

The Impacts of Brookings Health System on the Economy of Brookings County and Rural Health in South Dakota

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Weiwei Zhang, PhD
State Demographer
Associate Professor
Center for Rural Vitality and Community Well-Being
South Dakota State University

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Project Overview

Located in Brookings County, South Dakota, Brookings Health System (Brookings Health) is a vital economic and healthcare hub, providing crucial employment and access to care. This assessment provides a comprehensive evaluation of the profound impacts of Brookings Health on the county economy, and the accessibility and affordability of healthcare services to rural populations in the surrounding areas.

Rural community hospitals serve as foundational drivers of local economies. Their operations necessitate a substantial local workforce, encompassing a wide array of positions from clinical to administrative, representing a considerable labor expense. Indeed, numerous hospitals rank among the premier individual employers within their respective local and regional economies. The first part of the assessment evaluates the hospital's economic impact on Brookings County's economy by leveraging the 2020-2024 Quarterly Census of Employment and Wages through the Bureau of Labor Statistics and the hospital's 2020-2024 employment and payroll data. The analysis incorporates both direct and indirect effects, with the latter, also known as "multiplier" or "ripple" effects, being quantified through the application of economic multipliers that capture the broader influence of hospital operations and labor expenditures on the local and regional economic landscape.

The second part of the assessment evaluates the hospital's pivotal role in delivering accessible and affordable healthcare to local communities. Drawn from 2019-2024 data extracted from the Inpatient and Outpatient Data Bases compiled by the South Dakota Association of Healthcare Organizations (SDAHO), this study examines the hospital's role in rural healthcare service delivery, attributing the observed impacts to variations in travel expenses and service charges between Brookings Health and its competitors. Travel time and distance along rural road networks are calculated to determine the nearest competitor for equivalent services. This data is then used in a simulation analysis to quantify the financial burden on patients if they accessed these alternative facilities. Data on the average charge per visit for the period 2019-2024 is employed to evaluate variations in service pricing between Brookings Health and its closest competitors within each community across the hospital's service area. The study additionally explores the demographics, financial data, and residential areas of patients utilizing the hospital's medical services from 2019 to 2024.

Executive Summary

Brookings Health is a cornerstone of the county's economy, driving the local government operated education and healthcare sector by providing nearly 40 percent of its jobs and 60 percent of its payroll between 2020 and 2024. When considering the ripple effects, Brookings Health, directly and indirectly, supported approximately 1,000 local jobs annually over the past five years, representing an average of 5.0 percent of the county's total employment. Furthermore, Brookings Health's labor expenses surpassed \$56 million in 2024, contributing to a five-year total of approximately \$245 million. These labor expenses have consistently accounted for an average of 5.1 percent of the County's total labor costs.

Beyond its role as a major employer and income generator, Brookings Health anchors local communities by guaranteeing access to essential healthcare services. Within the service area encompassing 32 rural communities (defined by ZIP code areas), patients residing in 18 of these communities would have incurred an average additional travel burden of 20.6 miles and 22 minutes to access equivalent healthcare services had they not been available from Brookings Health. From 2019 to 2024, this localized access resulted in cumulative cost savings surpassing \$3 million for these communities.

Further examination of service charge variations for Obstetrics, Inpatient Care, General Surgery, Orthopedics, and Emergency services demonstrates that patients from 19 communities would have borne an extra \$11 million in total medical costs if they had received care from the nearest competitor instead of the hospital. Particularly crucial for Brookings (ZIP Code: 57006), the community saved an estimated \$7.5 million, including \$2.5 million in travel costs and \$5 million in service charge differences, averaging \$1.2 million annually.

Additionally, Inpatient Care patients at Brookings Health exhibited a demographic profile skewed towards older adults and Medicare beneficiaries, differing from the general Inpatient Care patient population. Obstetrics patients at the hospital were also more frequently self-pay (26 percent vs. 15 percent). It is recommended that future assessment efforts evaluate the hospital's impact on diverse patient populations in rural communities.

Part I: Economic Impact Analysis

From 2020 to 2024, Brookings Health consistently employed roughly between 480–550 individuals, encompassing both full-time and part-time positions (**Table 1**). Notably, the period between 2023 and 2024 saw a 6.6 percent increase in jobs and a 19.2 percent increase in gross payroll supported by Brookings Health. This trend aligns with the broader growth observed in Brookings County’s education and health services sector operated by local government, which has provided stable employment opportunities over the past five years, representing about 7.5 percent of the county’s total employment. Brookings Health directly accounts for nearly 40 percent of the county’s jobs within this crucial sector and nearly 60 percent of the sector’s total payroll.

The employment opportunities originating from Brookings Health thus can induce the creation of further jobs in related sectors (e.g., retail, hospitality) and stimulate the development of ancillary enterprises (e.g., medical suppliers, pharmacies). Considering the ripple effects (applying economic multipliers¹), the hospital’s employment has supported around 1,000 local jobs annually in the past five years, representing 4.6–5.4 percent of the county’s overall employment. In 2024, Brookings Health’s labor expenses surpassed \$56 million and reached approximately \$245 million over the last five years. The hospital’s labor costs have consistently made up an average of 5.1 percent of the County’s labor costs.

¹ The analysis uses the multipliers published by BEA RIMS-II (2012/2017) multipliers for hospitals (NAICS Code 622000) in South Dakota, released Oct. 2019. Multiplier for employment is 1.798 and multiple for earnings is 1.537 for South Dakota.

Table 1 Impacts of Brookings Health on Brookings County Economy, 2020-2024

Impact Category	Year	2020	2021	2022	2023	2024
Direct Impacts						
Number of Jobs (FT and PT)		523	490	479	519	553
Gross Payroll (1,000)		\$31,239	\$29,269	\$30,596	\$31,003	\$36,942
Total Impacts (Including Ripple Effects)						
Number of Jobs		940	881	861	933	994
Gross Payroll (1,000)		\$48,014	\$44,986	\$47,026	\$47,652	\$56,780
Impacts on Brookings County Economy						
Sectoral Impacts*						
Percent of Sectoral Employment		40.2	36.4	35.1	36.8	38.5
Percent of Sectoral Payroll		63.2	57.4	56.0	53.0	59.3
Overall Impacts						
Percent of County Employment		5.4	4.9	4.6	4.9	5.2
Percent of County Labor Expense		5.7	5.1	4.8	4.6	5.2

Source: The analysis using BEA RIMS-II (2012/2017) multipliers for hospital NAICS Code 622000 (the Hospitals subsector within the Health Care and Social Assistance sector), released Oct. 2019, applied to the BHS data for 2020-2024. Multiplier for employment is 1.798 and multiple for earnings is 1.537 for South Dakota. BHS employees and gross wage data are provided by BHS. Brookings County employees and total wages for all industries and the education and health service sector are reported by the 2020-2024 Quarterly Census of Employment and Wages through the Bureau of Labor Statistics. Data are not seasonally adjusted.

Part II: Healthcare Service Cost Implications for Communities

To understand the cost implications for patients in the surrounding communities, this assessment compares the financial burden of seeking healthcare services at Brookings Health versus an alternative provider. The core question guiding this analysis is: How much more or less would patients pay for equivalent services elsewhere? The cost difference is broken down into two main components: travel expenses and service charges. This financial burden is then quantified using simulation analysis. Part 2.1 analyzes the cost differences associated with travel. Part 2.2 analyzes the cost differences associated with service charges.

Data² for this analysis encompasses all patients from 32 ZIP Codes within the service area³ who received any of the following five services⁴: Obstetrics⁵, Inpatient Care, General Surgery, Orthopedics, and Emergency between 2019 and 2024. Patient data between 2019 and 2024 are pulled from the Inpatient and Outpatient Data Bases administered by the South Dakota Association of Healthcare Organizations (SDAHO). Individual records are aggregated by selected demographics, such as age, sex, and race/ethnicity. In addition, the payer information and patient residence ZIP Code are tabulated for a better understanding of the patient population. To perform the cost-saving analysis and service charge comparisons, the competitors⁶ in the nearby regions are identified by Brookings Health. Travel time and distance along rural road networks are calculated to determine the nearest competitor for equivalent services.

² Data is extracted from SDAHO's Inpatient and Outpatient Data Bases.

³ Based on ZIP Code areas, the service area of Brookings Health includes the following 32 ZIP Code areas: 56136, 56142, 56149, 56164, 57002, 57006, 57007, 57017, 57024, 57026, 57028, 57042, 57050, 57051, 57054, 57057, 57061, 57071, 57075, 57212, 57213, 57214, 57218, 57220, 57221, 57231, 57233, 57234, 57248, 57249, 57268, 57276.

⁴ The analysis focuses on these five services that are identified as the top frequently requested services at Brookings Health.

⁵ Obstetrics services include newborns.

⁶ They are the following healthcare service providers: Huron - Huron Regional Medical Center, Madison - Madison Regional Health System, Sioux Falls - Avera McKennan Hospital and University Health Center, Sioux Falls - Sanford USD Medical Center, and Watertown - Prairie Lakes Healthcare System. Marshall, MN's hospital was not included in the competitor analysis because we could not obtain data from the SDAHO database to conduct comparisons.

Part 2.1 Patient Population Demographics and Residence Communities

Brookings Health has experienced a 20 percent increase in patient volume for five selected services combined from 2019 to 2024 (**Table 2**), primarily driven by Orthopedics, Emergency, and Obstetrics. Emergency patients made up the majority, representing roughly three-quarters of the total. Orthopedics has experienced a particularly sharp increase in the last two years, with a significant spike in 2024, which alone accounted for over 30 percent of the total patient count over the past six years.

Figure 1 presents Brookings Health patients as the share of the general patient population by service type and year. Of all patients in the service area, the hospital handled more than half of all emergency care patients, while Obstetrics patients represented about 40 percent of the total. The proportion of Orthopedics patients at Brookings Health within the general patient population saw a significant rise, increasing from around 20 percent between 2019 and 2022 to 32 percent in 2023 and 42 percent in 2024. The average utilization of outpatient General Surgery and Emergency services in 2023 and 2024 also experienced an increase of roughly 10 percent compared to the average of previous years.

Table 2 presents key demographics of all patients receiving the services from Brookings Health over the past years by service type. Inpatient Care patients at Brookings Health demonstrated a demographic profile skewed towards the elderly and Medicare beneficiaries compared to the general Inpatient Care patient population. Approximately half (48 percent) of these patients were aged 75 and above, and Medicare covered the expenses for 68 percent of them. Obstetrics patients at Brookings Health were more likely to be on self-pay than the general patient population (26 percent vs 15 percent). **Appendix A** includes demographic comparisons between Brookings Health patients and the overall patient population in the defined service area.

Nearly two-thirds of Brookings Health patients who received any of the five medical services between 2019 and 2024 were from Brookings (ZIP Code 57006 and 57007), followed by Volga (57071), Arlington (57212), Aurora (57002), White (57276), and Elkton (57026). The hospital's five medical services extended to patients across the entire service area, including those residing in distant rural communities, as evidenced by the geographic distribution mapped by ZIP code (**Figure 2**). Total number of Brookings Health patients by ZIP Code and service type is included in **Appendix B**.

Table 2 Patient demographics by service type, 2019-2024

Number of Patients by Service Type and Year					
<i>Year</i>	<i>Obstetrics</i>	<i>Inpatient Care</i>	<i>General Surgery</i>	<i>Orthopedics</i>	<i>Emergency</i>
2019	536	745	454	373	6,936
2020	582	690	345	331	6,911
2021	676	709	447	242	7,625
2022	530	694	478	246	8,070
2023	634	767	556	577	8,134
2024	602	697	408	810	8,334
2019-2024, combined	3,560	4,302	2,688	2,579	46,010
Patient Demographics by Service Type, 2019-2024					
<i>Sex</i>	<i>*</i>				
Male	24%	52%	53%	44%	56%
Female	76%	48%	47%	56%	44%
<i>Age Group</i>					
<18	49%	2%	3%	4%	4%
18-44	51%	10%	35%	24%	24%
45-64	0%	18%	30%	35%	35%
65-74	---	22%	22%	22%	22%
75+	---	48%	11%	15%	15%
<i>Race/Ethnicity</i>					
White	83%	95%	94%	94%	94%
Black	2%	1%	1%	1%	1%
AI/AN	2%	1%	1%	1%	1%
Asian	2%	0%	1%	0%	0%
Other*	12%	2%	4%	4%	4%
Hispanic	6%	1%	2%	1%	1%
<i>Payment</i>					
Self Pay	26%	5%	4%	2%	2%
Medicaid	12%	4%	4%	5%	5%
Medicare	0%	68%	32%	35%	35%
Other Govt	2%	1%	2%	1%	1%
Blue Cross	38%	11%	39%	32%	32%
Commercial	22%	11%	19%	21%	21%
Workers' Comp	---	---	0%	4%	4%

Note: *Obstetrics services include newborns.

Figure 1. Share of the patients at Brookings Health by service type and year, 2019-2024

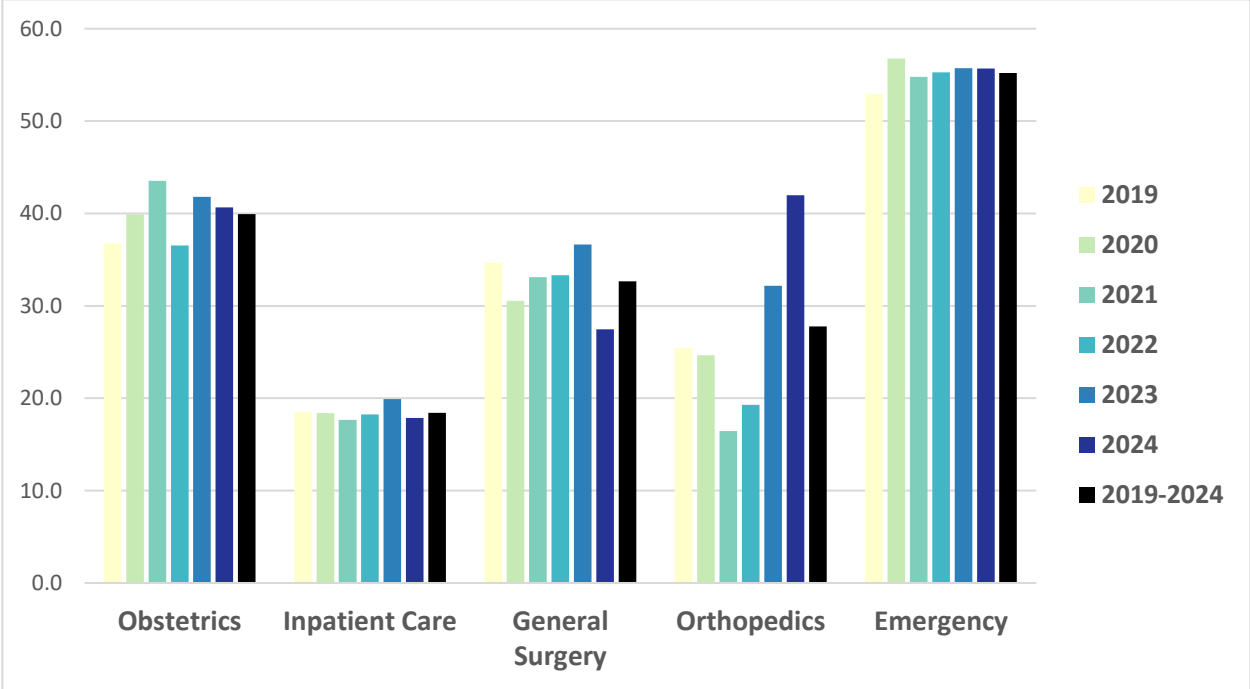
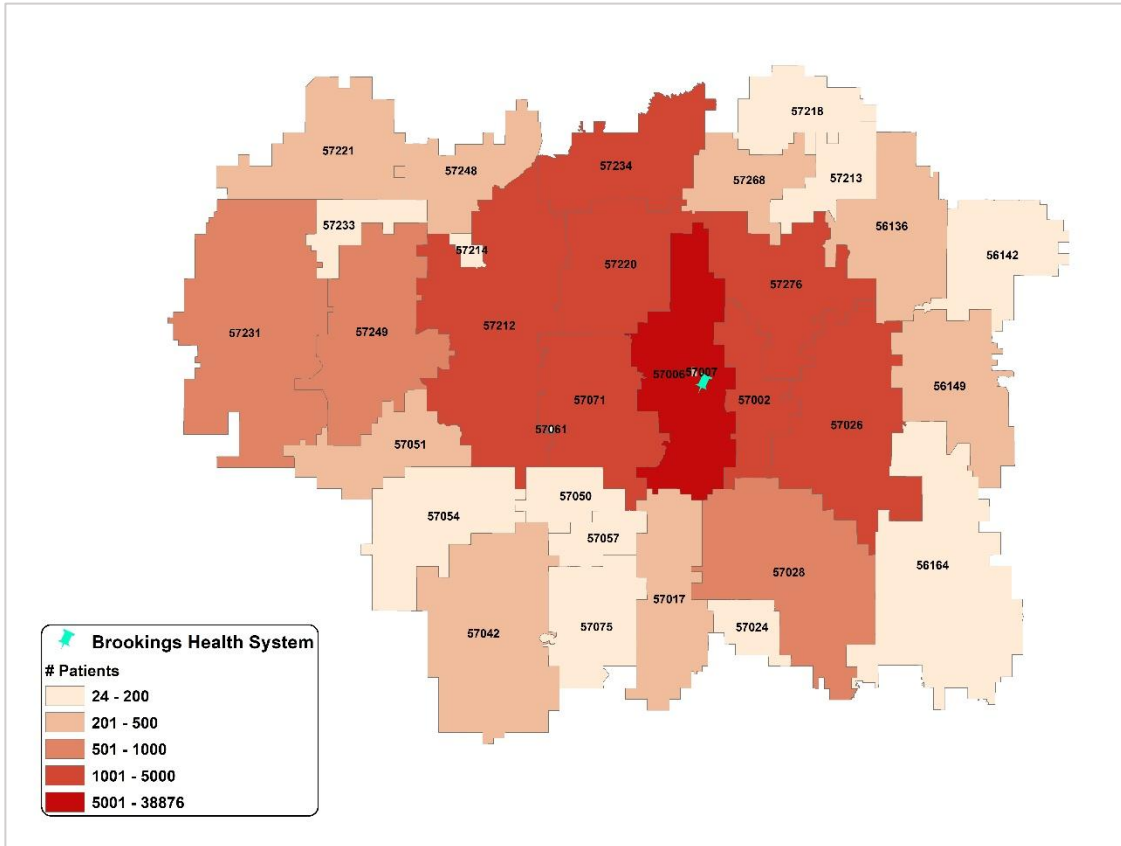


Figure 2. Number of patients who received service from Brookings Health by ZIP Code, 2019-2024 combined



Part 2.2 Cost-Saving Analysis based on Transportation and Travel Access

A simulation analysis is used to model the additional costs associated with transportation and travel access⁷. This includes the travel distance and time needed to access alternative providers from each community (defined as ZIP Code area) within the service area. Instead of using geometric distance from ZIP Code centroids, travel distance and time to Brookings Health and alternative providers are analyzed using rural road networks. This approach allows for a more realistic assessment of accessibility by incorporating factors such as road connectivity, posted speed limits, and one-way streets.

Table 3 presents the calculated differences in travel distance (miles) and time (minutes) for a single one-way trip to Brookings Health vs. the trip to the nearest alternative provider for each community. More than half of the communities (the communities shown in the upper part of Table 3, before Badger (57214)) would have traveled more distance and used more time to access the service, if not available from Brookings Health. Across all communities (including

⁷ The “cost” can be associated with stress, food and lodging accommodations, deferred and/or delayed services. There is scant understanding of costs incurred for rural patients who need to leave their communities for care. The analysis in this study focuses on additional costs associated with extra travel distance and time.

those communities that are closer to the alternative provider than to Brookings Health), the average travel distance to Brookings Health is 28.3 miles and the average travel time is 33 minutes. Outside Brookings Health, the average travel distance to the nearest alternative is 34.6 miles and the average travel time is 41 minutes. Considering the communities closer to Brookings Health (the communities shown in the upper part of Table 3, before Badger (57214)), the average travel distance to Brookings Health is 22.4 miles and the average travel time is 28 minutes while traveling to a nearest alternative takes an extra 20.6 miles and 22 minutes.

Based on the calculated travel distance and time, the travel cost for a single two-way trip between home and the hospital is estimated using the following equation, reflecting gas cost⁸ and lost wages⁹:

$$Cost = \left(Miles \times \$0.2 + \frac{Minutes \times 1.1}{60} \times \$30 \right) \times 2$$

The estimated cost for a single trip between each ZIP Code area and the identified competitors are mapped (**Figure 3**), with areas shaded in darker colors denoting a higher cost. Without access to Brookings Health, communities on the east side of the service area would have to choose Madison Regional Health System or the options such as Huron Regional Medical Center and the hospitals in Sioux Falls while the communities to the north side would have to choose Prairie Lakes Healthcare System in Watertown for optimizing travel distance and time. These communities would have paid more additional cost for transportation to access medical services.

For patients from the areas that would otherwise face additional travel expenses to access the same healthcare services outside Brookings Health, an estimate of cost savings per patient for a single two-way trip per person is presented in **Table 4**. Take Brookings patients as an example. If accessing an alternative nearest facility, each patient had to travel additional 42.3 miles and use additional 42 minutes for a one-way trip. Based on the equation, it then translates to \$8.5 gas cost, \$23.1 lost wage, and a combined \$63.1 cost saving per patient for a single two-way travel by accessing Brookings Health.

The analysis further quantifies the six-year cost savings by service type for these communities that benefit from the proximity to Brookings Health, considering both increased costs and patient numbers from 2019 to 2024. Total cost savings for these communities, accumulated from 2019 to 2024, exceeding \$3 million. Brookings (ZIP Code: 57006) alone would have cost more than \$2 million additional expenses between 2019 and 2024 for the five types of services

⁸ The study assumes that travel to access medical services relies entirely on personal vehicles on a gas cost of 20 cents per mile.

⁹ Taking time for travel to get medical services often means taking time off the work. Estimation of travel costs thus needs to consider lost wages associated with the time needed for travel. In addition, a commonly suggested buffer is to add 10% to the expected travel time for general unexpected delays and \$30 hourly wage is used for the estimation.

combined, more than four hundred thousand dollars per year. Such a cost-saving is a direct result of the substantial number of patients utilizing Brookings Health services and the considerable financial burden associated with seeking care elsewhere for these communities.

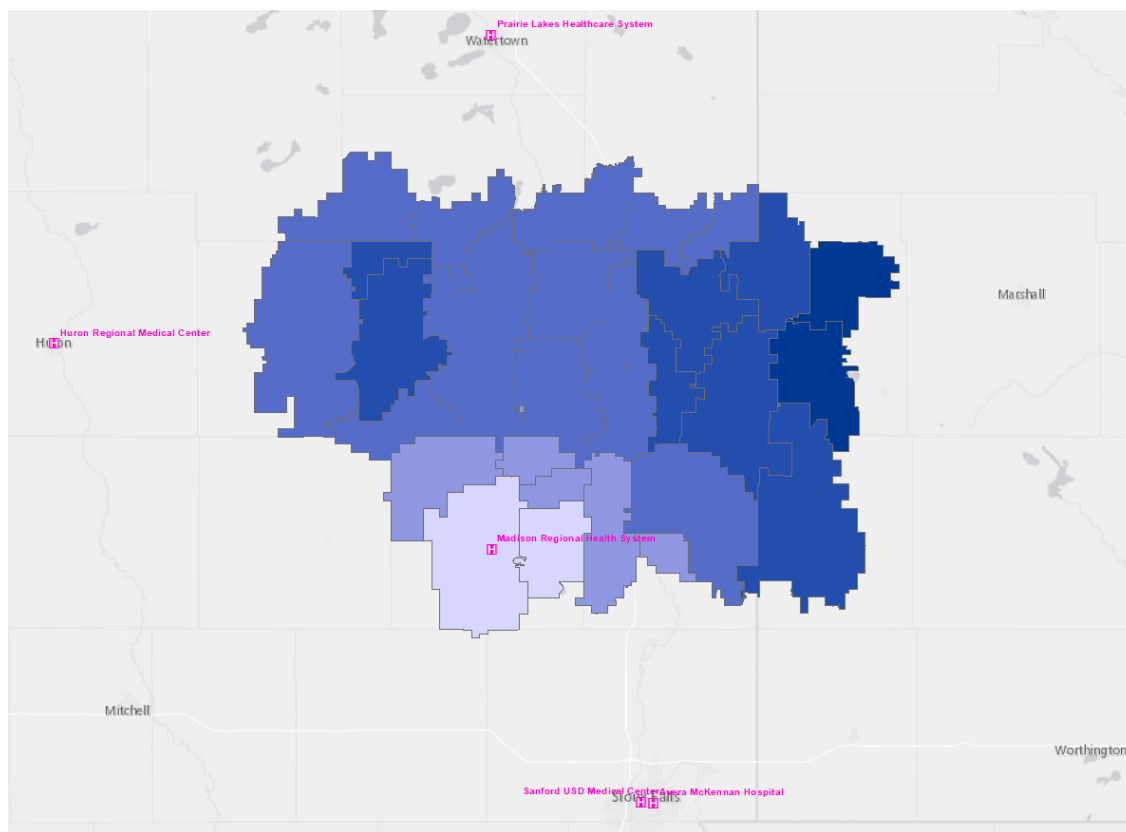
Table 3 Travel distance and time from each ZIP Code area to Brookings Health and the nearest alternative provider

Community		Travel to Brookings Health		Travel to the Nearest Facility		Differences (Nearest facility vs. Brookings Health)	
ZIP Code	City/Town Name	Miles	Minutes	Miles	Minutes	Miles	Minutes
57006	Brookings	2	8	44.3	50	42.3	42
57007	Brookings	1.8	6	43.6	48	41.8	42
56149	Lake Benton, MN	26.3	33	66.4	73	40.1	40
57002	Aurora	6.4	12	43.6	50	37.2	38
57276	White	16.1	18	48.7	50	32.6	32
57026	Elkton	19.2	24	49.9	56	30.7	32
56142	Ivanhoe, MN	37.7	42	66	73	28.3	31
56136	Hendricks, MN	29.4	34	55.1	62	25.7	28
57220	Bruce	19.4	24	42.6	50	23.2	26
57071	Volga	12.4	21	27.7	36	15.3	15
57268	Toronto	22.1	30	37.4	41	15.3	11
57213	Astoria	29.6	35	44.3	50	14.7	15
56164	Pipestone, MN	39.6	44	45.1	57	5.5	13
57212	Arlington	23.5	29	28.2	37	4.7	8
57028	Flandreau	27	30	31.6	44	4.6	14
57061	Sinai	18.1	25	22.4	31	4.3	6
57249	Lake Preston	39.1	47	43.3	50	4.2	3
57214	Badger	33.3	39	33.9	39	0.6	0
57234	Estelline	28.7	35	28.3	34	-0.4	-1
57218	Brandt	37.5	40	36.4	42	-1.1	2
57233	Erwin	45.4	53	42.3	50	-3.1	-3
57024	Egan	27.3	26	22.3	31	-5	5
57017	Colman	23.6	26	18.3	23	-5.3	-3
57050	Nunda	24.6	28	18.4	22	-6.2	-6
57057	Rutland	24.9	28	17.3	21	-7.6	-7
57051	Oldham	37.7	44	26.8	35	-10.9	-9

57231	De Smet	45	53	32.9	35	-12.1	-18
57248	Lake Norden	40.2	45	26.8	31	-13.4	-14
57221	Bryant	53.6	61	36.6	42	-17	-19
57075	Wentworth	32.9	38	9.1	13	-23.8	-25
57054	Ramona	39.1	45	14.8	21	-24.3	-24
57042	Madison	42.7	51	2.7	6	-40	-45

Note: Travel distance and time is calculated based on a single one-way trip.

Figure 3. Cost distribution by ZIP Code areas to alternative providers



Note: Alternative providers shown on the map are Huron Regional Medical Center, Madison Regional Health System, Prairie Lakes Healthcare System in Watertown, Avera McKennan Hospital and University Health Center, and Sanford USD Medical Center in Sioux Falls.

Table 4 Estimated six-year cost savings by ZIP Code area, 2019-2024

Community		Cost Saved (\$) Per Travel Per Patient			Cost Saved for the Community by Service Type, 2019-2024 (\$)					Total Cost Saving (\$) 2019-2024
ZIP Code	City/Town Name	Gas Cost (one-way)	Lost Wages (one-way)	Combined (two-way)	Obstetrics	Inpatient Care	Emergency	General Surgery	Orthopedics	
57006	Brookings	8.5	23.1	63.1	108,630	175,410	1,979,506	95,879	94,869	2,454,295
57028	Flandreau	3.1	8.3	22.6	17,674	7,555	76,207	5,859	5,542	112,836
57276	White	7.4	20.9	56.7	11,930	5,951	76,631	5,101	5,215	104,828
57026	Elkton	6.5	17.6	48.2	11,172	6,030	63,050	4,342	2,750	87,343
57220	Bruce	6.1	17.6	47.5	11,298	3,798	55,694	2,754	4,226	77,770
57007	Brookings	4.6	14.3	37.9	4,608	3,447	35,342	1,856	1,856	47,109
57249	Lake Preston	0.9	4.4	10.7	8,395	2,755	19,651	1,271	972	33,044
57213	Astoria	0.9	7.7	17.2	7,133	896	8,120	724	1,172	18,045
57071	Volga	8.0	22.0	60.0	2,840	781	12,308	540	781	17,250
57002	Aurora	8.4	23.1	62.9	316	378	14,031	378	440	15,542
56149	Lake Benton, MN	5.1	15.4	41.1	3,787	493	7,928	1,232	616	14,057
56136	Hendricks, MN	3.1	6.1	18.2	2,588	456	5,011	255	219	8,528
57061	Sinai	0.8	1.7	5.0	3,156	438	2,649	378	344	6,966
57268	Toronto	2.9	8.3	22.4	1,830	313	2,507	336	179	5,165
57212	Arlington	5.7	17.1	45.4	1,452	363	2,271	363	273	4,722
56142	Ivanhoe, MN	1.1	7.2	16.5	631	149	1,370	66	132	2,347
56164	Pipestone, MN	0.9	3.3	8.3	631	50	1,032	75	108	1,896
57214	Badger	0.1	0.0	0.2	1,010	2	27	2	3	1,044

Part 2.3 Service Charge Comparisons with Competitors

Comparing service charges between Brookings Health and the competitors in the area can provide insights into the impact of Brookings Health on accessible and affordable care in surrounding rural community. Utilizing the 2019-2024 data of average charge per visit¹⁰ available from the SDAHO's Inpatient and Outpatient Data Base, the study conducts the service charge comparisons¹¹ between Brookings Health and the identified competitors for each of the following services: Obstetrics, Inpatient Care, General Surgery, Orthopedics, and Emergency.

Average charge comparisons between Brookings Health and the competitors by service type are presented in **Table 5**. The average charge is the overall averages across all visits between 2019 and 2024. Difference is calculated by subtracting the competitor average from the Brookings Health average. Positive numbers indicate that the average charge from the competitor was higher than that from Brookings Health. Negative numbers are in parentheses. Despite service type, the average charge at Brookings Health was lower than that for the same service from Sanford and Avera in Sioux Falls. In comparison to the three rural hospitals, the average charge comparisons show variations by service type. The average charges for Obstetrics from Prairie Lakes Healthcare System in Watertown, Inpatient Care from Madison Regional Health System, General Surgery from Huron Regional Medical Center, Emergency care from Prairie Lakes Healthcare System and Madison Regional Health System were more competitive. Although the average charge for Orthopedics was lower from Huron, the use of the comparison needs extra caution because the average charge data had observations for the years of 2020 and 2021 only. Average charge comparisons between Brookings Health and the competitors by service type and year are available in **Appendix B**.

It is then meaningful to take a closer look at the comparisons between Brookings Health and the rural competitors. **Figure 4** shows the differences in the average charge by service type and year. The differences are calculated by subtracting the average charge from Brookings Health from the overall mean of the rural competitors' average charges. A positive figure (i.e., bar above the \$0 line) indicates that the overall mean across the rural competitors was higher than the average charge from Brookings Health. Patients seeking medical service outside Brookings Health would have paid more than they actually paid for the same service provided by Brookings Health. For Inpatient Care, General Surgery, and Orthopedics, the overall mean averages across the rural competitors were in general higher than that from Brookings Health. For Obstetrics and Outpatient Emergency, average charges from the rural competitors were possibly more competitive.

Given the distribution of patients in surrounding communities, estimates of the differences in the total service charge for the patients in a community between 2019 and 2024, seeking equivalent services from Brookings Health vs. the nearest competitor (optimized based on travel

¹⁰ The average charge per visit does not include professional fees ambulance.

¹¹ Note that the analysis does not consider factors influencing service charges such as variations in services and quality, payer mix and reimbursement differences.

distance and time in Part 2.2) are calculated for each community. **Table 6** includes 19 communities that had positive differences with all services combined. Positive differences shown as positive numbers in the table indicate that patients in the community would have paid more in total for seeking the medical services from the nearest competitor than from Brookings Health. For instance, it would have cost an additional \$16 million for all patients in Brookings (ZIP Code: 57006) between 2019 and 2024, seeking Orthopedics service from the nearest competitor, which is Madison Regional Health System. The estimate is derived from multiplying the difference between Brookings Health's average charge and Madison's charge for Orthopedics service, which is (\$10,713 in Table 5) by the total number of Orthopedics patients from Brookings (ZIP Code: 57006; N = 1,503 in Appendix B). In contrast, for the medical services that Brookings Health had a less competitive average charge than the competitor's charges, the differences in the overall cost of service charge would have been lower if seeking the service from the competitor (i.e., negative numbers in parentheses).

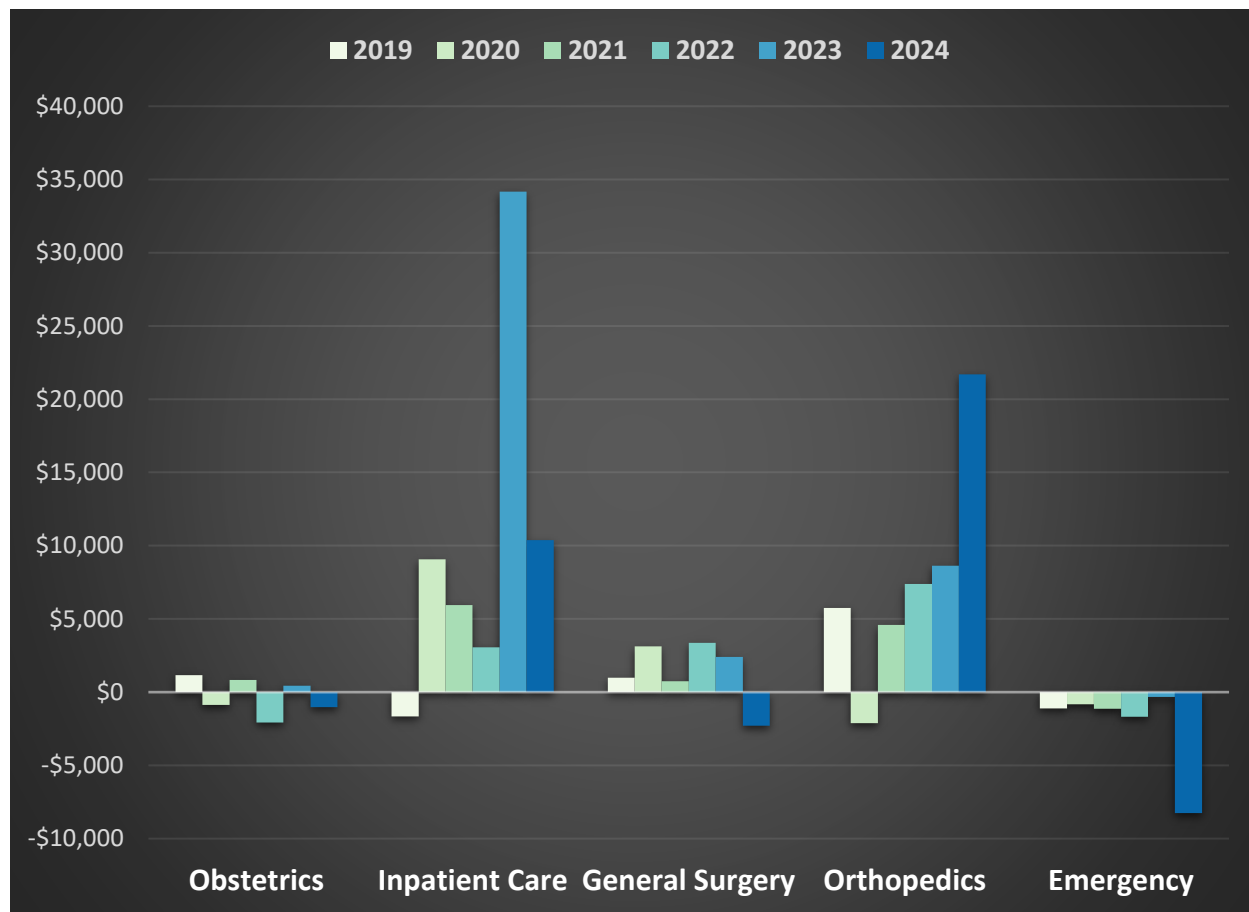
Summing up the differences in the overall cost across all five types of medical services, communities benefited substantially from Brookings Health's medical service provision are highlighted by graded green color (**Table 6**). Combining the travel cost-savings in **Table 4** and the charge cost differences in **Table 6** provides insights into a better understanding of the impacts of Brookings Health on accessible and affordability healthcare service to surrounding communities.

Table 5 Average charge comparisons between Brookings Health and competitors, averages between 2019 and 2024

	Average (\$, 2019-2024)	Difference (\$, Competitor – Brookings Health)
Obstetrics		
Brookings Health System	9,375	
Huron Regional Medical Center, Huron	11,512	2,137
Madison Regional Health System, Madison	9,531	156
Avera McKennan Hospital	41,726	32,351
Sanford USD Medical Center, Sioux Falls	21,488	12,113
Prairie Lakes Healthcare System, Watertown	5,718	(3,657)
Inpatient Care		
Brookings Health System	20,940	
Huron Regional Medical Center, Huron	43,625	22,685
Madison Regional Health System, Madison	17,971	(2,969)
Avera McKennan Hospital	51,354	30,414
Sanford USD Medical Center, Sioux Falls	84,992	64,052
Prairie Lakes Healthcare System, Watertown	23,864	2,924
General Surgery		
Brookings Health System	9,375	
Huron Regional Medical Center, Huron	7,996	(1,379)
Madison Regional Health System, Madison	13,627	4,252
Avera McKennan Hospital	13,708	4,332
Sanford USD Medical Center, Sioux Falls	10,900	1,525
Prairie Lakes Healthcare System, Watertown	10,140	765
Orthopedics		
Brookings Health System	9,353	
Huron Regional Medical Center, Huron	3,633	(5,720)
Madison Regional Health System, Madison	20,065	10,713
Avera McKennan Hospital	21,030	11,677
Sanford USD Medical Center, Sioux Falls	15,750	6,398
Prairie Lakes Healthcare System, Watertown	15,324	5,972
Emergency		
Brookings Health System	2,662	
Huron Regional Medical Center, Huron	3,248	586
Madison Regional Health System, Madison	2,357	(305)
Avera McKennan Hospital	5,952	3,289
Sanford USD Medical Center, Sioux Falls	8,362	5,700
Prairie Lakes Healthcare System, Watertown	1,974	(689)

Note: Negative numbers in parentheses represent that the average charge from the competitor was lower than that from Brookings Health. In contrast, positive numbers represent that the average charge from the competitor was higher than that from Brookings Health.

Figure 4 Service charge difference between rural competitor averages and Brookings Health, by year and service type



Note: Differences in service charge are calculated by comparing the overall average service charge from the rural competitors (Prairie Lakes Healthcare System in Watertown, Madison Regional Health System, and Huron Regional Medical Center) and the charge for the same medical service from Brookings Health. A positive figure (i.e., bar above the \$0 line) indicates that the average charge per visit from Brookings Health was lower than the overall mean charge from the rural competitors. Patients seeking medical service outside Brookings Health would have paid more than they actually paid for the same service provided by Brookings Health.

Table 6 Service charge difference by service type and community, 2019-2024 combined

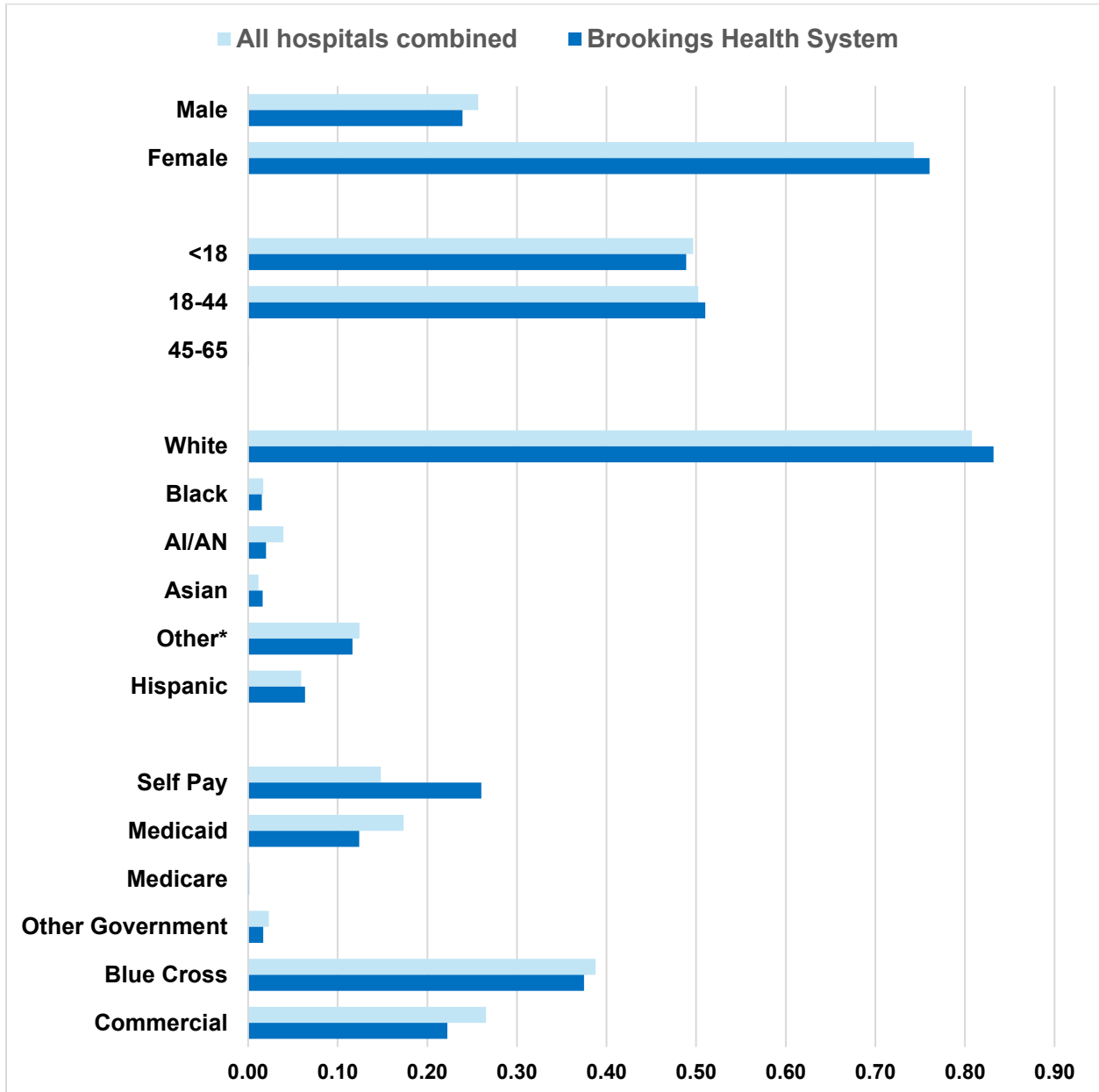
Community		Difference by Service Type (\$)					Difference (\$) Service Combined
ZIP Code	City/Town Name	Obstetrics	Inpatient Care	Emergency	General Surgery	Orthopedics	
57006	Brookings	268,542	(8,250,851)	(9,569,939)	6,458,691	16,101,351	5,007,794
57071	Volga	43,691	(991,646)	(1,028,064)	1,101,251	2,624,638	1,749,870
57002	Aurora	29,491	(311,745)	(412,568)	382,674	985,578	673,431
57231	De Smet	213,729	907,400	129,460	(190,279)	(400,389)	659,921
57249	Lake Preston	7,802	(261,272)	(162,342)	323,147	739,184	646,519
57026	Elkton	27,931	(237,520)	(357,946)	246,612	953,440	632,517
57028	Flandreau	17,632	(154,388)	(143,728)	178,581	728,471	626,569
57017	Colman	4,369	(41,566)	(70,796)	123,306	278,533	293,846
57212	Arlington	20,753	(766,002)	(561,484)	505,980	974,866	174,113
57042	Madison	5,617	(44,535)	(49,435)	21,260	214,256	147,163
57061	Sinai	1,560	(17,814)	(37,839)	38,267	139,267	123,441
57054	Ramona	780	(2,969)	(12,206)	17,008	107,128	109,741
56149	Lake Benton, MN	7,022	(38,597)	(62,557)	38,267	139,267	83,402
57051	Oldham	2,029	(92,039)	(42,111)	21,260	182,118	71,256
56164	Pipestone, MN	1,560	(26,721)	(25,328)	17,008	85,702	52,222
57075	Wentworth	1,248	(23,752)	(14,953)	21,260	53,564	37,367
57024	Egan	312	(5,938)	(4,882)	8,504	21,426	19,421
57050	Nunda	1,248	(38,597)	(27,769)	17,008	64,277	16,167
57007	Brookings	780	(17,814)	(68,049)	25,512	74,990	15,418

Note: 1. Difference in service charge is calculated by comparing the average service charge between 2019 and 2024 at the alternative nearest facility and the average charge at Brookings Health. A positive number indicates that the service charge, 2019-2024 averaged, at the nearest facility was higher than that of Brookings Health. Patients seeking a medical service at the nearest alternatives outside Brookings Health would have paid more than they actually paid for the same service at Brookings Health. 2. The table includes 19 communities with positive differences of all services combined.

Appendices

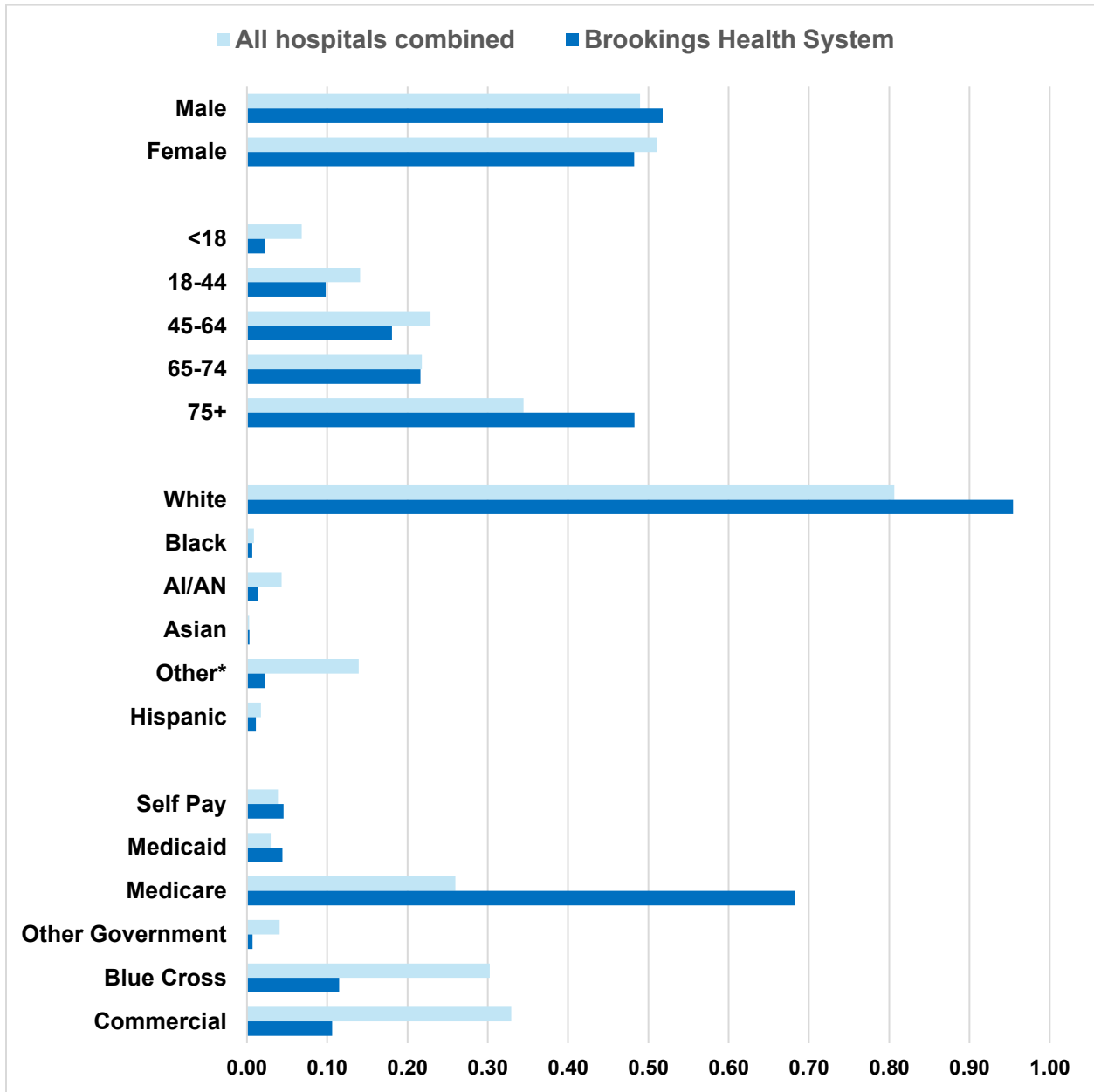
Appendix A. Demographic comparisons between BHS patients and the overall patient population in the defined service area by service type

Obstetrics¹

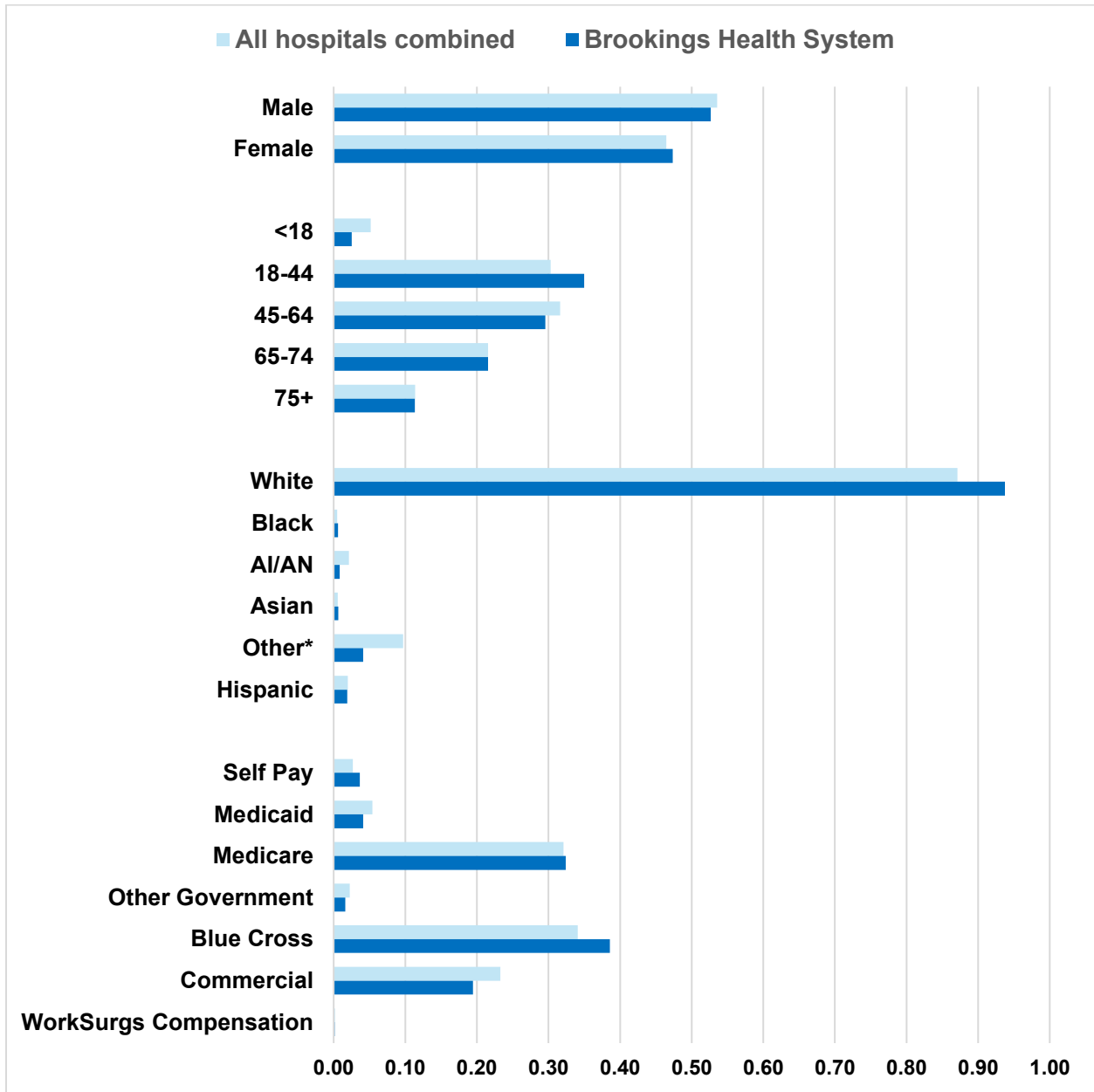


¹ Obstetrics services include newborns.

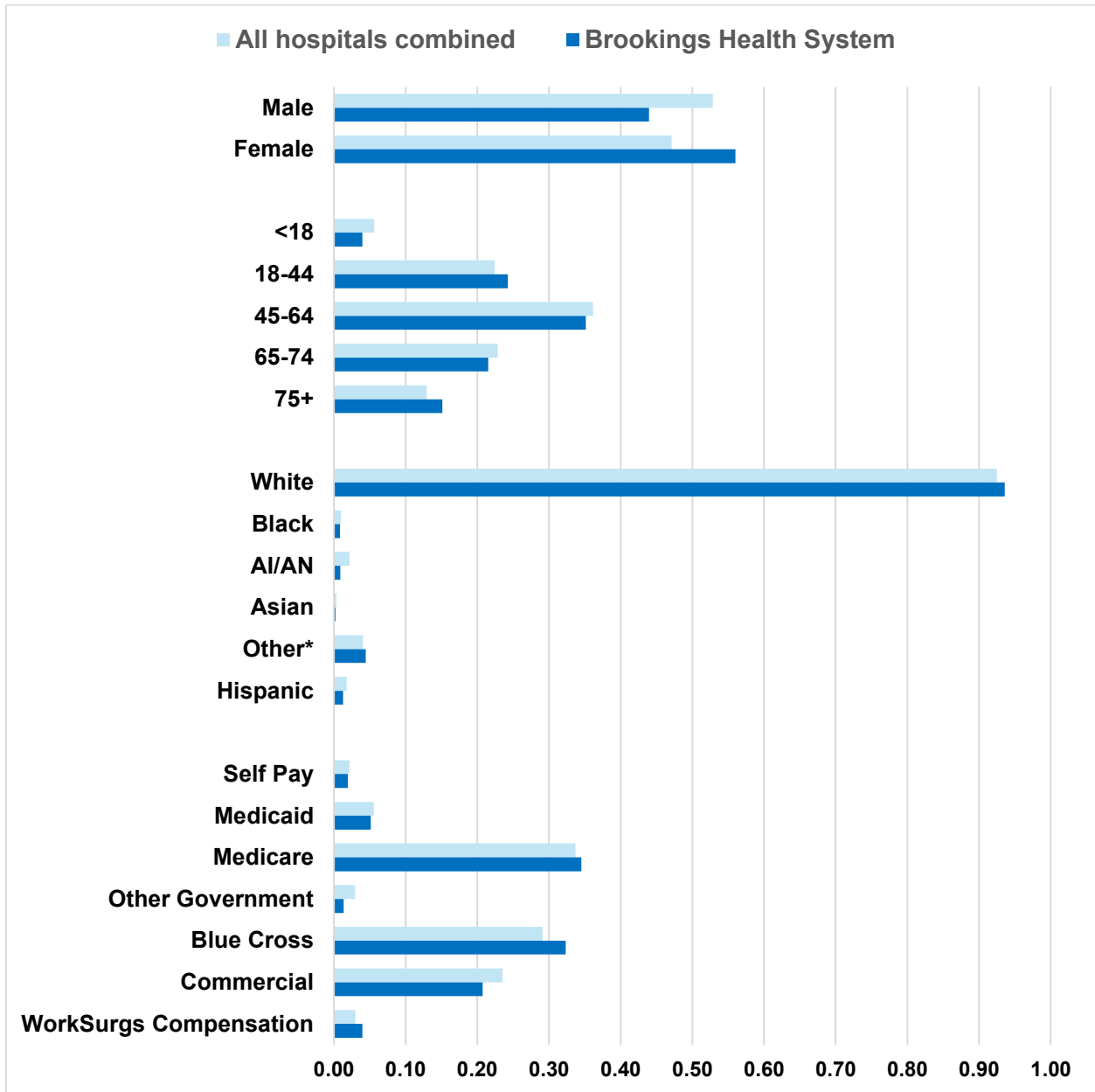
Inpatient Care



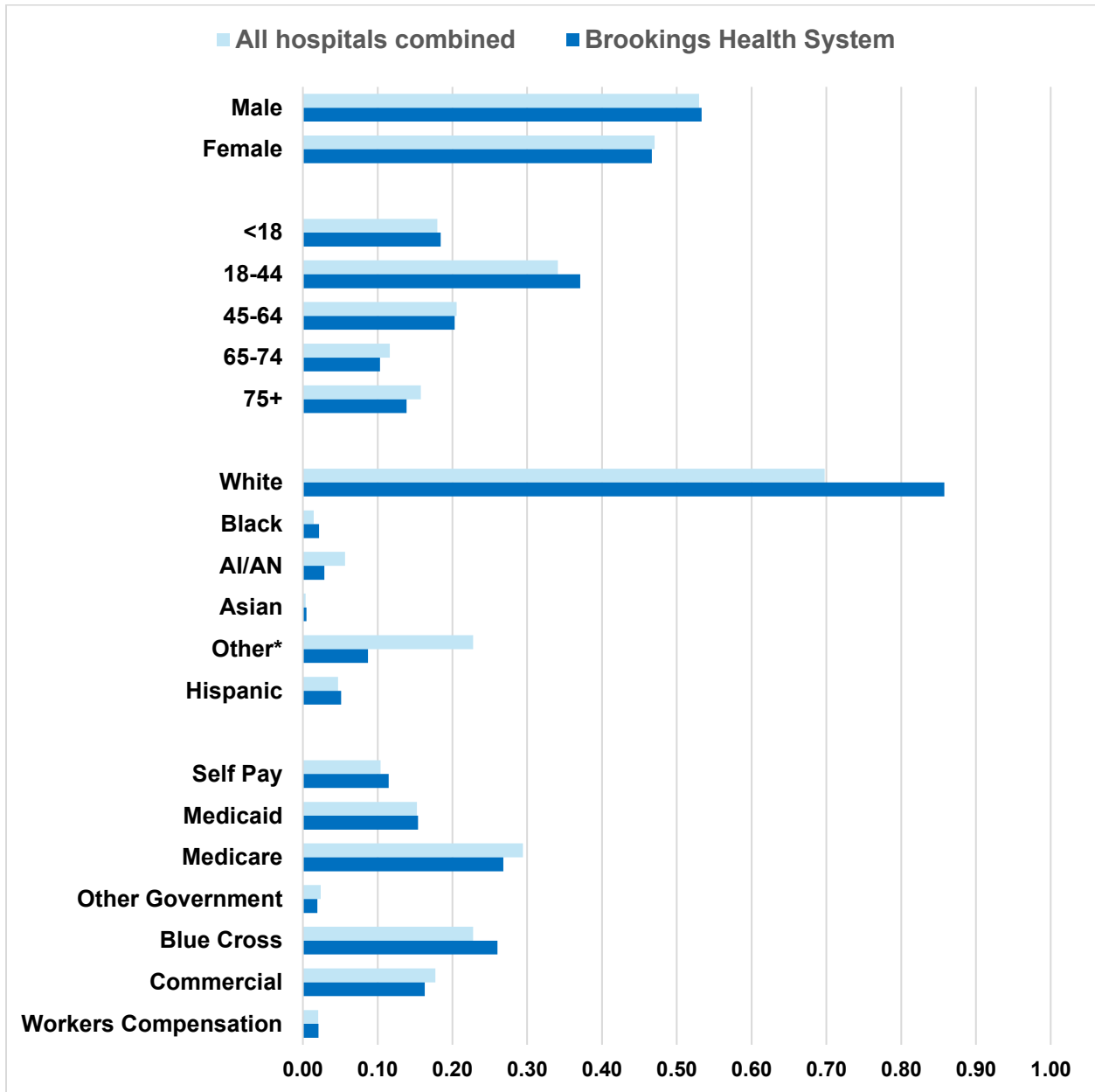
General Surgery



Orthopedics



Emergency



Appendix B. Number of BHS patients by ZIP Code and service type, 2019-2024 combined

ZIP Code	Obstetrics	Inpatient Care	General Surgery	Orthopedics	Emergency
56136	60	12	30	15	193
56142	23	8	8	6	50
56149	45	13	9	13	205
56164	10	9	4	8	83
57002	189	105	90	92	1,352
57006	1,721	2,779	1,519	1,503	31,361
57007	5	6	6	7	223
57017	28	14	29	26	232
57024	2	2	2	2	16
57026	179	80	58	89	1,173
57028	113	52	42	68	471
57042	36	15	5	20	162
57050	8	13	4	6	91
57051	13	31	5	17	138
57054	5	1	4	10	40
57057	13	1	2		36
57061	10	6	9	13	124
57071	280	334	259	245	3,369
57075	8	8	5	5	49
57212	133	258	119	91	1,840
57213	29	14	15	8	112
57214	16	7	9	13	111
57218	6	0	8	6	67
57220	73	91	49	49	933
57221	58	21	13	5	130
57231	100	40	138	70	221
57233	14	6	2	4	31
57234	58	99	46	35	835
57248	57	39	19	15	248
57249	50	88	76	69	532
57268	41	25	14	12	275
57276	177	125	90	57	1,307
Total	3,560	4,302	2,688	2,579	46,010

Appendix C. Average charge comparisons between BHS and the competitors by service type and year

	Year					
	2019	2020	2021	2022	2023	2024
Obstetrics						
Brookings Health System	6,344	8,442	7,934	11,138	10,456	11,115
Huron Regional Medical Center, Huron	9,901	8,283	10,969	10,333	15,922	14,206
Madison Regional Health System, Madison	7,750	9,210	9,028	9,987	11,348	10,189
Avera McKennan Hospital	31,381	27,014	48,234	35,794	56,493	51,522
Sanford USD Medical Center, Sioux Falls	20,650	25,992	22,891	23,073	20,164	15,427
Prairie Lakes Healthcare System, Watertown	4,883	5,217	6,269	6,848	5,428	5,847
Inpatient Care						
Brookings Health System	19,289	21,383	19,678	22,788	19,491	23,430
Huron Regional Medical Center, Huron	17,372	57,114	34,205	29,899	120,293	51,306
Madison Regional Health System, Madison	14,780	15,377	19,459	19,754	17,644	20,819
Avera McKennan Hospital	38,747	49,749	43,651	54,493	63,624	56,440
Sanford USD Medical Center, Sioux Falls	78,100	70,238	80,820	112,803	74,396	93,594
Prairie Lakes Healthcare System, Watertown	20,713	18,876	23,198	27,865	23,037	29,302
General Surgery						
Brookings Health System	9,298	9,846	10,439	8,705	8,180	9,800
Huron Regional Medical Center, Huron	---	4,036	5,666	12,070	10,431	8,599
Madison Regional Health System, Madison	11,990	11,412	14,294	15,826	13,072	15,565
Avera McKennan Hospital	12,871	12,654	13,315	12,268	16,534	14,300
Sanford USD Medical Center, Sioux Falls	9,834	11,132	10,415	11,329	11,260	11,355
Prairie Lakes Healthcare System, Watertown	8,591	7,782	10,917	11,007	10,031	12,066
Orthopedics						
Brookings Health System	7,159	10,812	10,056	11,208	7,419	9,374
Huron Regional Medical Center, Huron	---	1,108	6,158	---	---	---
Madison Regional Health System, Madison	13,875	14,053	26,194	19,849	13,487	37,473
Avera McKennan Hospital	11,401	10,711	13,416	26,010	30,943	32,596
Sanford USD Medical Center, Sioux Falls	13,349	16,370	16,160	12,860	17,804	17,960
Prairie Lakes Healthcare System, Watertown	11,955	10,893	11,611	17,317	18,622	24,649
Emergency						
Brookings Health System	2,275	2,132	2,255	2,624	2,981	3,707
Huron Regional Medical Center, Huron	---	2,808	2,881	3,978	2,973	3,350
Madison Regional Health System, Madison	2,016	2,088	2,197	2,384	2,454	3,004
Avera McKennan Hospital	4,572	5,851	5,065	6,924	6,101	7,049
Sanford USD Medical Center, Sioux Falls	5,252	6,332	8,838	8,382	12,799	8,271
Prairie Lakes Healthcare System, Watertown	1,866	2,543	1,574	1,548	2,264	2,090