Center for RURAL Pennsylvania
A LEGISLATIVE AGENCY OF THE PENNSYLVANIA GENERAL ASSEMBLY

Executive Summary

Rural Hospitals in Pennsylvania in the Context of Healthcare Market Consolidations

By: Yunfeng Shi, Ph.D., Amy Yeung, Tess Wilson, and Lisa Davis, The Pennsylvania State University

Hospitals in rural areas are hubs of healthcare delivery for rural residents and families. Since 2005, 193 rural hospitals in the U.S. have either completely or partially closed (Cecil G. Sheps Center, 2024). Among those still operating, many face serious financial challenges and resource constraints (Carroll et al., 2023). During the same period, there has also been an increasing trend of healthcare market consolidations, with a substantial impact on rural hospitals. These consolidations can take various forms such as mergers between hospitals; acquisitions of physician practices by hospitals; acquisitions of hospitals, physician practices, and insurance companies by health systems; and increased (multi-hospital) health system affiliation by previously independent hospitals (Heeringa et al., 2020; Carroll et al., 2022). Between 2005 and 2016, 326 rural hospitals (11 percent of the rural hospitals) were part of mergers, with financial distress being one of the major contributing factors (Williams et al., 2020). As a result of hospital mergers and closures, rural communities often face reduced access to needed care and potentially decreased quality of care (Henke et al., 2021; Levins 2023).

The primary aim of this project is to provide an understanding of mergers and acquisitions of hospitals in rural Pennsylvania in recent years, as well as potential strategies to make these hospitals sustainable and health care accessible to the rural population. We focus on general acute care hospitals that are included in the annual hospital reports by the Pennsylvania Department of Health (DOH) from 2016 to 2023. Studying rural hospitals and market consolidation in Pennsylvania is particularly relevant because of the significant rural population in the state, as well as the hospital mergers, acquisitions, and closures that have happened over the past decade. In 2023, about 26 percent of the population in Pennsylvania (3.36 million people) lived in the 48 rural counties of the state, with 63 rural hospitals serving these areas.

Methods

This project employed a mixed-methods approach that combined qualitative and quantitative analyses. The qualitative component included six key informant interviews with hospital executives and rural health leaders, followed by virtual site visits with two rural hospitals representing different organizational models. These interviews explored the experiences of rural hospitals before and after ownership changes, the challenges they face, and potential policy responses. The quantitative analyses integrated four statewide data sources from 2016 through 2023, including the DOH, Pennsylvania Health Care Cost Containment Council (PHC4), Centers for Medicare and Medicaid Services (CMS) Care Compare, and Hospital Change of Ownership records. The analyses examined hospital utilization, service availability, financial performance, patient experience, clinical quality, and ownership changes among rural and urban hospitals.

This research was sponsored by a grant from the Center for Rural Pennsylvania, a legislative agency of the Pennsylvania General Assembly. Information in this report does not necessarily reflect the views of individual board members or the Center for Rural Pennsylvania. For more information, contact the Center for Rural Pennsylvania, 625 Forster St., Room 902, Harrisburg, PA 17120, (717) 787-9555, www.rural.pa.gov.

Logistic regression models were used to examine predictors of ownership changes, and generalized difference-in-differences models evaluated changes in hospital performance following mergers, acquisitions, and health system affiliations.

Results

Structural Challenges

Rural hospitals consistently operated with fewer physicians, fewer registered nurses, lower patient volumes, lower occupancy rates, and lower overall utilization than urban hospitals. Declining and aging populations further contribute to workforce shortages and reduced demand for inpatient services, creating ongoing challenges for financial sustainability.

Limited Access to Specialized Hospital Services

Compared with urban hospitals, rural hospitals offered significantly fewer specialized service lines across most measures examined. The most pronounced gap involved neonatal intensive care services, with only about one in five rural hospitals providing Level II or higher neonatal intensive care compared with approximately one-half of urban hospitals. These findings reflect broader workforce and resource limitations affecting rural hospitals.

Differing Pattern of Quality Outcomes

Across heart failure, chronic obstructive pulmonary disease, acute kidney failure, and stroke, rural hospitals consistently exhibited higher mortality rates but lower 30-day readmission rates than urban hospitals. These findings suggest that quality measures commonly used to evaluate hospitals may warrant additional examination within rural settings, where patient populations, access challenges, and patterns of care differ substantially from urban hospitals.

Highly Contextual Ownership Changes

The qualitative findings demonstrated that mergers, acquisitions, and health system affiliations occurred under diverse circumstances and were often initiated proactively by hospitals seeking long-term stability rather than immediate financial rescue. Participants described important benefits of health system affiliation, including access to financial resources, specialized services, and administrative support, while also expressing concerns about reduced local decision-making and community engagement following some ownership changes. The quantitative analyses did not identify statistically significant predictors of ownership changes or consistent improvements in quality or financial outcomes following consolidation. Together, these findings suggest that the success of ownership changes depends less on consolidation itself than on the planning, implementation, governance, and local relationships that accompany those transitions.

Pricing and Payment Data Limitations

The project identified important limitations in the availability and accessibility of hospital payment and pricing data needed to fully evaluate the effects of market consolidation. Improving statewide health data infrastructure would strengthen future research and provide policymakers with better evidence to evaluate hospital performance and long-term policy outcomes.

Policy Considerations

Preserve Access to Essential Rural Hospital Services

The findings suggest that maintaining access to essential health care services should remain a primary objective of rural health policy. Because many rural hospitals face persistent workforce shortages and limited patient volume, maintaining every service at every hospital may not be feasible. Instead, policymakers and hospital leaders should prioritize preserving those services that are most critical to the communities each hospital serves while strengthening regional care networks and referral relationships where appropriate.

Strengthen the Rural Health Care Workforce

Recruitment and retention of physicians, nurses, and other health professionals emerged consistently as one of the most significant challenges affecting rural hospitals. Continued

investment in workforce development, rural training partnerships, loan repayment programs, and technical assistance supporting Critical Access Hospital designation and related federal initiatives may improve the long-term sustainability of rural health care.

Support Strategic Health System Partnerships While Preserving Local Decision-Making
The findings indicate that health system partnerships can improve access to financial resources, specialized expertise, and administrative capacity, but successful affiliations depend heavily on governance, implementation, and continued responsiveness to local communities. Policies that support voluntary partnerships while preserving meaningful local leadership and accountability may better position rural hospitals to benefit from system-level resources without sacrificing community priorities.

Improve Access to Care Beyond Hospital Operations
Transportation barriers and long travel distances remain important obstacles to health care access in many rural communities. Coordinated transportation strategies that improve access to emergency and non-emergency care may also strengthen the long-term viability of rural hospitals by reducing barriers to care and supporting sustainable utilization of local health services.

Continue Evaluating Quality Measures in Rural Settings
The study found that rural hospitals consistently exhibited higher mortality rates but lower 30-day readmission rates than urban hospitals across the four clinical conditions examined. These findings suggest that additional research is warranted to better understand how commonly used hospital quality measures should be interpreted within rural settings and how they may be influenced by quantity of data available, differences in patient populations, access to care, and patterns of service delivery. The inclusion of additional factors, such as patient distance to hospitals, would provide a more comprehensive understanding of the range of factors influencing rural patient outcomes.

Strengthen Pennsylvania's Rural Health Data Infrastructure
Improving the accessibility, consistency, and standardization of statewide hospital data would strengthen future research and evidence-based policymaking. Enhanced collaboration among hospitals, state agencies, and researchers could improve the ability to evaluate hospital performance, monitor the long-term effects of ownership changes, and provide policymakers with more robust information to support decisions affecting rural health care.