

Rural Health Research Brief

JANUARY 2021



Oklahoma Rural Hospital Closures by the Numbers

INTRODUCTION

The year 2020 brought many challenges and events, including the COVID-19 pandemic, extreme weather, and a presidential election. As we pivot to 2021, health care policy, and, in particular, rural health will remain a topic at the forefront for policymakers and the general public as communities continue to respond to the pandemic and hospitals struggle with workforce and supplies shortages, revenue loss, and further disruption of services to traditional service lines. The topic of rural hospital closures and the possibility of additional closures in the coming years raises concerns. In 2019, Navigant Consulting, Inc. identified 17 hospitals in Oklahoma as “at-risk” of closure.² Also, in 2019, researchers at the Cecil G. Sheps Center Health Services Research (Sheps Center) at the University of North Carolina at Chapel Hill found Oklahoma to have 16 rural hospitals at high risk of financial distress and an additional 19 at medium-high risk.³ In both analyses, at-risk hospitals are not named; rather, state totals were provided. Health policymakers must consider the various complexities, perspectives, and community alternatives available as the current and future impact of rural hospital closure is being contemplated. Rural hospital closures do not have equivalent effects on access to care or the local economy. The overall quantity of rural hospital closures (173 in the United States between 2005 and August 2020) is commonly the most striking data point shared by media and advocacy organizations. This brief examines Oklahoma rural hospital closure data to determine how access to care may be affected by rural hospital closures.

Numbers to Know

9

Hospitals in Oklahoma closed between 2005 and 2020¹

23.3

Average distance in miles between closed hospitals in Oklahoma and the nearest open hospital

17

Hospitals in Oklahoma identified as “at-risk” of closure²

35

Hospitals in Oklahoma identified as “high risk” or “medium-high” risk of financial distress³



ANALYSIS OF DISTANCE TO NEXT NEAREST HOSPITAL

To better understand the impact of hospital closure in rural Oklahoma, we analyzed the potential travel burden placed on patients as they are forced to access more distant facilities. Similar studies have focused on hospital closure at national and regional levels.^{4,5} Missing from these analyses were comparisons among individual states. Our analysis fills this void by comparing the distances between closed and open hospitals in Oklahoma with others in the nation. The Sheps Center maintains a comprehensive and widely cited database of hospital closures dating to 2005.¹ A “closed” hospital is one that has stopped providing inpatient services as defined by the US Department of Health and Human Services Office of the Inspector General. Our analysis encompassed the 173 rural hospitals that closed prior to August 30, 2020. Nine of those hospitals were in Oklahoma (Figure 1 & Table 1).[†] The Health Resources and Services Administration (HRSA) point-of-service datafile recorded the locations of open hospitals. This data file contained more than 4,600 hospitals. Given the rapid pace of rural hospital closures, the HRSA datafile inadvertently recorded some closed rural hospitals as being open. We removed any of the closed rural hospitals from the HRSA datafile before proceeding with the analysis. Tribal, Indian Health Service, Veteran’s Administration, specialty, or other hospitals that did not offer standard emergency room or inpatient services were also excluded. Using ArcGIS Pro developed by ESRI, we calculated the driving distance and driving time between the closed hospitals and the nearest open hospital using the default parameters of the network analysis routine.

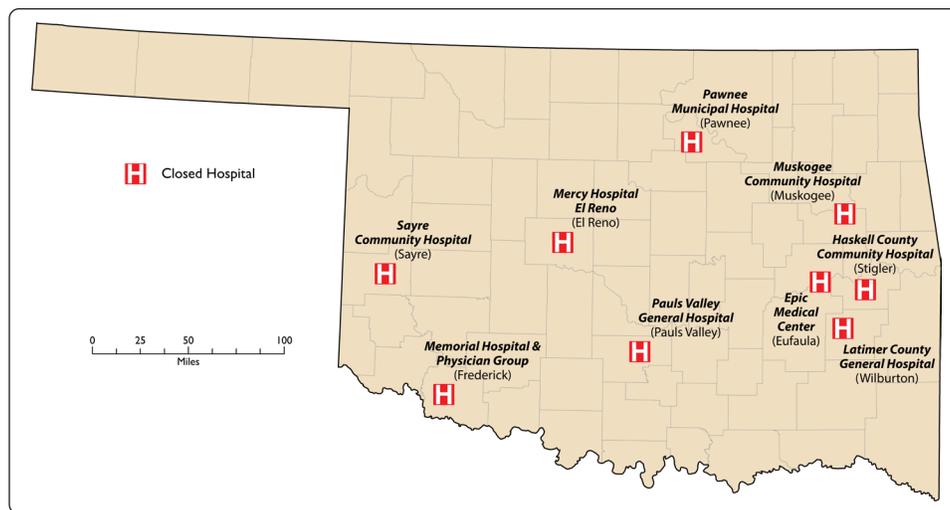


Figure 1. Nine hospitals in Oklahoma closed between 2005 and August 2020.

Hospital	County	MSA	Medicare Payment	Closure Year	Beds	Dist. (miles)
Sayre Community Hospital	Beckham	No	PPS	2018	22	17
Mercy Hospital El Reno	Canadian	Yes	PPS	2019	48	15
Pauls Valley General Hospital	Garvin	No	SCH	2018	64	24
Haskell County Community Hospital	Haskell	No	CAH	2019	25	38
Latimer County Hospital	Latimer	No	MDH	2018	33	31
Epic Medical Center	McIntosh	No	MDH	2016	33	29
Muskogee Community Hospital	Muskogee	No	PPS	2012	45	5
Pawnee Municipal Hospital	Pawnee	Yes	PPS	2007	25	20
Memorial Hospital & Physicians Group	Tillman	No	SCH	2016	37	31

Notes: MSA = Metropolitan Statistical Area; Prospective Payment System (PPS), Sole Community Hospital (SCH), Medicare Dependent Hospital (MDH), Critical Access Hospital (CAH). Dist (miles) = distance in miles to nearest open facility.

Table 1. Select characteristics of closed hospitals in Oklahoma.

[†] Our analysis included rural hospital closures through August 2020. Since that time, Haskell County Community Hospital, now Haskell Regional Hospital, reopened their inpatient and swing bed services in November 2020.

RESULTS

Of the 173 closed hospitals, the average distance to the next nearest open facility is 17.9 miles, and the median distance was 17.2 miles (Figure 2). A similar analysis conducted in 2017 measured a mean distance of 12.5 miles between closed rural hospitals and the next closed hospital.⁴ While the reported mean distance was greater in the current analysis, the aforementioned study included 48 fewer hospitals and excluded two outliers. Over 84% of the closed facilities were within 25 miles of an open hospital. This is similar to existing research that showed a clustering of closures within 25 miles of an existing facility.⁶ For the cohort of closed hospitals within 25 miles of an open facility, we measured a mean distance of 14.7 miles. For some perspective, the median distance traveled by many rural Americans to the nearest Walmart is 14.3 miles.⁷ Only 14 of the 173 closed rural hospitals, or 8%, were 30 miles or more from an open hospital, and 10 of these closed facilities were located in areas of high (17% or greater) or persistent poverty.⁸ Only 4 hospital closures had a next nearest hospital greater than 35 miles, which is a mileage standard for various hospital provider-based reimbursement programs.⁹ When examining the next nearest facility, roughly one-third (33.5%) of the next closest facilities were critical access hospitals.

For hospitals in Oklahoma, the mean distance (23.3 miles) between closed facilities and the next nearest hospital is greater than nearly 80% of other reported closures over the past fifteen years. The shortest distance is in Muskogee, Oklahoma where another facility is located 5 miles from the closure site. The longest distance (38 miles) is between the closed hospital in Stigler, Oklahoma to the next closest facility in Sallisaw, Oklahoma. Four closed hospitals in Oklahoma had distance of more than 25 miles to the next closest facility.

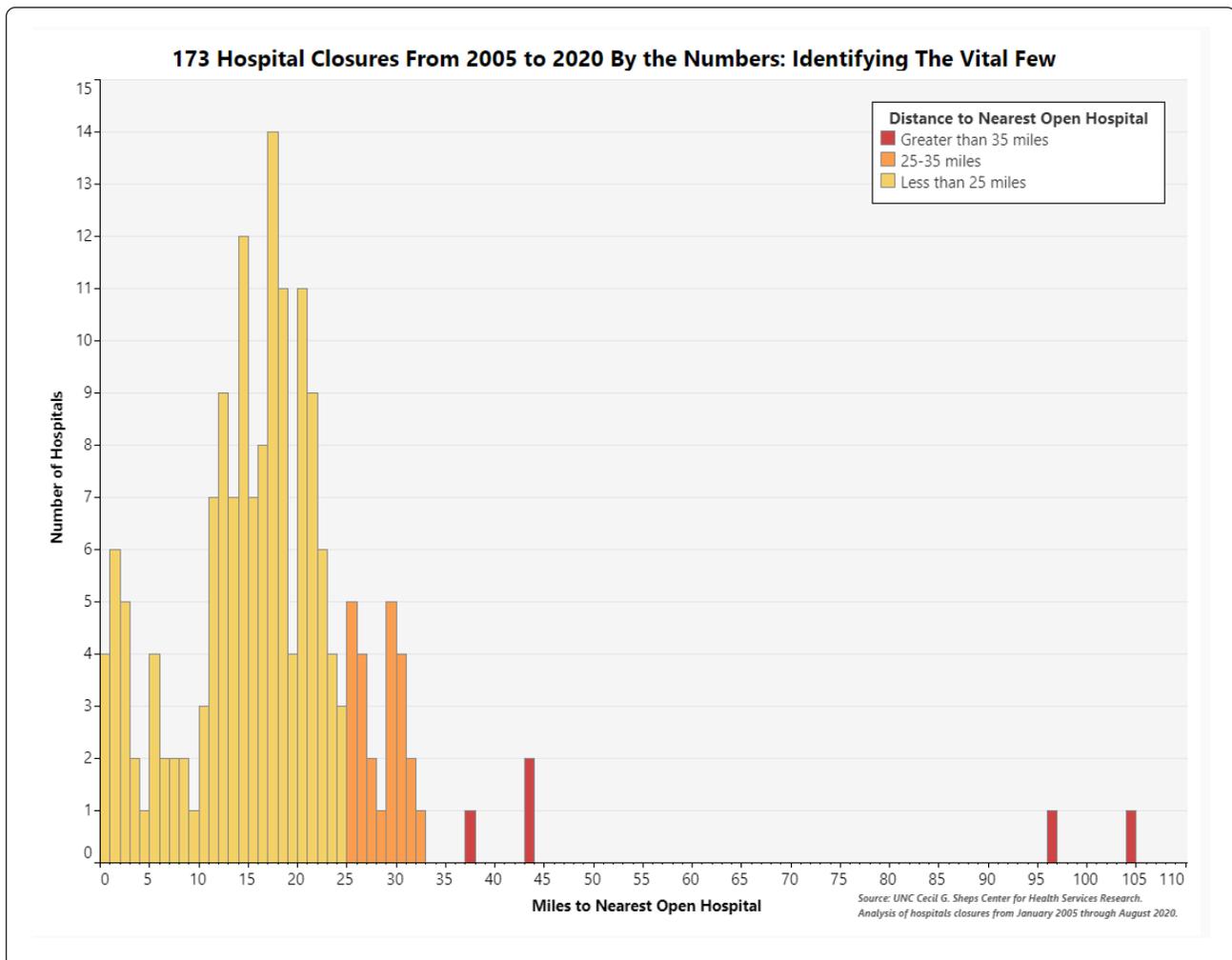


Figure 2. Frequency distribution of the distance between all 173 closed hospitals and the next nearest hospital.

When examining select descriptive variables for the counties that experienced a hospital closure, the impacts are much greater (Table 2). Eight of the nine Oklahoma counties to experience a hospital closure have a Medicaid enrolled population that is greater than the state rate of 25.6%. Two counties have Medicaid enrollees that account for at least 35% of their population.¹⁰ Similar trends exist for Medicare enrollees. Seven of the nine closure counties have a greater Medicare enrolled population (Parts A, B and Advantage) than the state share of 18.3%.¹¹ In terms of uninsured persons by county, again seven counties have a share greater than the state rate of 14.2%.¹² Three counties have a share greater than 18%. In terms of poverty, six counties have a higher rate than the state rate of 16%.¹³ Three counties have a poverty rate of greater than 20%, and one county is categorized as a persistent poverty county, a county whose poverty rate is 20% or greater.

Hospital	County	% Medicaid	% Medicare	% Poverty	% Unins.	Health Factors Rank	Health Outcomes Rank	% Pop. change	% Unemp.
Sayre Community Hospital	Beckham	28%	17%	14%	15%	25	44	-1%	3.2%
Mercy Hospital El Reno	Canadian	15%	15%	8%	10%	1	3	28%	2.9%
Pauls Valley General Hospital	Garvin	30%	22%	16%	16%	50	68	1%	3.2%
Haskell County Community Hospital	Haskell	34%	25%	20%	19%	63	55	-1%	5.3%
Latimer County Hospital	Latimer	38%	24%	19%	19%	55	41	-10%	6.3%
Epic Medical Center	McIntosh	31%	30%	21%	18%	65	74	-3%	5.8%
Muskogee Community Hospital	Muskogee	35%	22%	21%	16%	61	63	-4%	3.9%
Pawnee Municipal Hospital	Pawnee	29%	23%	15%	12%	32	52	-1%	3.9%
Memorial Hospital & Physicians Group	Tillman	32%	23%	22%	17%	52	31	-9%	3.7%
Oklahoma (state rate)		26%	18%	16%	14%			6%	3.3%

Notes: % Unins. = Population <65 years of age without health insurance; % Unemp. = population that is unemployed¹⁵; % Pop. change = Percent change in total population from 2010 to 2019^{16,17}; Health Factors and Health Outcomes Ranks range from 1-77 with 1 as the most favorable.

Table 2. Select health and demographic characteristics of counties in Oklahoma with closed hospitals.

HEALTH EQUITY IMPACT

These findings suggest rural hospital closures in Oklahoma affect communities and emergency access much differently than closures in other states. When considering the ten longest distances traveled to the next nearest hospital as a result of all closures in the country since 2005, four occurred in rural Oklahoma. Residents of those four rural Oklahoma communities now travel on average 32.1 miles to the next nearest hospital offering emergency care services.

Currently, 31 open rural hospitals in Oklahoma are 25 miles or more from another facility. Fourteen of those hospitals are 30 or more miles from another facility. In the event of closure, seven communities would then have a nearest facility greater than 35 miles. The impact of an additional closure could have an even greater adverse effect on rural Oklahomans than most of the other reported closures have had across the country, to date.

In addition to distance, it is important to understand the current health disparities of the rural Oklahoma closures. The 2020 County Health Rankings provide the most straight-forward analysis and status of a county's health.¹⁴ In terms of rankings of health factors, a measure that includes health behaviors, clinical care, social and economic factors, and physical environment measures, six of the counties who experienced a closure rank in the bottom half of the state. Further, the same is true is evident when examining the health outcomes rankings, a measure of longevity and quality of life variables with seven counties ranking in the bottom half of the state. With the continued absence of a hospital, and possible diminished access to care, this can further exacerbate the health outcomes of these counties.

SUMMARY

Oklahoma is home to a significant number of rural hospital closures, and rural hospital closure impacts our state differently than many other states. These implications are much more dire when examining the mileage to the next nearest hospital for rural Oklahomans. Further, when examining health equity impacts, future policy should consider incentivizing transition to sustainable emergency models of care in high poverty areas where traditional acute care inpatient facilities remain at-risk of closure and next nearest facilities for those populations exceed 25 or more miles.

CONCLUSION

The Oklahoma State University Center for Rural Health recommends future rural health care policy and reporting be **less influenced** by the **total quantity** of closures, and alternatively driven by the *totality of the cost and quality of hospitals closing* and the equity of those closures, particularly the *resultant impact of closure to access the next nearest emergency room*, the latter of which is oft-cited as the most critical community concern of potential hospital closure. Such pragmatic lens may help further the Institute for Health Improvement's Triple Aim of better care, better population health outcomes, and improving cost per capita of health care, while also leading to a wider-spread, robust dialogue of creating more sustainable rural population health ecosystems. Rural medical communities can also spark new health innovation and integration, and increased investments in community building activities and other rural development can further strengthen rural social economies and population health.

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ABOUT

OSU Center for Rural Health at the Oklahoma State University Center for Health Sciences houses the Oklahoma State Office of Rural Health, Oklahoma Rural Health Policy and Research Center, OSU Area Health Education Center (AHEC), and OSU TeleHealth. The Center is actively participating in Oklahoma State University Tier One research that aims to solve rural Oklahoma's most pressing challenges through timely, impactful, community-participative and action-oriented research. The Center is a member of the Institute of Healthcare Improvement (IHI) Leadership Alliance, and is engaged in grant activities with the Health Resources and Service Administration (HRSA), the National Institute on Minority Health and Health Disparities (NIHMHD), and other health equity research efforts.

MISSION

OSU Center for Rural Health's mission is to enhance the quality of life for rural and underserved Oklahoma communities through the development of the medical and public health workforce, research, policy, and community engagement.

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