Reasons for Use of Out-of-County Health Care Facilities in the Mississippi Delta*

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ABSTRACT. Mississippi has a long-standing place as one of the least healthy states in the country. Problems related to chronic illness, high mortality, and insufficient medical infrastructure are magnified within the state's Delta region. Efforts to improve patient care require an understanding of the areas of weakness in current health care provision. Thus, the present analysis focuses on 16 Delta counties, using analysis of variance (ANOVA) to examine mean differences in agreement at the county level, with five potential reasons that respondents might choose to leave their home county for health care: quality, availability, familiarity, convenience, and cost.

Keywords: Health care, quality, accessibility, availability, Mississippi Delta

JEL Classifications: I1, R1

1. INTRODUCTION

Mississippi has a long-standing place as one of the least healthy states in the country. Its residents have consistently been plagued with a relatively high rate of chronic illness and an unsatisfactory medical infrastructure (Smith et al., 1999; Bogle et al., 2001; Champagne et al., 2004; Stuff et al., 2004). The state ranks near the bottom with regard to obesity, cardiovascular deaths, infant mortality, and total mortality (Kippenbrock, Tester, and Richey, 2002; Eberhardt and Pamuk, 2004). Access to medical care is limited not only by a shortage of rural health care providers, but also by high rates of poverty, low levels of education, and insufficient insurance coverage (Smith et al., 1999; Preston, Warren, and Stewart, 2000; Lentz and Oden, 2001). These problems are further magnified to varying degrees within the state's Delta counties, making the region a prime location for the study of perceived health care quality.

One way to determine the extent to which local health care facilities are meeting the health care needs of local populations is to assess the factors influencing their health care choices, such as the decision to use health care facilities within or outside their county of residence. Using household survey data collected from 16 Delta counties, we explore mean differences in agreement, at the county level, with variables representing five potential reasons that respondents might choose to leave their home county for health care: quality, availability, familiarity, convenience, and cost.

Understanding differences that exist among the Delta counties with regard to these decisions will help local health care providers and administrators to better tailor their efforts to meet the needs of their residents. County-level improvements within the health sector will positively impact not only the quality of life of county residents, but also the performance of

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county economies in general. Doeksen (1998, p. 66), and his colleagues have referred to a high-quality health care infrastructure as “an essential component for community growth and development...critical for quality of life preservation” and have acknowledged a viable health sector as among its major components, pointing specifically to the employment and income benefits provided by this economic sector, particularly in rural areas. Patient perceptions are crucial to gauging the quality and viability of this important sector.

2. LITERATURE REVIEW

Recent literature has pointed to a change in approach to health care research. The focus of such studies has shifted from addressing structural and procedural concerns to addressing patients’ viewpoints regarding quality of care (Baltussen et al., 2002). This transition in emphasis from observed to perceived quality of care has been widely accepted over the last decade. In fact, the World Health Organization has argued that the user perspective is a critical component in the effort to effectively manage health systems (Atkinson and Haran, 2005).

Atkinson and Haran (2005) identified three important reasons for researching user satisfaction in the health care field. First, satisfied patients are more likely to comply with treatment directives, return for future health care needs, and experience an improvement in their health status. Second, seeking this type of feedback from patients allows health care providers to evaluate the effectiveness of communication with patients. This allows for user involvement in the decision-making process and provides a sense of reassurance for the patient. Finally, user satisfaction research can help guide and direct administrative planning efforts, including staffing, training, and programming decisions.

One critical determinant of patient satisfaction is perception of health care quality—a construct which has been linked to variables such as clinical outcomes and functional status (Nesbitt et al., 2005). Quality of care is a broad construct, comprised of effectiveness of care among other elements. Also referred to as health care delivery, effectiveness includes the prescription of high-quality drugs and the availability and use of appropriate medical supplies (Haddad, Fournier, and Yatara, 1998; Noorali, Luby, and Rahbar, 1999; Baltussen et al., 2002), as well as proper diagnosis and successful health outcomes (Haddad, Fournier, and Yatara, 1998; Baltussen et al., 2002; Atkinson and Haran, 2005).

Availability also contributes greatly to patients’ perception of care. Appropriate staffing falls under the umbrella of availability, as does the provision of advanced equipment. Likewise, hospital capacity influences the perception of availability. Furthermore, patients evaluate care based on the *types* of services available; for example, specialty care for women or an oncology unit (Baltussen et al., 2002; Basu and Mobley, 2007).

Accessibility is another component in perception of care assessments, and is comprised of both financial and physical dimensions (Haddad, Fournier, and Yatara, 1998; Noorali, Luby, and Rahbar, 1999; Baltussen et al., 2002; Atkinson and Haran, 2005). Financial accessibility involves concerns such as fees, payment plan options, insurance premiums, and out-of-pocket costs; whereas physical accessibility refers to the ease of acquiring medicine, physical distance from the facility, and time devoted by the attending physician.

While it is immensely valuable to know that these particular factors influence patient satisfaction and perception of care, it is also important to understand *how* their influence on facility use decisions varies among different populations. For example, several of the studies

outlined above were conducted in developing countries, where perceptions of quality may or may not differ from those of U.S. patients. Accordingly, this study of the Delta region of Mississippi explores differences in mean levels of agreement with each of five variables as reasons for respondents' decisions to utilize health care facilities outside of their county of residence. Such comparisons help to identify the Delta counties that are most greatly in need of improvement with regard to each of the factors explored.

3. METHODS

3.1. Study Area

The study area includes 16 counties located within the Mississippi Delta region: 1) Bolivar, 2) Carroll, 3) Coahoma, 4) Holmes, 5) Humphreys, 6) Issaquena, 7) Leflore, 8) Panola, 9) Quitman, 10) Sharkey, 11) Sunflower, 12) Tallahatchie, 13) Tate, 14) Tunica, 15) Warren, and 16) Washington. These counties are predominantly rural, with the exceptions of Tate and Tunica Counties (Office of Rural Health Policy, 2007). The average county population for the entire region, according to U.S. Census Bureau data from the year 2000, is 25,158, with county-level populations ranging from 2,274 in Issaquena County to 49,644 in Warren County (see Table 1).

Figure 1. Mississippi Delta Counties

The Delta counties also have a substantial minority presence (see Table 1). The region altogether is 61.0 percent African-American, 37.7 percent white, 6.1 percent Hispanic, and 0.1 percent Native American. Within the Delta, the African-American presence ranges from 31.0 percent in Tate County to 78.7 percent in Holmes County (U.S. Bureau of the Census, 2000).

In addition to challenges faced due to rurality and racial composition, annual household income for the Delta region is fairly low (see Table 1). The region's average county-level annual median household income is a mere \$24,420, compared with \$31,330 for the state of Mississippi and \$41,994 for the entire nation. County median incomes range from \$17,235 in Holmes County to \$35,836 in Tate County. To further illustrate the economic situation in the Delta, 25.3 percent of families in the study region were living at or below the poverty level in 1999, compared with much lower state (16.0 percent) and national (9.2 percent) poverty rates (U.S. Bureau of the Census, 2000).

These data paint a clear picture of the disadvantages faced by the Delta population. Rural health care, in and of itself, has been shown to suffer as a result of workforce shortages (Daniels et al., 2007), unfavorable economies of scale (Nesbitt et al., 2005), and difficulties in recruitment and compensation of trained professionals. Poverty and racial diversity serve to complicate these challenges (Brems et al., 2007). Probst et al. (2004) highlight the combined, or interactive, effects of rurality and racial/ethnic minority status, noting inferior educational and economic resources, lack of health insurance, and a higher concentration of officially designated health professional shortage areas (HPSA) as amplifying health care concerns among rural minorities. Research often focuses on urban African American populations, since only 8 percent of the nation's African American population resides in rural areas (Probst et al., 2004). Mississippi,

TABLE 1. County-level Demographics and Sample Distribution

County	Population ^a	Median Household Income ^a	% African American Population ^a	% Receiving Out-of-County Care ^b
Bolivar	40,633	23,428	65.1	34.5
Carroll	10,769	28,878	36.6	76.1
Coahoma	30,622	22,338	69.2	35.0
Holmes	21,609	17,235	78.7	51.0
Humphreys	11,206	20,566	71.5	55.1
Issaquena	2,274	19,936	62.8	77.3
Leflore	37,947	21,518	67.7	28.8
Panola	34,274	26,785	48.4	54.5
Quitman	10,117	20,636	68.6	65.7
Sharkey	6,580	22,285	69.3	69.0
Sunflower	34,369	24,970	69.9	48.8
Tallahatchie	14,903	22,229	59.4	59.9
Tate	25,370	35,836	31.0	64.0
Tunica	9,227	23,270	70.2	64.6
Warren	49,644	35,056	43.2	33.0
Washington	62,977	25,757	64.6	31.1

Notes: ^a Figures obtained from the U.S. Bureau of the Census (2000)

^b Obtained from random survey sample

however, is one of four states (along with Georgia, North Carolina, and South Carolina) which, combined, account for half of the rural African American population in the United States (Probst et al., 2004). Further, the Delta region has the highest concentration of rural African Americans within the state of Mississippi.

3.2. Data Collection

Between February and April of 2007, telephone surveys were conducted for 6,245 randomly selected households in the Mississippi Delta (see Figure 1). Surveys were conducted by the Survey Research Unit in the Social Science Research Center at Mississippi State University using a random digit dialing technique designed to reach unlisted as well as listed telephone numbers. The *effective* response rate was 69.2 percent after accounting for unassigned phone numbers and repeatedly unsuccessful call attempts.

With the exception of Issaquena County, all of the counties were fairly represented, with just over 400 respondents each. Issaquena is a small rural county with a population of only 2,274 as of the 2000 census (USBC, 2000). Thus, only 84 individuals from this county participated in the survey.

The items of interest for this analysis were only presented to those respondents who indicated that they had received health care outside of their county of residence within the previous 12 months, for a sample size of 2,603 (see Table 1). These respondents were asked to indicate their level of agreement, on a scale of one to four (1: strongly disagree; 4: strongly agree), with five statements. I or my family seek healthcare away from where we live because: 1) it is more convenient; 2) the quality of care is better; 3) we are more familiar with the services there; 4) it costs less; and 5) the same care is not locally available.

One-way analysis of variance was performed to identify means varying significantly among Delta counties. Post hoc procedures were employed to determine which counties had significantly differing means; Dunnett's procedure was used due to inequality of variance (Ott and Longnecker, 2001).

4. ANALYSIS AND FINDINGS

Table 2 summarizes the results of a one-way analysis of variance (ANOVA) conducted to test the significance of differences in mean agreement levels with each of the five reasons for seeking out-of-county health care among respondents from the 16 study counties. Significant differences were identified with regard to each of these potential reasons and are reported in individual tables.

TABLE 2. ANOVA Results for Reasons for Leaving County for Care for 16 Counties

Variable	Sum of Squares	Degrees of Freedom	Mean Square	<i>F</i>	Sig.
Convenience	17.51	15	1.167	2.54	$P = 0.001$
Quality	16.03	15	1.069	2.55	$P = 0.001$
Familiarity	25.55	15	1.703	4.08	$P < 0.001$
Cost	12.69	15	0.846	2.44	$P = 0.002$
Availability	18.13	15	1.208	2.52	$P = 0.001$

TABLE 3. Differences in Agreement with Quality as a Reason for Seeking Out-of-County Care among Delta Counties

County	n	Mean*	Standard Deviation
Bolivar ^a	107	2.92	0.62
Carroll ^b	242	2.96	0.56
Coahoma ^c	114	3.04	0.70
Holmes ^d	149	2.89	0.61
Humphreys ^e	157	3.07	0.62
Issaquena ^f	48	3.08	0.71
Leflore ^g	87	2.91	0.71
Panola ^h	193	3.07 ^m	0.66
Quitman ⁱ	198	2.95	0.52
Sharkey ^j	224	3.00	0.64
Sunflower ^k	160	3.04	0.76
Tallahatchie ^l	184	3.03	0.58
Tate ^m	207	2.82 ^h	0.74
Tunica ⁿ	204	2.88	0.61
Warren ^o	116	3.09	0.71
Washington ^p	105	3.00	0.75

Notes: The different superscripts denote significant differences between counties at the $p \leq 0.001$ level.

* Higher means indicate higher levels of agreement with quality as a reason for seeking out-of-county care.

Mean agreement levels for the quality variable were fairly high for all counties, with means ranging from 2.82 to 3.09, on a scale of one to four, with four indicating the highest level of agreement (see Table 3). This indicates that quality was a concern for respondents, and was one of their reasons for choosing out-of-county care. Only two counties had means which were significantly different from one another ($F_{df=15, 2479} = 2.55$; $P \leq 0.01$). Specifically, agreement was significantly lower in Tate County ($\bar{x} = 2.82$) than in Panola County ($\bar{x} = 3.07$), indicating that quality was of significantly greater concern in Panola County than in Tate County.

Availability was also a highly agreed-upon reason for leaving the county of residence for health care throughout the 16 study counties (see Table 4). Means ranged from 2.81 to 3.31, with significant differences between only two counties ($F_{df=15, 2510} = 2.52$; $P \leq 0.01$). Respondents from Issaquena County ($\bar{x} = 3.31$) displayed significantly higher levels of agreement with availability as a reason for seeking out-of-county care than did respondents from Warren County ($\bar{x} = 2.81$).

Familiarity was a less salient concern for the 16 study counties overall than quality and availability, with mean agreement levels ranging from 2.52 to 2.92 (see Table 5). Several counties, however, displayed highly significant differences in mean agreement levels ($F_{df=15, 2531} = 4.08$; $P \leq 0.001$). Agreement was significantly higher in Carroll County ($\bar{x} = 2.84$) than in Bolivar ($\bar{x} = 2.57$), Coahoma ($\bar{x} = 2.52$), Humphreys ($\bar{x} = 2.58$), Leflore ($\bar{x} = 2.52$), and Warren ($\bar{x} = 2.58$) Counties. Agreement was also significantly higher in Issaquena ($\bar{x} = 2.92$), Quitman ($\bar{x} = 2.78$), and Tallahatchie ($\bar{x} = 2.80$) Counties than in Coahoma County ($\bar{x} = 2.52$). Thus, familiarity was of greatest concern for respondents in Carroll, Issaquena, Quitman, and Tallahatchie Counties.

TABLE 4. Differences in Agreement with Availability as a Reason for Seeking Out-of-County Care among Delta Counties

County	n	Mean*	Standard Deviation
Bolivar ^a	110	3.06	0.72
Carroll ^b	255	3.09	0.62
Coahoma ^c	113	3.12	0.73
Holmes ^d	154	2.95	0.67
Humphreys ^e	158	3.04	0.74
Issaquena ^f	51	3.31 ^o	0.71
Leflore ^g	89	2.94	0.66
Panola ^h	194	3.07	0.73
Quitman ⁱ	197	2.95	0.61
Sharkey ^j	229	2.97	0.68
Sunflower ^k	163	3.09	0.81
Tallahatchie ^l	184	3.09	0.60
Tate ^m	207	2.96	0.68
Tunica ⁿ	200	3.05	0.68
Warren ^o	115	2.81 ^f	0.77
Washington ^p	107	2.97	0.77

Notes: Different superscripts indicate significant differences between counties at the $p \leq 0.001$ level.

* Higher means indicate higher levels of agreement with availability as a reason for seeking out-of-county care.

TABLE 5. Differences in Agreement with Familiarity as a Reason for Seeking Out-of-County Care among Delta Counties

County	n	Mean*	Standard Deviation
Bolivar ^a	109	2.57 ^b	0.69
Carroll ^b	254	2.84 ^{acego}	0.54
Coahoma ^c	116	2.52 ^{bfil}	0.68
Holmes ^d	152	2.62	0.64
Humphreys ^e	159	2.58 ^b	0.64
Issaquena ^f	50	2.92 ^c	0.63
Leflore ^g	90	2.52 ^b	0.64
Panola ^h	194	2.74	0.68
Quitman ⁱ	204	2.78 ^c	0.56
Sharkey ^j	229	2.70	0.64
Sunflower ^k	162	2.78	0.73
Tallahatchie ^l	188	2.80 ^c	0.61
Tate ^m	213	2.69	0.68
Tunica ⁿ	202	2.69	0.64
Warren ^o	118	2.58 ^b	0.70
Washington ^p	107	2.70	0.72

Notes: Different superscripts indicate significant differences between counties at the $p \leq 0.001$ level.

* Higher means indicate higher levels of agreement with familiarity as a reason for seeking out-of-county care.

TABLE 6. Differences in Agreement with Convenience as a Reason for Seeking Out-of-County Care among Delta Counties

County	n	Mean*	Standard Deviation
Bolivar ^a	114	2.32	0.73
Carroll ^b	254	2.50	0.67
Coahoma ^c	118	2.27 ⁱ	0.59
Holmes ^d	153	2.37	0.58
Humphreys ^e	161	2.33	0.62
Issaquena ^f	51	2.69 ^c	0.71
Leflore ^g	91	2.41	0.63
Panola ^h	198	2.40	0.73
Quitman ⁱ	205	2.45	0.62
Sharkey ^j	227	2.41	0.66
Sunflower ^k	165	2.52	0.73
Tallahatchie ^l	190	2.46	0.66
Tate ^m	217	2.37	0.71
Tunica ⁿ	206	2.50	0.71
Warren ^o	117	2.32	0.75
Washington ^p	108	2.30	0.75

Notes: Different superscripts indicate significant differences between counties at the $p \leq 0.001$ level.

* Higher means indicate higher levels of agreement with convenience as a reason for seeking out-of-county care.

Mean levels of agreement for the convenience variable were relatively low overall, with means ranging from 2.27 to 2.69 (see Table 6). Agreement was, however, significantly different between Issaquena ($\bar{x} = 2.69$) and Coahoma ($\bar{x} = 2.27$) Counties ($F_{df=15, 2559} = 2.54$; $P \leq 0.01$), meaning that convenience was of greater importance to respondents from Issaquena County in their decisions to seek care outside their county of residence.

The cost variable received the lowest levels of agreement overall of the five reasons (see Table 7). Means ranged from 2.10 to 2.44. Agreement did vary significantly between several counties ($F_{df=15, 2056} = 2.44$; $P \leq 0.01$), however. Agreement was significantly lower in Humphreys County ($\bar{x} = 2.10$) than in Bolivar ($\bar{x} = 2.44$), Panola ($\bar{x} = 2.32$), Quitman ($\bar{x} = 2.37$), and Sharkey ($\bar{x} = 2.30$) Counties. Thus, cost was of greater concern and consequence to respondents from these latter counties than it was to Humphreys County respondents. It is important to note, also, that this variable elicited the fewest responses, possibly indicating that respondents were uncomfortable discussing issues related to health care costs.

5. DISCUSSION AND CONCLUSIONS

Findings of the present analysis provide insights for county-level practitioners in their efforts to determine immediate and long-term local priorities. For instance, while improving the overall quality of health care should be a major concern throughout the Delta, it is especially important in Panola County. Likewise, while the Delta region suffers from a general lack of availability (as evidenced by availability scores, all of which indicated some level of agreement with this factor as a reason for seeking out-of-county care), this concern is particularly prevalent in Issaquena

TABLE 7. Differences in Agreement with Cost as a Reason for Seeking Out-of-County Care among Delta Counties

County	n	Mean*	Standard Deviation
Bolivar ^a	98	2.44 ^e	0.63
Carroll ^b	185	2.21	0.49
Coahoma ^c	99	2.21	0.59
Holmes ^d	118	2.25	0.55
Humphreys ^e	112	2.10 ^{ahij}	0.40
Issaquena ^f	47	2.34	0.67
Leflore ^g	83	2.19	0.48
Panola ^h	157	2.32 ^e	0.61
Quitman ⁱ	164	2.37 ^e	0.60
Sharkey ^j	198	2.30 ^e	0.55
Sunflower ^k	141	2.26	0.59
Tallahatchie ^l	134	2.21	0.55
Tate ^m	167	2.21	0.61
Tunica ⁿ	160	2.33	0.69
Warren ^o	111	2.36	0.71
Washington ^p	98	2.33	0.67

Notes: Different superscripts indicate significant differences between counties at the $p \leq 0.01$ level.

* Higher means indicate higher levels of agreement with convenience as a reason for seeking out-of-county care.

County. Issaquena County respondents also left their county for care because out-of-county services were viewed as more familiar, as did respondents from Carroll, Quitman, and Tallahatchie Counties. Convenience was a significant concern for Issaquena County respondents, specifically in relation to Coahoma County respondents, for whom it was significantly less important. Finally, cost was seen as the least prominent reason for use of out-of-county care throughout the study region, though respondents in Bolivar, Panola, Quitman, and Sharkey Counties expressed the highest levels of agreement with this concern.

Even where differences between counties were not significant, health care administrators can use county-level descriptive data to identify the most prevalent reasons for seeking out-of-county care among their county's respondents (see Table 8). Table 8 allows us to see even more clearly that availability is the greatest concern within the Delta region, as this variable had the highest mean agreement scores in 10 of the 16 counties. Quality was the greatest concern in four counties, whereas agreement levels were equal for quality and availability in both Panola and Quitman Counties. For none of the counties were familiarity, convenience, or cost among the top two concerns for respondents.

Documenting these differences is important because they indicate the need for various improvements, which may be facilitated through the adoption of several strategies. Concerns regarding overall quality, for example, may indicate a need for further education and training of staff and professionals. During training sessions, providers might be presented with tips and pointers for how to more successfully interact with patients, or they may learn about new advancements or discoveries in their particular fields. Incentives and accountability provide a system of checks and balances to ensure that providers are caring for the whole patient. This

may include the use of a comment or suggestion box, where patients can express their thoughts about the care they've received and the ways it might be improved.

Insufficient availability of medical care may, in some instances, be rectified through grants and other funding sources. Awarded funds could be applied toward the purchase of new, technologically advanced equipment, or to the hiring of additional staff. Because it is often difficult to attract qualified health care personnel to rural and impoverished areas, administrators may need to explore possibilities for recruitment and retention efforts, such as school loan forgiveness/repayment in return for a set term of service in the county. Promoting little-known local amenities may also draw providers into the county.

Some of the Delta counties (i.e. Issaquena), however, are particularly small and lack the population base to support expanded facilities and services. In such cases, a reliable transportation service to the nearest facility may provide a feasible solution to concerns regarding availability of care. In larger counties, where facilities exist but do not provide the types of service sought by local residents, administrators may consider reconfiguring their service offerings. Cordes et al. (1999) determined, for example, that some rural hospitals benefit financially from a shift away from more acute or inpatient services and toward more outpatient and long-term services. This may be a viable option for hospitals in counties where these types of services are in high demand.

In addition to increasing awareness among potential health care personnel, it may be necessary to increase awareness among local residents regarding the services provided within the county. Marketing these services to potential clients may aid in overcoming problems of unfamiliarity. Similarly, making these services more convenient is likely to attract more local residents. This may require an expansion in hours of operation, or a hospital transportation service.

TABLE 8. Mean Scores for Each Reason by County

County	Quality	Availability	Familiarity	Convenience	Cost
Bolivar	2.92	3.06*	2.57	2.32	2.44
Carroll	2.96	3.09*	2.84	2.50	2.21
Coahoma	3.04	3.12*	2.52	2.27	2.21
Holmes	2.89	2.95*	2.62	2.37	2.25
Humphreys	3.07*	3.04	2.58	2.33	2.10
Issaquena	3.08	3.31*	2.92	2.69	2.34
Leflore	2.91	2.94*	2.52	2.41	2.19
Panola	3.07*	3.07*	2.74	2.40	2.32
Quitman	2.95*	2.95*	2.78	2.45	2.37
Sharkey	3.00*	2.97	2.70	2.41	2.30
Sunflower	3.04	3.09*	2.78	2.52	2.26
Tallahatchie	3.03	3.09*	2.80	2.46	2.21
Tate	2.82	2.96*	2.69	2.37	2.21
Tunica	2.88	3.05*	2.69	2.50	2.33
Warren	3.09*	2.81	2.58	2.32	2.36
Washington	3.00*	2.97	2.70	2.30	2.33

* Indicates most highly agreed upon reason for seeking out-of-county care for respondents from each county

Cost concerns may be addressed at the local level through the institution of sliding-fee scales, which adjust health care costs based on income. Flexible payment options may also diminish the impact of cost constraints.

The differences uncovered through this analysis also hold implications for project-funding decisions by helping to identify the Delta counties that most greatly need improvement with regard to each of the variables explored. Thus, rather than simply funding Delta-wide initiatives as funding agencies frequently have, specific programs and resources may be tailored in such a way as to maximally impact the areas of greatest need within the region. The items mentioned above are just a few potential avenues for improvement which hospital administrators may consider as they attempt to better serve local populations and improve the profitability of their health care facilities. Some of the suggestions will be more or less feasible depending on county and population characteristics, as well as available resources. Still, they serve as a jumping off point for care providers and hospital administrators.

Administrators interested in enacting the preceding suggestions may benefit from the example provided by the Delta Area Health Education Center (AHEC), an organization designed to improve access to health care and overall health status for residents of the Arkansas Delta through recruitment and retention efforts, professional education, and public health education (see the Delta AHEC website, <<http://www.uams.edu/deltaahec/>>). The program website provides useful tools and resources for getting started, and also serves as a template from which a program focused on the Mississippi Delta region might be fashioned.

5.1. Limitations and Implications for Future Research

While the above findings offer insight into some of the reasons why Delta residents may leave their home county for health care, they also reveal the need for further research into this area of study within the Delta. Future analysis should, for instance, involve a wider range of quality indicators than the limited number used here. For example, the present study does not include specific information about the relationship between the patient and the health care provider, which is a component of health care quality (Atkinson and Haran, 2005). This relationship is often based on the provider's conduct and practices, including patient reception and follow-up (Baltussen et al., 2002); technical proficiency of physicians and other medical staff (Haddad, Fournier, and Yatar, 1998); and various non-cognitive traits such as bedside manner, open communication (Noorali, Luby, and Rahbar, 1999; Atkinson and Haran, 2005), compassion, respect, honesty (Baltussen et al., 2002), reliability, and responsibility (Davis et al., 2007). This dimension could be fleshed out for a deeper understanding of the myriad of factors that contribute to facility use choices.

Findings also point toward future research opportunities geared toward a more thorough examination of attitudinal differences that exist between those who leave their county of residence for care and those who do not. Namely, questions regarding these attitudinal variables should be addressed to all survey respondents, rather than just to those who indicated having received care outside their county of residence. It is equally important to know why those who sought care *within* their home county made that choice. An important variable to consider in addressing this question is the type of service sought by respondents. The data did not allow for analysis of this variable for the present study, but improvements in survey design would facilitate a better understanding of this dimension of service provision.

Finally, while we can see from the above findings that health facility use choices vary significantly among Delta counties, it is important to examine more deeply the potential *underlying* reasons for these differences. Possible variables of interest include funding decisions, policy measures, and facility resources. While future studies would benefit from the above suggestions, the present study does, nonetheless, contribute to the academic literature on rural health provision by exploring the patterns evident in the Mississippi Delta region, in addition to suggesting practical applications for both health care administrators and care providers.

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