program in the CARES Act is weighted too heavily in favor of larger facilities and that 20 percent should be set aside for rural hospitals. NRHA also worries that rural hospitals will be hesitant to take advantage of accelerated Medicare payments as they are considered loans and will have to be repaid to CMS, and that one third of rural hospitals may not be able to access the Small Business Paycheck Protection Program.

This expanded analysis further underscores the fragility of the rural health safety net and can help inform stakeholders, advocates of rural healthcare and leaders in Washington as they work to develop new strategies for helping rural hospitals and communities recover from the pandemic.

## Research Citations

[1, 9] Cecil G. Sheps Center for Health Services Research, University of North Carolina, [2] *Scientific American*, Map Reveals Hidden U.S. Hotspots of Coronavirus Infection, April 2, 2020, [3, 5] The Chartis Center for Rural Health, [4] Federal Office of Rural Health Policy, [6] The Chartis Group, 2020, [7] National Rural Health Association, [8, 9] Healthcare Provider Cost Report Information System (HCRIS).

## Analysis Methodology

This research update is based on analysis of Healthcare Provider Cost Report Information System (HCRIS) data. The study population is limited to currently operating Critical Access Hospitals and Rural and Community Hospitals. Facilities affiliated with a system are excluded from analysis of days cash on hand due to unique inconsistencies in the reporting of this measure. The presence of an ICU within a facility assumes a minimum of three reported ICU beds consistent with the national rural average<sup>9</sup>.

## Additional Resources

In addition to this written update, The Chartis Center for Rural Health has developed a series of heat maps for each of the categories highlighted in this report. Additionally, the complete rural hospital vulnerability study is available along with an infographic and trended heat maps. These resources are available at <https://www.ivantageindex.com/research-education2/>.

## Research Team



### **Michael Topchik, MA, National Leader, The Chartis Center for Rural Health**

Michael has led the development and program operations of more than 20 rural health network initiatives around the country including the development and management of the OH CAH Network since 2009. He is a frequent presenter at state, regional and national rural health events and brings a wealth of experience utilizing big data for hospital benchmarking and performance improvement. Michael offers his expertise and knowledge as a key resource on matters impacting rural healthcare for media outlets such as *CNN*, *The Washington Post*, *Forbes*, *Reuters*, *The Boston Globe* and *FiveThirtyEight*.



### **Roger Ray, M.D., Physician Consulting Director, The Chartis Group**

Dr. Roger Ray is a Physician Consulting Director with The Chartis Group. He has over 30 years of experience in healthcare, having served in a variety of leadership positions at major medical centers and health systems throughout the eastern United States.

Most recently, Dr. Ray served as Executive Vice President/Chief Physician Executive at Atrium Health, where he was responsible for operational oversight of all system physicians including a 3,000+ member medical group. His responsibilities also included oversight of numerous system functions (Population Health, Carolinas Physician Alliance, Atrium Health Virtual Care, Atrium Health Poison Control Center, System Medical Staff Services, Quality and Safety Improvement, Infection Prevention and Accreditation Services); strategic and operational oversight of 11,000 system employees and a greater than \$2 billion budget; and oversight of all graduate and undergraduate medical education and research functions, including the Charlotte Division of the UNC School of Medicine.

Prior to joining Atrium Health, Dr. Ray served as the Executive Vice President/Chief Medical Officer of Carolinas HealthCare System, a \$10 billion integrated delivery system. He has also served in various capacities at BayCare Health System, Morton Plant Mease Health Care and AnMed Health System. He practiced clinical neurology for 15 years.

Dr. Ray received his Doctor of Medicine from West Virginia University; his Master of Business Administration with a major in healthcare from the University of Colorado; and his Bachelor of Science in chemistry from the University of Virginia.



**Melanie Pinette, MEM, Data Analysis, The Chartis Center for Rural Health**

Melanie possesses extensive experience analyzing healthcare data. She works closely with CCRH’s state networks, providing insight into performance improvement opportunities. Prior to joining CCRH, Melanie served as a Manager of Business Development for GNS Healthcare’s managed care team and led several program analyses and research efforts related to population health at Onpoint Health Data. She also worked with state health entities to implement and evaluate ACO networks designed to improve patient outcomes and lower total cost of care.



**Troy Brown, Client Services Manager, The Chartis Center for Rural Health**

Troy spent 10 years at Charles A. Dean Memorial Hospital, a Critical Access Hospital in Maine, serving in a variety of roles, including Director of Business Services, Registration, Patient Accounts, HIM, IT, Materials Management, Performance Improvement and Community Relations and Development. Troy has built upon this foundation at The Chartis Center for Rural Health, facilitating a variety of strategic performance improvement-related projects with independent rural hospitals, system-affiliated facilities and statewide networks of rural and Critical Access Hospitals nationally.



**Billy Balfour, Director, Communications, The Chartis Center for Rural Health**

Billy leads The Chartis Center for Rural Health’s marketing initiatives. In his role, he works closely with state networks to promote and coordinate various network initiatives designed to educate and help participating hospitals optimize the use of INDEX-related benchmarks. Billy oversees development and marketing of CCRH’s thought leadership activities, including executive-level presentations at national rural health conferences and ongoing research into the rural health safety net.



**Hayleigh Kein, Analyst, The Chartis Center for Rural Health**

In her role, Hayleigh works closely with The Chartis Center for Rural Health’s clients to better understand and assess performance metrics, including the Hospital Strength INDEX. She’s actively involved in the development of market and population health assessments for The Chartis Center for Rural Health’s state network clients. These assessment provide hospital leadership teams with a new lens into dynamic factors impacting market volumes, as well as the quality and the delivery of care.