One Hospital–Five Doors: A Model for Critical Access Hospital Sustainability

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ABSTRACT

Background: We wanted to assess whether a regional approach to bed management and staffing could improve financial sustainability without reducing services in rural communities.

Methods: Regional approaches to patient placement, hospital throughput, and staffing were coupled with enhanced services at 1 hub hospital and 4 critical access hospitals.

Results: We improved the use of patient beds in the 4 critical access hospitals, increased hub hospital capacity, and improved the health system's financial performance while maintaining or enhancing services at the critical access hospitals.

Discussion: Sustainability of critical access hospitals can be attained without a decrease in services for rural patients and communities. One way to achieve this result is to invest in and enhance care at the rural site.

INTRODUCTION

The rural United States population is about 60 million people,[1] making the sustainability of rural hospitals vital. However, from 2005 through 2019, at least 162 rural hospitals closed, and 700 more were at risk of closing.[1] In 2019, when 19 rural hospitals closed, at least 40% of all rural hospitals had negative operating margins.[2] By January 2022, nearly 900 rural hospitals (> 40% of all rural US hospitals) were at immediate or high risk of closure.[3] The primary reason for closure is an inability to remain profitable.[1]

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Historically, rural hospitals that affiliated with a larger health system decreased their risk of closure by 50%.[2] This affiliation may improve the financial performance of rural hospitals, but it also may decrease access to services for rural patients and contribute to worse health outcomes in rural communities, through either a reduction in service lines or a transition into an outpatient-only or skilled nursing facility.[4]

The disparities between rural and urban populations in access to health care, life expectancy, and mortality have been exacerbated by the decrease in rural hospital services and the loss of more than 100 rural hospitals since 2010.[4] Indeed, people living in rural communities have disproportionately adverse outcomes, including poorer health, greater disability, and higher age-adjusted mortality, and they face additional challenges accessing health care.[2] Hospital closure, which both is driven by and fuels the departure of rural clinicians, further erodes access.[5] In addition, the disparities in recruitment, training, and retention of hospital staff may require unique solutions for rural hospitals. For example, Smith et al[6] discuss how nurses in rural locations must put more effort into obtaining continuing education courses.

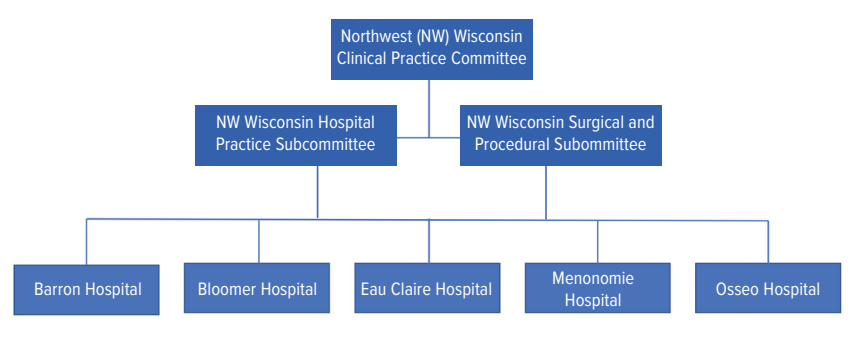
Our work sought to answer two questions: (1) what is the path to sustainability for rural hospitals that are already affiliated and still facing financial challenges; and (2) can sustainability be achieved without a major decrease in services at a critical access hospital (CAH).

METHODS

In 2019, our regional health system (Appendix) undertook an effort called "One Hospital–Five Doors" to improve use and

service at our hub hospital and 4 CAHs, with the intent to manage bed capacity at all 5 hospitals as if they were one. Our hub hospital has 185 staffed beds and an array of medical and surgical subspecialties, while our CAHs range in size from 16 to 25 staffed beds with a staff of primary care physicians and a limited number of local specialty services. Our regional health system includes one of the regions of a larger health system. Over the previous 5 years, the number of inpatients had increased at the hub hospital, while the inpatient census and the number of patients undergoing surgical and other procedures had decreased at the 4 CAHs, leading to variable financial performance.

Figure. Organizational Leadership for the 5 Hospitals in the Mayo Clinic Health System – Northwest Wisconsin Region



The regional Clinical Practice Committee provided direction and clarified the scope of the Hospital Practice and Surgical and Procedural subcommittees, giving them authority over all 5 hospitals (Figure) and their use of beds and surgical capacity. Each CAH also had a physician leader, a nurse leader, and an administrative leader who worked with CAH leaders and staff to assess and manage needed changes.

Improving the use of CAHs involved adopting the perspective that all 5 hospitals belonged to a coordinated system. The focus at the CAHs was to decrease the number of medical patients transferred to the hub hospital, increase the number of admissions from the hub hospital for swing beds (ie, beds for patients needing skilled nursing care), and decrease average length of stay in the hospital. Specific tactics to support the care of more patients at our CAHs included the following: (1) enhance the skill set of existing staff (including nurses) at the CAHs to retain and appropriately care for more medically complex patients who were clinically appropriate for the CAHs; (2) add staff with new skill sets to the CAHs by developing a regional staffing model that included hospitalists, hospital advanced practice providers, and ancillary staff (eg, respiratory therapists) to support complex patient care at CAHs (eg, with use of ventilators or left ventricular assist devices); (3) improve telemedicine support of local clinicians; and (4) enhance local physician specialty presence and outreach.

Efforts to improve use of the hub hospital focused on decreasing the average length of stay, enhancing appropriate patient placement within the hospital, decreasing patient wait times for transitions between different levels of care in the hospital, and decreasing the number of patients transferred to the hub hospital.

Regional hospital teams worked on new initiatives to improve use, including the creation of a Patient Flow Action Team and a CAH centralized referral center. The Patient Flow Action Team—a multidisciplinary team with representatives from all 5 hospitals—

Table. Annual Hospital Data for 2018 and 2019

Metric	Year 2018	2019	Difference
4 Critical Access Hospitals (CAH)			
Average daily census (medical and surgical patients)	171	187	9%
Average length of stay (medical and surgical patients)	155	132	–15%
Net operating income	NA	NA	1.6%
Net revenue	NA	NA	7.6%
Likelihood to recommend for 4 CAHs and 1 hub hospital			
Quarter 1, %	79.1	80.8	1.7
Quarter 2, %	81.1	80.2	–0.9
Quarter 3, %	78.4	81.2	2.8
Quarter 4, %	79.3	84.0	4.7

Abbreviations: NA, data not available for publication.

met daily to discuss barriers and opportunities for placing patients in the correct facility, including skilled nursing facilities, according to the patient's needs and level of care. After the Patient Flow Action Team was operational, a CAH centralized referral center was developed and launched to review referrals to all regional CAHs. This process replaced the need for each CAH to review each referral. Patient satisfaction, represented by likelihood to recommend, was intended to be a countermeasure as patients were placed in clinically appropriate locations, including CAHs with enhanced clinical capability.

We also worked to optimize use of surgical and procedural capabilities in the region to accommodate needed surgical growth in the hub hospital, enhance CAH service availability, and increase CAH financial sustainability. The initial focus was on ophthalmology and gastroenterology outpatient procedures. This work was planned before the COVID-19 pandemic and was successfully accelerated during the pandemic.

A cost report analysis also helped to identify opportunities to attain financial sustainability. CAH reimbursement permits allowable costs (ie, costs that are reasonable and related to patient care) to be reimbursed as part of the cost report. While ongoing cost report analysis is part of normal operations, an in-depth review helped highlight opportunities to improve CAH financial sustain-

ability. A practical example included the divestiture of on-campus skilled nursing facilities, which were successfully transferred to community partners.

RESULTS

When data were compared for 2018 and 2019, the average daily census at the CAHs increased by 9%, and the average length of stay decreased by 15%. The combined net revenue increased 7.6%, the net operating income for the 4 CAHs increased by 1.6%, and all CAHs had positive operating margins. Moreover, the hub hospital also had an increase in the average daily census, in surgical and procedural cases, and in net operating income. Responses in 3 of 4 quarters showed an improvement in likelihood to recommend (Table). Attempts to track these data in 2020 and 2021 were disrupted because of the COVID-19 pandemic.

DISCUSSION

Our experience suggests that (1) rural hospitals that continue to face financial challenges after affiliation can improve their financial performance by investing in and enhancing care at their site, and (2) sustainability can be achieved without a decrease in services at a CAH.

Further, when patients receive care close to home, patients and their communities benefit. Patients benefit when access to services is maintained, as health outcomes are improved.[4] Communities benefit when rural hospitals are financially stable, because community economic vitality is preserved. The estimated annual economic benefit for our 4 CAHs ranged from $36 million to $155 million.[7] Hospitals—often the primary employer in a rural community—provide direct and indirect economic benefits, and they attract other businesses, which create additional jobs.

In addition to patients and their communities benefiting, the health system benefited as resources at the 4 CAHs were used more effectively, which, in turn, provided more bed capacity at the hub hospital. The improved financial performance of the CAHs, without service reductions, provided sustainability. Opportunities may exist for other large prospective payment system hospitals and rural hospitals, including CAHs, to partner to decrease the risk of closure and to maintain patient services. As value-based reimbursement grows, the preservation of rural access and the associated improved outcomes will be an important cost-avoidance strategy. In addition, the ability to care for patients in a clinically appropriate, lower-cost setting may help systems use their resources more effectively.

Keys to success included clarifying the lines of authority and accountability and using regional governance structures more effectively in tandem with CAH site leaders and managers of the affected disciplines. Although other strategies, such as increasing swing bed use, decreasing the number of beds for long-term care, and increasing clinical volume are common financial improvement strategies at CAHs,[8] the importance of governance structures may be overlooked.

This work strengthened cultural and operational foundations and allowed us to successfully meet the pandemic challenges encountered in 2020 and 2021. Specifically, the coordination of patient placement and census management has helped us work with record numbers of inpatients at the hub hospital and an increase in the average daily census by as much as 30% at the CAHs.

Several cultural barriers and challenges encountered in this work needed to be addressed. Staff members were concerned about changes in clinical expectations and the increased acuity of patients as more medically complex patients were retained at or transferred to CAHs. This was addressed through upskilling of existing staff, bringing new staff resources on site, and expanding telemedicine support and specialty outreach. Staff members also were concerned about work schedules and the use of nursing and other support services across sites within the region. In response, nurse leaders developed a culture of "taking the care to the patient" to help address this. Further, even with a preexisting regional management structure, scope and governance clarifications were required, along with active engagement of affected disciplines by CAH site leaders. Some patients had concerns related to prior impressions that being sent to the hub hospital would mean that they would receive better care, even if their condition could be treated appropriately at a CAH, or that being transferred from the hub hospital to a CAH transitional care bed would mean that they would receive less advanced care. Continued conversations with patients about the appropriate placement helped preserve patient satisfaction.

Future Direction

As the work with "One Hospital–Five Doors" continues to be refined, a virtual home hospital option, called Advanced Care at Home, has been introduced. This virtual sixth door expands the ability to care for patients in the location most appropriate for their clinical need and has benefited from the groundwork already laid for regional governance, institutional culture, and clinical processes.

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Appendix: Available at www.wmjonline.org

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