

THE RELATIONSHIP BETWEEN POPULATION CHARACTERISTICS AND COMMUNITY
BENEFIT OF MICHIGAN CRITICAL ACCESS HOSPITALS

CRITICAL ACCESS HOSPITAL: POPULATION CHARACTERISTICS EFFECT ON
COMMUNITY BENEFIT

Catherine Vyskocil-Maxwell

A journal article compilation submitted in partial fulfillment of
the requirements for the degree of
Doctor of Health Administration

School of Health Sciences

Central Michigan University
Mount Pleasant, Michigan
February 2013

Accepted by the Faculty of the College of Graduate Studies,
Central Michigan University, in partial fulfillment of
the requirements for the doctoral degree

Dissertation Committee:

Nailya O. DeLellis, Ph.D.

Committee Chair

Asa B. Wilson, DHA, Ph.D.

Faculty Member

Luiz Perez, MD

Faculty Member

February 21, 2013

Date of Defense

Roger Coles, Ed.D.

Dean
College of Graduate Studies

June 3, 2013

Approved by the
College of Graduate Studies

Copyright by
Catherine Vyskocil-Maxwell
2013

This study is dedicated to my family, especially my husband and sons, who have supported me during the pursuit of my doctoral degree.

ACKNOWLEDGEMENTS

I would like to thank my Chair, Dr. Nailya O. DeLellis for her assistance in helping me get to this point and my committee, Dr. Asa Wilson and Dr. Luis Perez for their assistance and guidance in helping me complete this study. With heartfelt gratitude, I would like to acknowledge my husband and children who stood beside me during the rough times as well as good times. This dissertation would not be possible without their continued support. I also extend an expression of gratitude to the community of workers and volunteers, along with the generous philanthropists who serve the less fortunate among us. I celebrate their passion and drive in assuring that the most vulnerable are afforded the same healthcare opportunities as those who have mainstream healthcare coverage.

Lastly, I salute those among the greatly underserved indigent populations who exhibit their true desire to become productive members of society, despite their dire circumstances.

TABLE OF CONTENTS

LIST OF TABLES	vii
LIST OF FIGURES.....	viii
ABBREVIATIONS	ix
MANUSCRIPT	
I. THE RELATIONSHIP BETWEEN POPULATION CHARACTERISTICS AND COMMUNITY BENEFIT OF MICHIGAN CRITICAL ACCESS HOSPITALS	1
Introduction	3
Community Benefit.....	3
Critical Access Hospitals.....	4
Population Characteristics	6
Purpose.....	8
Methods/Measures.....	9
Results	10
Discussion.....	12
Conclusion	15
References	20
II. CASE STUDY - CRITICAL ACCESS HOSPITAL: POPULATION CHARACTERISTICS EFFECT ON COMMUNITY BENEFIT	23
Background.....	25
Conclusion	26
References	28
III. APPENDICES	29

LIST OF TABLES

TABLE	PAGE
1. Abbreviations	ix
2. Descriptive Statistics for Population Characteristics and Community Benefit Provided by CAH (n=31), Michigan 2010	17
3. Correlation Between Community Benefit Per Capita and Selected Population Characteristics by CAH (n=31), Michigan 2010.....	18
4. Correlation Between Total Community Benefit and Selected Population Characteristics by CAH (n=31), Michigan 2010.....	19

LIST OF FIGURES

FIGURE	PAGE
1. Andersen's Model of Behavioral Health Utilization	7
2. Conceptual Model: The Relationship Between Population Characteristics and The Amount of Community Benefit.....	9

ABBREVIATIONS

Table 1. Abbreviations

Abbreviation	Name
ACA	The Patient Protection and Affordable Care Act
AHA	American Hospital Association
BBA	The Balanced Budget Act
CAH	Critical Access Hospital
CEO	Chief Executive Officer
CHNA	Community Health Needs Assessment
CMS	Centers for Medicare and Medicaid Services
COBRA	Consolidate Omnibus Budget Reconciliation Act
EMTALA	Emergency Medical Treatment and Labor Act
ER	Emergency room
GNP	Gross National Product
HCA	Hospital Corporation America
IRS	Internal Revenue Services
MHA	Michigan Hospital Association
PPS	Prospective Payment System
SCHIP	Medicaid and State Children Health Insurance Programs

MANUSCRIPT I

THE RELATIONSHIP BETWEEN POPULATION CHARACTERISTICS AND COMMUNITY BENEFIT OF MICHIGAN CRITICAL ACCESS HOSPITALS

Abstract

Background: Tax-exempt charitable organizations are now required to expand community benefit reporting with the ratification of The Patient Protection and Affordable Care Act (ACA) of 2010. The new law sanctioned the improvement of access to healthcare for the general public. As a result, hospitals will be obligated to provide detailed accountability for community benefit to maintain tax-exempt status.

Purpose: This article examines the relationship between community benefit per capita and characteristics of the population served by Michigan Critical Access Hospitals (CAHs).

Methodology/Approach: This study used secondary data on population characteristics derived from Andersen's (1968) behavioral model of health services utilization and community benefit per capita provided by Michigan's CAHs (n=31). Cross-sectional county-level data was utilized for a correlation analysis.

Findings: Five of seven hypotheses for this study were not supported. A positive correlation between two population characteristics, income ($r = -0.341$, $p\text{-value} = 0.008$) and county health ranking ($r = 0.210$, $p\text{-value} = .099$), and community benefit per capita for CAHs were statistically significant.

Conclusion: The findings of this study revealed partial support for a relationship between population characteristics according to Andersen's model, and levels of community benefit per capita provided by CAHs. Future research should focus on the

relationship of a hospital's financial status and community benefit provided per capita. In addition, the size of the sample should be increased in future studies.

Introduction

The amount of community benefit provided by Critical Access Hospitals (CAHs) has become an important issue for healthcare in recent years. The Patient Protection and Affordable Care Act (ACA) of 2010 require tax-exempt charitable organizations, including CAHs, to expand community benefit reporting methods (Martin, 2013). Community benefit requirements for tax-exempt organizations, prior to the ACA, were not clearly defined (Martin, 2013). The guidelines that were used included a provision that hospitals must treat the uninsured and maintain a 24 hours, 7-days a week Emergency Department (Sandrick, 2006). Charity care, a component of community benefit, combines all cost and write offs, related to an individual's inability to pay for hospital services. Write offs, within charity care, includes bad debt (charges not collected from individuals who have the ability to pay), contractual allowances (the amount in dollars collected opposed to what has been billed), and indigent care (uncollected cost from uninsured or underinsured individuals) ("Hospital charity care," 2005).

Charity care, as a component of community benefit, is becoming a state and national concern, particularly as hospitals face financial challenges. For example, a 2004 study estimated that hospital charity care totaled 23.6 billion dollars (Hadley & Holahan, 2004). The amount is much higher today ("Uncompensated hospital care," 2012)

Community Benefit

Healthcare reform became a reality on March 23, 2010, when President Obama signed the ACA. Community benefit will become aligned with the implementation of

ACA. Improving population health as a part of community benefit will become a focus for healthcare systems. Title IX, Paragraph 9007 of the ACA outlines the expanded requirements for community benefit for charitable hospitals. For example the requirements have four general categories: 1) adopt and implement written financial assistance and emergency medical care policies; 2) limit charges for emergency and routine medical care; 3) comply with new billing and collection restrictions, and; 4) conduct a Community Health Needs Assessment (CHNA) once every three years (Martin, 2013). The new guidelines will impose consistency and continuity for community benefit reporting requirements.

The CHNA completion confirmation is required from the tax-exempt organizations filing Form 990 and Schedule H. Failure to meet the completion process will result in a monetary fine of \$50,000 and the potential loss of tax-exempt status. Failure to demonstrate an appropriate amount of community benefit, while stating provision of charity care as adequate and acceptable, may also lead to the loss of tax-exempt status. Such was demonstrated in the Provena Hospital vs. Illinois Department of Revenue case (Martin, 2013),

Critical Access Hospitals

Critical Access Hospitals (CAHs) are located in rural areas and must meet specific criteria developed by the federal Centers for Medicare and Medicaid Services (CMS) including:

- Be located in a state that conforms with the CMS as a Medicare Rural Hospital Flexibility Program
- Participate with Medicare as a rural public, non-profit, or for-profit entity

- Be located in a rural community, or have status as an essential or frontier provider
- Be located 35 road miles from another hospital or 15 miles if terrain is mountainous with or without secondary roads
- Is limited in bed size to no more than 25
- Has an annual length of stay that averages 96 hours or less per acute inpatient stay
- Have 24-hour emergency services seven days a week with medical staff on-site, on-call or available within 30 minutes with an allowance of 60 minutes within frontier terrain
- And conform to the Emergency Medical Treatment and Labor Act (EMTALA) (Health Plans, 2011).

Currently, in 46 of 50 states, there are 1302 CAHs, 96% of which are non-profit (American Hospital Association, 2010). The state of Michigan has 36 CAHs of which the majority are located in small, rural communities ("Michigan center for," 2012). The current reimbursement from Medicare to Critical Access Hospitals (CAHs) for inpatient, outpatient, and covered skilled nursing facility services is 101% of allowable costs for Medicare beneficiaries. Cost-based reimbursement for CAHs was established by the Balanced Budget Act (BBA) of 1997 (AHA, 2012), in an attempt to secure the financial stability of hospitals.

Population Characteristics

The utilization of healthcare services fluctuates by families. A study conducted by Andersen (1968) indicated that 8% families accounted for 36% of total family expenditures for healthcare. According to Andersen's (1968) behavioral model of health services utilization, there are three groups of factors that motivate a person's decision to utilize healthcare services: *predisposing*, *enabling* and *needs* factors (See Figure 1). Each factor has several components which determine the utilization of healthcare (Andersen, 1968).

The *predisposing* factor is related to family composition, family social structure, and family health beliefs. Family composition is represented by age, gender, marital status of the head of household, family size, the youngest family member, and the age of the oldest family member. The social structure includes employment, social class, the occupation and education of the head of household, and their race and ethnicity. Health beliefs might include religious or personal beliefs regarding medical care, physicians, and treatment of diseases.

The *enabling* factor includes family resources such as income, savings, the ability and scope of the health insurance, whether or not there is a consistent provider and what welfare care is available and/or used. Another component of the enabling factor involves the availability of healthcare, including measures such as the availability of physicians, physician-population ratio, and hospital bed-population ratio.

The *needs* factor includes illness and the family's response to family health symptoms, disability days and the availability of free care for major diseases. Another

component of the needs factor is the response to health issues including provider visits and regular physical examinations (Veeder, 1975).

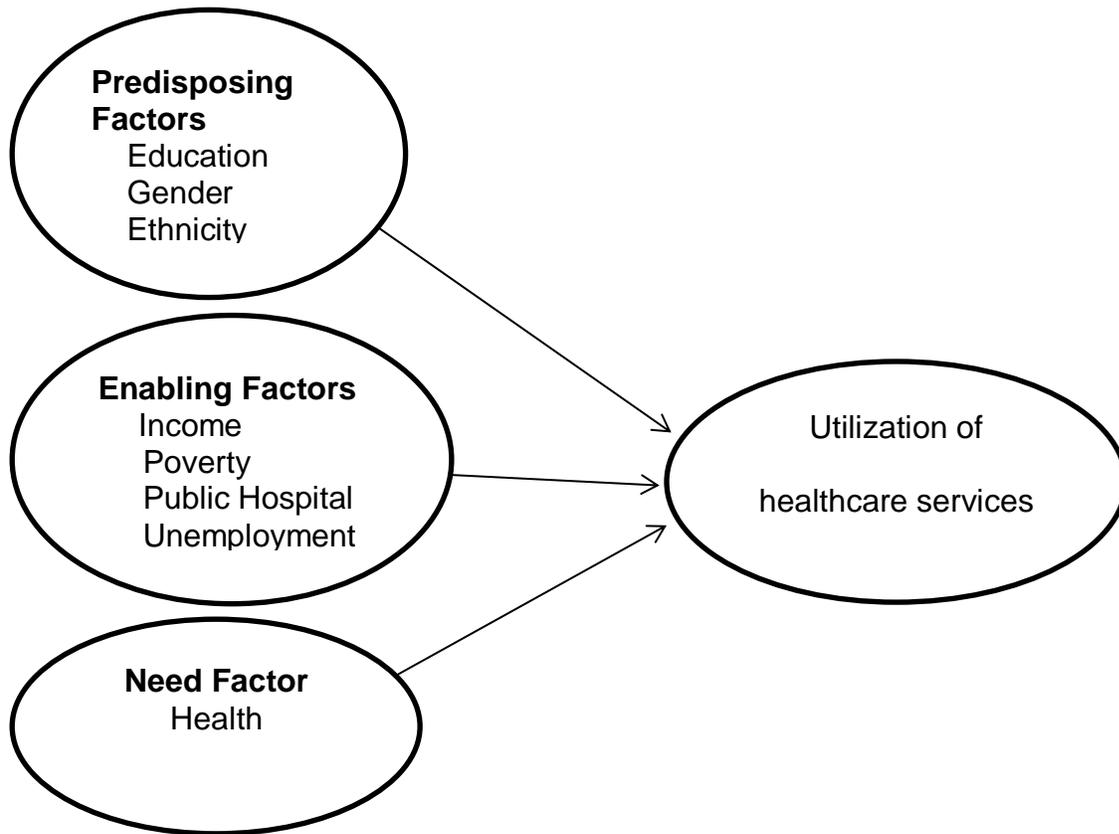


Figure 1. Andersen's Model of Behavioral Health Utilization

The original Andersen's model was tested and supported at the individual patient level in studies of mental health (Schomerus, Appel, Meffert, Lupp, Andersen, Grabe and Baumeister, 2012; Banta, James, Haviland & Andersen, 2013), women's health (Hogan, Amamoo, Anderson, Webb, Mathews, Rowley & Culhane, 2012; Vyas, Madhavan, LeMasters, Astkins, Gainor, Kennedy, Kelly, Vona-Davis & Remick, 2012), clinical care (Guilcher, Craven, McColl, Lemieux-Charles, Casciaro & Jaglal, 2012),

long-term (Dobbs, Meng, Hyer & Volicer, 2012), and other healthcare areas (Babitsch, Gohl, & von Legerke, 2012).

This study posits that the same factors will drive health services utilization measured at the community level. In other words, if health insurance is a defining factor of health services utilization at the individual level, the percentage of population with health insurance will also be a defining factor at the community level.

Purpose

The purpose of this study was to determine if there is a relationship between community benefit per capita provided by CAHs and various population characteristics (demographic and socio-economic factors). Anderson's behavioral model of health services utilization and previous research based on the model were used to define the population characteristics employed in this study. Figure 2 depicts the conceptual framework for the study.

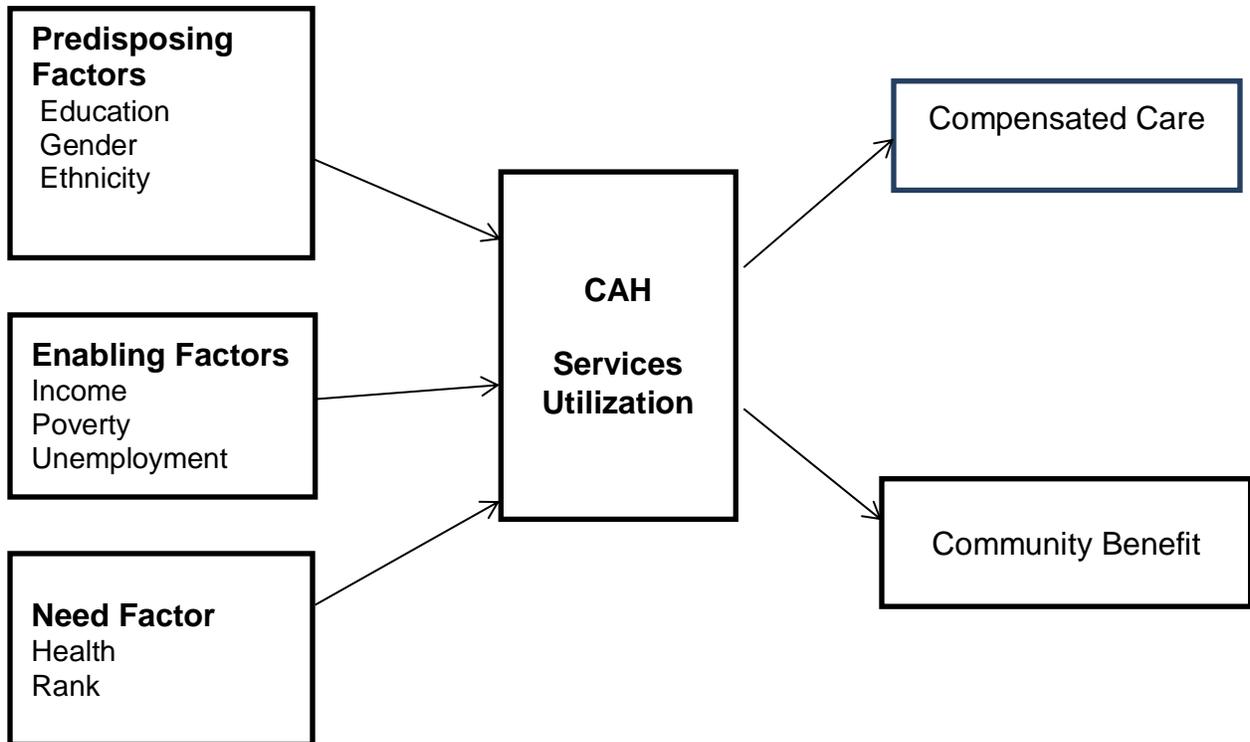


Figure 2. Conceptual Model: The Relationship Between Population Characteristics and the Amount of Community Benefit.

Methods/Measures

This study utilized secondary data collected by GuideStar from CAH tax returns, specifically Form 990 and Schedule H. These forms specify community benefit for non-profit organizations including CAHs for the year ending in 2010. In addition, data was retrieved from the Flex Monitoring Team identifying the CAH status and bed size ("CAH information," 2012). The population demographic and socio-economic characteristics data at the county level was obtained from the United States Census Bureau. The health ranking for the counties served by CAHs was obtained from the University of Wisconsin Population Health Institute database. The ranking method includes the utilization of measures at the county level from a diverse source of local, state and

national data. The University standardized the measures and then weighed and balanced them to determine the health ranking ("County health rankings," 2011). There are of 36 CAHs in the state of Michigan. Thirty-one of them were used as the sample for this study because not all CAHs completed Form 990 and Schedule H. The population served was defined as the county in which the CAHs was located. According to Dartmouth Atlas of Health Care (1999), the utilization of healthcare is concentrated to the individual's residence, with Medicare hospitalizations occurring locally at a rate of 85% ("Appendix on geography," 1999).

The dependent variable of CAHs community benefit per capita was examined to ascertain a potential relationship with seven population characteristics. Variables representing the population characteristics were defined with Andersen's healthcare utilization model as predisposing, enabling and need factors. The predisposing factors included a percentage of: a) the population served with a high school education who were 25 years old or older; b) females of the population served; c) the population that was White, African American, American Indian/Alaskan Native, Asian, Native Hawaiian/Pacific Islander, other, and two or more races. The enabling factors for this study included: a) median income level; b) a percentage of the individuals within the poverty level with a greater than or equal to 200% of the poverty guidelines; and, c) a percentage of the population employed. The need factor was represented by the health ranking of the population for each county.

Results

Table 2 is a descriptive summary of the characteristics of CAHs and the population served. Predisposing population characteristics were education, gender and

ethnicity. Enabling characteristics were income, poverty and employment. The need characteristic was health ranking of the county. In order to test the hypotheses of the relationship between community benefit per capita and various population characteristics, a correlation analysis was performed. Due to a low number of observations, a correlation analysis using Kendall's tau b was conducted to assess the relationship for each the hypotheses. The Kendall's tau b, a ranking non-parametric and stricter correlation test, is preferable for small samples. It also allows for a distraction free test of independence and a measure of strength of dependence between two variables (Field, 2009).

The question of interest for this study was is there a relationship between community benefit per capita and population characteristics utilizing predisposing, enabling and need factors? Two separate analyses, community benefit per capita and selected population characteristics; and total community benefit and selected population characteristics were performed (see Table 3 and 4).

The hypotheses of the predisposing factors affecting the amount of community benefit per capita were rejected. The correlation coefficients between the levels of education ($r = 0.119$, p -value, = 0.349), percent of females ($r = -0.28$, p -value = 0.825). and community benefit per capita provided by CAHs were not statistically significant. The correlation between percentage of specific ethnicity and community benefit per capita was not significant. Statistically significant was the White ($r = 0.050$, p -value= 0.695), there was a moderate correlation for African American ($r = -0.436$, p -value= 0.001) and American Indian/Alaskan Native ($r = .397$, p -value= .002).

Of the enabling factors three hypotheses one yielded a statistically significant result. The correlation between median income and community benefit per capita demonstrated expected direction ($r = -0.341$, $p\text{-value} = 0.008$), and was the only hypotheses among enabling factors that was supported.

The need factor hypothesis stating the relationship between health status of the population and community benefit per capita was supported. County health ranking was used as a proxy for the county population health status. The correlation between the community benefit per capita and the health ranking was weak ($r = .210$, $p\text{-value} = .099$) and borderline statistically significant, indicating higher per capita community benefits in counties with lower health status

Discussion

Correlation between population characteristics and community benefit per capita, using Andersen's behavioral model of health services utilization, revealed a complex relationship. While five of the seven hypotheses were not supported in the study, it is important to mention that this outcome maybe the result of a small sample size (31 CAHs). However, the expanding of the sample was not an option because the number of CAHs in Michigan is fixed. Also, small variability of population characteristics due to a rather homogeneous population in Michigan may affect the magnitude of correlation coefficients found in the study.

Of the variables used in this study, only median income of a county and health ranking demonstrated an expected relationship with CAHs' community benefit. While it is possible that the absence of statistically significant correlations with other variables may be explained by the small sample size, one may argue that overall income may

represent a number of factors related to need in community benefit. For example, on an individual level, it may be associated with employment, age, poverty, and access to healthcare resources, and thereby, fully represent the enabling factor of the model as well as be correlated with some measures of the predisposing factors. Low socioeconomic status is known to be associated with lower health (Vogtmann, Shanmugam, Katkoori, Waterbor & Manne, 2013; Van Den Eeden, Ferrara, Shan, Jacobsen, Quinn, Haque & Quesenberry, 2013).

Positive correlation between the health ranking of a county and CAHs' community benefit per capita, supported by the findings, reflect the relationship between the need for healthcare services and resources available for the population. Lower position of a county in the health ranking, indicates lower health status of the county population, compared to other counties. Since county health rank is defined by a number of parameters, based on a multitude of health outcomes such as mortality, morbidity, health behavior, clinical care, social and economic factors ("County health rankings," 2011), one may argue that it already includes some factors of Andersen's model.

Although a majority of the null hypotheses were not supported, the link between health ranking and community benefit per capita showed a higher need for community benefits in counties with higher health ranking. The results suggested that CAHs located in a county with a lower health ranking, number one, would provide lower community benefit per capita.

This study was not able to demonstrate a clear relationship between population characteristics and CAHs community benefit per capita for five of seven hypotheses.

These results may have a number of policy and administrative implications. For example, Chief Executive Officers' (CEOs) should focus on the tax-exempt requirements, not to population characteristics of the community. The correlation between county health ranking and CAH community benefit per capita may support the requirements for CHNA as the health assessment maybe a contributor for determining needs for community benefit. Although this study did not focus on the financial aspects of the BBA, that provide 101% reimbursement of allowable costs for Medicare beneficiaries. The results of this study indicated the lack of support for the relationship between the population characteristics and CAHs community benefit per capita, supporting the provision for CAHs signifying that the BBA has worked for CAHs.

A number of limitations exist with this study. The major limitation was the size of the sample. Since the study focused on the State of Michigan, it was limited by the number of CAHs with available data on community benefit. A follow-up study with a larger sample of CAHs may be beneficial for further exploration of the relationship between community benefit and population characteristics. A larger sample would allow for an increase in the data collection per population characteristic and provide additional estimates of the relationship between dependent and independent variables. The second limitation is the problem of model specification. It is possible that some other variables that affect the utilization of community benefit in CAHs, such as community benefit offered by other healthcare providers, have been omitted since there is no available data from other providers. Lastly, as secondary data was utilized for this study, the control of the data collection was limited; however, the data was collected by

government agencies and an assumption is made that errors are insignificant and randomly distributed.

Conclusion

The findings from this study partially support two hypotheses based on Andersen's model and partially supported a relationship between population characteristics and levels of community benefit per capita provided by 31 Michigan CAHs. However, it is important to understand why there was limited support for the hypothesized relationship. The Balanced Budget Act (BBA) created CAHs to service the rural areas, support Medicare policy changes and relieve the national budget by decreasing payments to Medicare. CAHs were reimbursed at a rate of 101% of allowable costs to deliver healthcare to Medicare beneficiaries. One could argue that the provision of the BBA appears to enable CAHs to fulfill community benefit requirements. Michigan CAHs' CEOs, need to be observant regarding community benefit need and financial viability. This includes providing stewardship for finances for the CAHs.

Future research studies should include a study of how financial indicators correlate with community benefit per capita of CAHs. The utilization of a larger sample would add depth and breadth to the study. A larger study could be conducted by using the nine regions identified by the United States Department of Health and Human Services; Health and Services Administration (HRSA). Longitudinal studies are needed to track CAHs performance over a period of time. Future studies need to be inclusive of other states that are similar in characteristics to obtain a broader understanding of the problem. Implications of this study have the potential to affect future state and federal

policy decisions, similar to the federal legislative policy change for an organization to maintain tax-exempt state (Martin, 2013)

Expanding this study to include strategic planning for skilled nursing facilities that are associated with CAHs, population characteristics and the requirement of a CHNA would add to the existing literature on CAHs. This additional research would go hand-in-hand with changing population characteristics. It also has the ability to provide insight for the future of CAHs.

Surveys and face-to-face interviews with patients, CEOs, families, and legislators would offer vital components to research related to population characteristics and community benefit per capita for CAHs. It is also important to ascertain the impact of the Affordable Healthcare for America Act on CAHs.

Additional research could include an evaluation of the relationship between system-owned and independent CAHs with population characteristics and community benefit per capita for CAHs; a study of the relationship between skilled nursing facilities that are physically attached to critical access hospitals and population characteristic and community benefit per capita for CAHs. In addition, useful data can be obtained by examining the relationship between CAHs that directly employ physicians, population characteristics and community benefit per capita for CAHs. A study that separates health outcome factors and health services components of the county health ranking, and community benefit per capita for CAHs can broaden research findings. Lastly, another study could be conducted to compare the states with and without the CMS designation as a Medicare Rural Hospital Flexibility Program.

Table 2. Descriptive Statistics for Population Characteristics for Community Benefit Per Capita CAH (n=31), Michigan 2010

	Minimum	Maximum	Mean	Standard Deviation
Bed Size	8	25	23.89	4.18
Community Benefit per capita in dollars	\$57,440	\$535,528	\$218,911	\$13,5279
Percentage of individuals who are \geq 25 years old with a high school education	19.20	93.00	82.85	16.30
Percentage of females	.46	.51	.50	.012
Percentage of individuals with ethnicity-White (percentage)	.76	.98	.93	.05
Percentage of individuals with ethnicity-American Indian/Native Alaska (percentage)	.00	.06	.02	.02
Income in dollars	\$31,998	\$58,790	\$40,984	\$634
Percentage of individuals in poverty level \geq 200% or higher	8.40	22.30	14.76	3.51
Percentage of individuals employed	.13	.48	.40	.01
Rank of county health	5	79		

Table 3: Correlation Between Community Benefit Per Capita and Selected Population Characteristics by CAH (n=31), Michigan 2010.

Correlated variable	Community Benefit per capita, dollars (p-value)
Percent of people that are 25 years or older with a high school diploma	0.119 (0.349)
Percent of females	-0.028 (0 .825)
Percentage of people that are American Indian/Alaska Native	0.397 (0 .002)
Percentage of ethnicity that are white	0.050 (0 .695)
Percentage of African Americans	-0.436 (0 .001)
Median income in dollars	-0.341 (0.008)
Percent of the population that are at 200% or greater of the poverty level	0.098 (0 .444)
Percentage of people that are employed	0.155 (0 .231)
Health Ranking of the community	0.210 (0.099)

Table 4: Correlation Between Total Community Benefit and Selected Population Characteristics by CAH (n=31), Michigan 2010.

Correlated variable	Total Community Benefit, dollars r (p-value)
Number of people of that are 25 years or older with a high school diploma	0.154 (0.227)
Number of females	0.176 (0.168)
Number of people that are American Indian/Alaska Native	0.332 (0.009)
Number of ethnic that are White	0.176 (0.168)
Number of people that are African American	0.215 (0.092)
Median Income in dollars	0.267 (0.036)
Number of the population that are at 200% or greater of the poverty level	0.150 (0.240)
Number of people that are employed	0.104 (0.421)
Health Ranking of the community	-0.059 (0.646)

References

- American hospital association*. (2012). Retrieved from <http://www.aha.org/advocacy-issues/cah/history.shtml>
- Andersen, R. (1968). *A behavioral model of families use of health services*. Chicago, IL: Center for Health Administration Studies
- Appendix on geography of health care in the United States*. (n.d.). Retrieved from <http://www.dartmouthatlas.org/downloads/methods/geogappdx.pdf>
- Babitsch, B., Gohl, D., & von Legerke, T. (2012). Re-revisiting Andersen's Behavioral Model of Health Services Use: a systematic review of studies from 1998–2011. *GMS Psycho Social Medicine*, 9, 1-15.
- Banta, J.E., James, S., Haviland M.G., Andersen, R.M. (2013). Race/Ethnicity, parent-identified emotional difficulties, and mental health visits among California children. *Journal of Behavior Health Services and Research*, 40(1), 5-19.
- CAH information*. (n.d.). Retrieved from <http://www.flexmonitoring.org/cahlistRA.cgi?state=Michigan>
- Dobbs, D., Meng, H., Hyer, K., & Volicer, L. (2012). The influence of hospice use on nursing home and hospital use in assisted living among dual-eligible enrollees. *Journal of the American Medical Directors Association*, 13(2), 189-99.
- Field, A. (2009). *Discovering statistics using SPSS*. (3rd ed.). Los Angeles: Sage.

- Guilcher, S. J., Craven, B. C., McColl, M. A., Lemieux-Charles, L., Casciaro, T., & Jaglal, S. B. (2012). Application of the Andersen's health care utilization framework to secondary complications of spinal cord injury: a scoping review. *Disability and Rehabilitation, 34*(7), 531-541.
- Hadley, J., & Holahan, J. (2004). The cost of care for the uninsured: What do we spend, who pays, and what would full coverage add to medical spending: Kaiser <http://www.kff.org/uninsured/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=35965#search=%22hadley%20and%20%holahan%20>.
- Healthiest and least healthy counties ranked in every state.* (n.d.). Retrieved from <http://www.rwjf.org/en/about-rwjf/newsroom/newsroom-content/2012/04/healthiest-and-least-healthy-counties-ranked-in-every-state.html>
- Health plans and continuation of coverage-cobra.* (2011, September 26). Retrieved from <http://www.dol.gov/dol/topic/health-plans/cobra.htm>
- Hogan, V. K., Amamoo, M. A., Anderson, A. D., Webb, D., Mathews, L., Rowley, D., & Culhane, J. F. (2012). Barriers to women's participation in inter-conceptual care: a cross-sectional analysis. *BMC public health, 12*(1), 93.
- Hospital charity care in the United States issue overview.*(n.d.). Retrieved from <http://www.mffh.org/mm/files/HospitalCharityCareIssueBrief.pdf>
- Martin, M. (2013). Community benefit beyond health fairs and form 990. *Healthcare Finance Management, 67*(1) 84-90.
- Michigan center for rural health.*(n.d.). Retrieved from <http://www.mcrh.msu.edu>
- Sandrck, K. (2006). Defining and measuring community benefit. *Hospitals & Health Networks, 80*(11), 66.

- Schomerus, G., Appel, K., Meffert, P. J., Lupp, M., Andersen, R. M., Grabe, H. J., & Baumeister, S.E. (2012). Personality-related factors as predictors of help-seeking for depression: a population-based study applying the Behavioral Model of Health Services Use. *Social Psychiatry and Psychiatric Epidemiology*, 1-9
- Baumeister, S. E. (2012). Personality-related factors as predictors of help-seeking for depression: A population-based study applying the Behavioral Model of Health Services Use. *Social Psychiatry and Psychiatric Epidemiology*, 2012 Dec 25. [Epub ahead of print] , retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23266663>
- Uncompensated hospital care cost fact sheet.* (Jan, 2012). Retrieved from www.aha.org/content/12/11-uncompensated-care-fact-sheet.pdf
- Van Den Eeden, S.K., Ferrara, A., Shan, J., Jacobsen, S.J., Quinn, V.P., Haque, R. & Quesenberry, C. P. (2013). Impact of type 2 diabetes on lower urinary tract symptoms in men: a cohort study. *BMC Urology*, 13(1), (n.d.).
- Veeder, N. W. (1975). Health services utilization models of human services planning. *Journal of the American Institute of Planners*, 41(2), 101-109.
- Vogtmann, E., Shanmugam, C., Katkoo, V.R., Waterbor, J. & Manne, U. (2013). Socioeconomic status, p53 abnormalities, and colorectal cancer. *The World Journal of Gastrointestinal Oncology*, 4(1), 40-44.
- Vyas, A., Madhavan, S., LeMasters, T., Atkins, E., Gainor, S., Kennedy, S., Kelly, K., Davis, V. & Remick, S. (2012). Factors influencing adherence to mammography screening guidelines in appalachian women participating in a mobile mammography program. *Journal of Community Health*, 37(3), 632-646.

MANUSCRIPT II

CASE STUDY—CRITICAL ACCESS HOSPITAL: POPULATION CHARACTERISTICS EFFECT ON COMMUNITY BENEFIT

As a local business owner and former Critical Access Hospital (CAH) board member, Mr. Luke picks up his morning newspaper, reads the headlines, “.....city hospital closing after 50 years of operation....”, and begins to read the article. The article placed blame on the growing demands of uncompensated care, the expansion of required community benefit to maintain non-profit status, and the decreased reimbursements by insurance companies for the hospital closing. Mr. Luke reminisced about the years of wealth and prosperity the hospital had provided when it was viewed as a pillar of the community and a source for many well-paying professional and non-professional jobs. At one time the hospital had owned and operated thriving and profitable physician office practices, providing medical services throughout the county. Physician practices duplicated basic radiology and phlebotomy services, which were core to the CAH.

Mr. Luke was aware of the difference between community benefit, encompassing bad debt, charity care, contractual allowances, write offs, and indigent care (“Hospital charity care,” 2005). The local economy had been declining but no differently than in other parts of Michigan. Many factors contributed to a major change in the population characteristics of the community served by the hospital. Workforce reductions, closing of area businesses, and young families relocating for job opportunities, were just a few. The average income of many families declined as jobs faded and caused a rippling effect throughout the local economy. Not long ago, education was a priority for the community where graduating from high school was a major milestone for many people,

not just a step in the educational process. Obtaining a bachelor's degree seemed unreachable for many residents of the community because the money that would have been available for education was utilized for basic needs.

The population that remained employed experienced wage reductions, reduced hours and benefits. Health insurance premiums for the employed were steadily increasing along with deductibles and co-payments. Oftentimes, the cost of health insurance became unaffordable, leaving people with hard choices to make between basic necessities and insurance. Most often health insurance was not the focus in this scenario.

Mr. Luke noted in the article that emergency room visits increased. On the surface, this appeared as a positive change when in fact the increase was related to the lack of access. The emergency room became the primary care provider for the uninsured with chronic health conditions that appeared to be avoidable if the patient had been treated at the time of diagnosis. People without insurance did not see their doctor on a regular basis. When the time came for treatment, the recommended testing was not affordable.

In this scenario, the average age of the Michigan community was increasing just as it was throughout the state. Aging leads to complex health issues and needs for services, including those that are provided by CAHs. The complexity of the needs for this segment of the population strained existing programs to meet the needs of the elderly. Although foster care and assisted living facilities were expanded to potentially meet their needs, they were procuring the less complex patients, leaving CAHs to care for others.

The need for community benefit grew by double digits over the past five years. Was this growth caused by a population characteristics shift? Was this growth the primary reason for the potential closure of the CAH?

Background

This fictitious scenario could be applicable to a number of small, rural hospitals across the nation where every dollar counts. A CAH is defined by the government as a hospital with less than 25 beds. An inpatient stay at this type facility does not exceed 96 hours and is located a minimum of 35 miles from the next hospital, and offering 24 hours, 7 days a week emergency room care. In addition, it must be owned by a non-profit or public entity (AHA, 2012). The Balanced Budget Act of 1997 (BBA) provided funding for CAHs at 101% of allowable costs for most services for Medicare beneficiaries (AHA, 2012). Given the reimbursement level, the CAHs should be able to survive. The advent of healthcare reform causing apprehension for CAHs because it included a reduction in the rate of reimbursement.

Under new requirements within the Patient Protection and Affordable Care Act (ACA), tax-exempt hospitals will be required to expand community benefit. There are four general requirements: 1) adopt and implement written financial assistance and emergency medical care policies; 2) limit charges for emergency and routine medical care; 3) comply with new billing and collection restrictions; and 4) conduct a Community Health Needs Assessment (CHNA), once every three years (AHA, 2012). The CHNA expects strategic partners in the community to actively participate. An assessment summary from the CHNA will result in an action plan with implementation steps that address the findings (AHA, 2012).

With financial support from the BBA, is there a possibility that population characteristics may affect the amount of uncompensated care required and thereby, the financial position of a CAH? According to Anderson's (1968) behavioral model of health services utilization, population characteristics are defined in three broad factors: predisposing, enabling and health. The predisposing factor includes age, gender, marital status of the head of household and family size. The enabling factor is encompassed by employment, occupation, social class, education of the head of household, and race and ethnicity encompass the enabling factor. The health factor might include religious or personal beliefs regarding medical care, physician, and diseases (Andersen, 1968).

As the community changes, population characteristics such as unemployment rate, cost of living and other factors may have an influence on uncompensated healthcare. In the current economy, even a minor shift in resource allocation within CAHs may lead to financial instability.

Conclusion

Changing population characteristics in this fictitious community are being mirrored in many small rural communities throughout the United States today. Loss of jobs, an aging population, changing regulations and reimbursement by state and federal governments as well as insurance companies are placing unprecedented demands on the viability of CAHs. These CAHs have been cornerstones of their respective communities providing well-paying jobs, as well as the comfort of knowing that a CAH is close by; however, with the changes in the population characteristics of many of these communities, CAHs may become another memory of the past.

Discussion Questions:

1. How would you define community benefit in your community? Are there similarities with the scenario in this study?
2. The reporting requirements to maintain non-profit status includes the need to complete a community health needs assessment (CHNA). What is your opinion on the requirement of a CHNA?
3. This study reflects the fact that Critical Access Hospitals (CAHs) have funding from the Balanced Budget Act of 1997 at 101% of allowable costs for Medicare beneficiaries; yet, the CAH is closing and the focus of the closure points to the changing population characteristics of the community. Do you agree or disagree and why?
4. Andersen's behavioral mode of health services utilization defines three broad factors: predisposing, enabling and need. Do you agree with Andersen's definition of factor? Why or why not?

References

American hospital association. (2012). Retrieved from <http://aha.org>

Andersen, R. (1968). *A behavioral model of families use of health services.* Chicago, IL:

Center for Health Administration Studies

(n.d.). Retrieved from <http://http://www.medpac.gov/documents.cfm>

Hospital charity care in the United States issue overview.(n.d.). Retrieved from

<http://www.mffh.org/mm/files/HospitalCharityCareIssueBrief.pdf>

APPENDICIES

APPENDIX A

THE PROBLEM

Statement of the Problem

The reporting requirements to maintain tax-exempt status for community benefit are changing. With the enactment of the Patient Protection and Affordable Care Act (ACA) of 2010, the requirements for community benefit will become more stringent. This study seeks to ascertain what relationships exist, if any, between the community benefit per capita and population characteristics in Michigan Critical Access Hospitals (CAHs).

Research Question

What population characteristics (demographic, socio-economic, and health factors) are associated with community benefit per capita provided by Michigan Critical Access Hospitals? In order to answer the research question, the following hypotheses were tested.

Hypotheses

Predisposing

Hypothesis 1 states that the education level of the population is associated with community benefit per capita for CAHs. The hypothesis was centered on the notion that higher levels of education are associated with better healthcare as noted in the 35th annual report by the Centers for Disease Control and Prevention ("Higher education and," 05). Individuals with lower levels of education are less likely to use healthcare services.

Hypothesis 2 states that there is an association between gender compositions of population and community benefit per capita for CAHs. In 2004, Kaiser Women's Health Survey reported that the position of females in the families' healthcare decisions is pivotal. The report indicated that 80% of females take on the principal responsibility for healthcare decisions ("Report –women," 07). The foundation for this hypothesis is that females seek family's healthcare, including uncompensated care, which potentially impact CAHs.

Hypothesis 3 states that an association exists between the ethnic composition of the population served and community benefit per capita for CAHs. The hypothesis is based on the assumption that non-white individuals will seek community benefit at a higher rate opposed to white individuals. The 2006 National Healthcare Disparities Report indicated that communities of color were more apt to be without healthcare insurance and the prospective of requiring financial assistance for healthcare was probable ("The national healthcare," 2006).

Enabling Factor

Hypothesis 4 states that the income level of the population served is associated with the community benefit per capita for CAHs. In general, it is assumed that individuals with lower incomes are likely to lack comprehensive healthcare insurance coverage, and are more likely to require community benefit than individuals with a higher income. A 2010 Gallup study noted a relationship between families with lower income and the lack of healthcare insurance (Newport, 2010). Therefore, the findings were expected to reveal a correlation between average income level of the population served and the need for community benefits.

Hypothesis 5 states that the percentage of the population in poverty is related to the community benefit per capita for CAHs. Individuals who are poverty stricken are more likely to need subsidized healthcare due to a lack of resources and minimal healthcare benefit. Although poverty level and income are somewhat interrelated, they represent different variables: poverty level represents a specific population and median income represents the frequency within the specific population.

Hypothesis 6 states that the percentage of employed individuals of the population served is related to the community benefit per capita for CAHs. A large part of healthcare insurance is employer based, per a report by the Health Policy Center at the Urban Institute indicating that 92% of healthcare insurance was obtained by the employer ("Private insurance," 2007). The assumption is that the percentage of employed individuals represents the population with healthcare insurance coverage and the need for community benefit may be lower comparing to those who are not employed.

Need

Hypothesis 7 states that the health status of the county is associated with the community benefit per capita for CAHs. Unlike many other services, healthcare services are needs based; therefore, overall health status would represent a potential for these needs. The Robert Wood Johnson Foundation reported that the longevity of a person is swayed by the health ranking of a community ("Healthiest and least," 12). With a higher health status ranking, a perceived healthier community would require a lower amount of community benefit.

Assumptions

Community benefit is a necessary component for society and a requirement for tax-exempt status of a non-profit hospital; however, community benefit may minimize a non-profit hospital's viability.

This study assumes that amount of community benefit may reflect the need for uncompensated care of specific groups within the population. The need for healthcare services is correlated with different factors such as age, gender, ethnicity, employment, poverty, income and health of the community.

The utilization of healthcare services fluctuates by families. A study conducted by Andersen (1968) indicated that 8% families accounted for 36% of total family expenditures for healthcare. According to Andersen's (1968) behavioral model of health services utilization, there are three groups of factors that motivate a person's decision to utilize healthcare services: *predisposing*, *enabling* and *needs* factors. Each factor has several components which determine the utilization of healthcare (Andersen, 1968).

Although Andersen's behavioral model of healthcare services utilization is usually applied at the patient level, the study assumes that the same factors can be measured at the level of community. The study uses the county that the CAHs is physically located as representation of the population served.

Limitations

One of the most important limitations of this study is sample size (n=31) . The study's only focus was on the State of Michigan. It was limited by the number of CAHs with available data on community benefit. Expansion of the sample size of CAHs, may be advantageous, allowing additional research of the relationship between community

benefit and population characteristics. A larger sample would allow an increase in the depth and breadth of the population characteristics and provide enhanced estimates of the relationship between dependent and independent variables. The second limitation is related to model specification and is unavoidable. It is possible that some other variables affected the utilization of community benefit in CAHs have been omitted due to the lack of data. Lastly, as secondary data was utilized for this study, the control of the data collection is limited; however, the data was collected by governmental agencies and the assumption is made that errors are insignificant and randomly distributed.

Significance of Study

The findings of this study revealed partial support for the study's hypotheses. Relationships were demonstrated between community benefit per capita for CAHs and two of the proposed variables based on Andersen's behavioral model of health services utilization, income and county ranking. The first expected relationship was a positive correlation and was statistically significant between population median income and community benefit per capita for CAHs; as the median income increases the community benefit per capita for CAHs decreases. The second relationship was a weak and marginally statistically significant correlation, acknowledging a relationship between the health ranking and community benefit per capita for CAHs. With a healthier community and a higher health ranking, which indicates a decrease need for community benefit per capita for CAHs. CEOs need to cognizant regarding community benefit need and financial viability. CEOs who are interested in reducing community benefit find themselves in a quandary because there also the need to report community benefit. Although this study did not focus on the financial aspects of the Balanced

Budget Act of 1997 (BBA), the findings indicated support for the provision of enhanced reimbursement which suggests that the BBA has worked for CAHs.

Current studies related to community benefit per capita and CAHs are limited. The findings from this study, although statistically limited, will complement the existing literature and provide a basis for future research.

Table 5: Operational Definitions of Independent Variables

Independent Variable Name	Definition	Type	Source
Need Factor			
County Health Ranking	Ranking of a county health status	Rank	University of Wisconsin-Health Sciences: School of Medicine and Public Health
Predisposing Education	Percentage of the population ≥ 25 years old with a high school education in a county	Continuous	United States Census Bureau
Gender	Percentage of females of the county population	Continuous	United States Census Bureau
Ethnicity	Percentage of the county population ethnicity of White, American Indian/Native Alaska and African American	Continuous	United States Census Bureau
Enabling Factors			
Income	Median income in dollars	Continuous	United States Census Bureau
Poverty	Percentage of the population that is $\geq 200\%$ poverty level	Continuous	United States Census Bureau
		Continuous	Department of Labor
Employment	Percent of the employed persons		

Table 6: Operational Definitions of Dependent Variables

Dependent Variable Name	Definition	Type	Source
Community benefit per capita	Amount of community benefit divided by county population of critical access hospital physical location	Continuous	Calculated
Community benefit Total	Amount of community benefit	Continuous	GuideStar
Bad Debt	Amount of bad debt	Continuous	GuideStar
Uncompensated Care	Amount of uncompensated care	Continuous	GuideStar
Number of beds	Number of licensed beds	Continuous	Michigan Health and Hospital Association

APPENDIX B

Methodology

Procedures

This study utilized secondary data collected by GuideStar from tax returns, specifically Form 990 and Schedule H, that list community benefit for non-profit organizations including CAHs for the year ending in 2010 as well as census data. Charity care is defined as the calculation of all costs and write-offs for individuals deemed to be unable to pay prior to the delivery of services. CAHs use guidelines developed by the Catholic Health Association to determine charity care.

Unreimbursed care includes charity care and contractual allowances from Medicaid and Medicare reflecting the dollars received versus what was charged. Healthcare for the indigent population represents the costs not collected from the uninsured or underinsured who are required to pay for services provided ("Hospital charity care," 2005).

GuideStar, founded in 1994, was known as a Philanthropic Research firm with a mission of providing an opportunity for contributors to charitable organizations to be able to access non-profit reports regarding the charity. GuideStar officially received tax-exempt status as a 501(c)(3) public charity in 1996. In 1999, GuideStar embarked upon publishing Form 990 and Schedule H and became known as the nation's premier non-profit database ("GuideStar", 2012). For this study, data was collected from GuideStar calendar year 2010, as related to charity care provided by CAHs in Michigan.

Form 990, entitled "Return of Organization Exempt from Income Tax," is a document that must be filed with the Internal Revenue Services (IRS) each year by

organizations exempt from federal income taxes under section 501(3)(c) of the IRS Revenue Code, and with annual receipts of more than \$25,000 a year. Since a non-profit organization does not complete an income tax return and does not pay income tax, the completion of Form 990 is simply for informational purposes (Swords, 2011). The information on Form 990 is derived from two sources, the IRS and the organizations themselves. The IRS sends the 990 forms to GuideStar who posts them for public access.

Form 990 requires the hospital's mission statement and summary of activities that guide an understanding of the financial and operating workings of the hospital. There is a financial summary from the previous and current year to ease the review of the data. It includes salary information for key staff members, income and expenses, financial assistance as well as community benefit which could include community health improvement programs, for the non-profit organization ("Guidestar," 2012).

Schedule H is the form on which hospital community benefit, financial, and institutional activities are reported. It must be attached to each facility's annual Form 990 return. Form 990 has six components each of which has unique obligations. The first obligation is to determine if the hospital's community health needs assessment (CHNA) coincides with the programs, the hospital meets those needs with appropriate documentation. The question referencing in the hospital has a charity care policy is included in this obligation. Second, those activities that the hospital participated in are included for protecting and/or improving community health and safety. This would include, community leadership training, advocacy for community health improvement, and/or workforce development.

The third obligation has three parts. Part one is utilized to report bad debt expenses. Part two refers to allowable costs and Medicare reimbursements that are present on the hospital's cost reports. The third part involves information indicating the hospital's collection practices which detail the debt collection procedure. The fourth obligation is hospital information, including the status of the hospital's requirement for licensure or registration. Hospital owned clinics and skilled nursing units are reported in this section. Obligation five includes the answers to poverty guidelines utilized to determine charity care beneficiary.

The sixth and final obligation is the most challenging for hospitals because it includes the quantifiable components of a hospital's activities, describing the hospital's process for assessing healthcare needs, providing tactics to educate patients regarding the hospital's charity care policies, and outlining the characteristics of the population served and how the hospital promotes health ("Guidestar," 2012).

Measures

Uncompensated care data was obtained from GuideStar 990's and Schedule H. Specific data measured for each Michigan CAH include: total community benefit expenses which includes financial assistance at cost, unreimbursed Medicaid and other means-tested government programs identified as programs that are contingent on an individual's income or assets ("Instructions for schedule," 2012). In the late 2000s, the IRS required additional information, expanding the Form 990 reporting to include Schedule H ("Guidestar," 2012). Data retrieved from the American Hospital Association (AHA), Michigan Hospital Association (MHA) and the Michigan Center for Rural Health

identified the CAHs, bed size and the county the CAHs was physically located ("Michigan center for," 2012).

The Census Bureau is the leading source for quality data regarding the United States' economy and people. Population characteristics data was obtained from the Census Bureau (Census Bureau, 2012). Data on population by county included individuals with a high school diploma, gender, ethnicity, income, number of individuals employed and unemployed and residents within 200% of the poverty level.

Health ranking for the CAHs was obtained from the University of Wisconsin Population Health Institute Model. The University of Wisconsin premise for ranking the health status of a community explores a multitude of healthcare outcomes such as mortality, morbidity, health behaviors, clinical care, social and economic factors, and physical environment. The ranking technique includes the utilization of measures, such as frequency of an individual death before the age of 75, age of mother at time of birth, ability to obtain healthy foods at the county level from a diverse source of local, state, and national data. The university oversees the measures and combined scientifically primed weights ("County health rankings," 2010).

APPENDIX C

Literature Review

The relationship between amount of community benefit provided by CAHs and the characteristics of population served present a complex problem. It is reasonable to assume that the population characteristics may affect the overall need for healthcare services; it is also reasonable to assume that same characteristics may affect the proportion of care that needs to be provided as community benefit by CAHs. The available healthcare literature was reviewed to assess the relationship between population characteristics and utilization of healthcare services, as well as the relationship between CAH and provision of community benefits in order to create a comprehensive conceptual model for the study.

Population characteristics and need for healthcare services

A behavioral model of healthcare utilization was originally developed by Ronald Andersen and has been used since the 1960s. Andersen believed that families vary in the amount of their use of health services. A 1963 study conducted by Anderson revealed that 8% of all families accounted for 36% of families spending for health. In contrast, 30% at the bottom of the spectrum spent only 3% on health expenditures. From this study, Andersen developed the model of behavior health utilization for predicting perceived need, awareness and utilization. Andersen placed predictor variables in the following three areas: predisposing, enabling and need (Andersen, 1968).

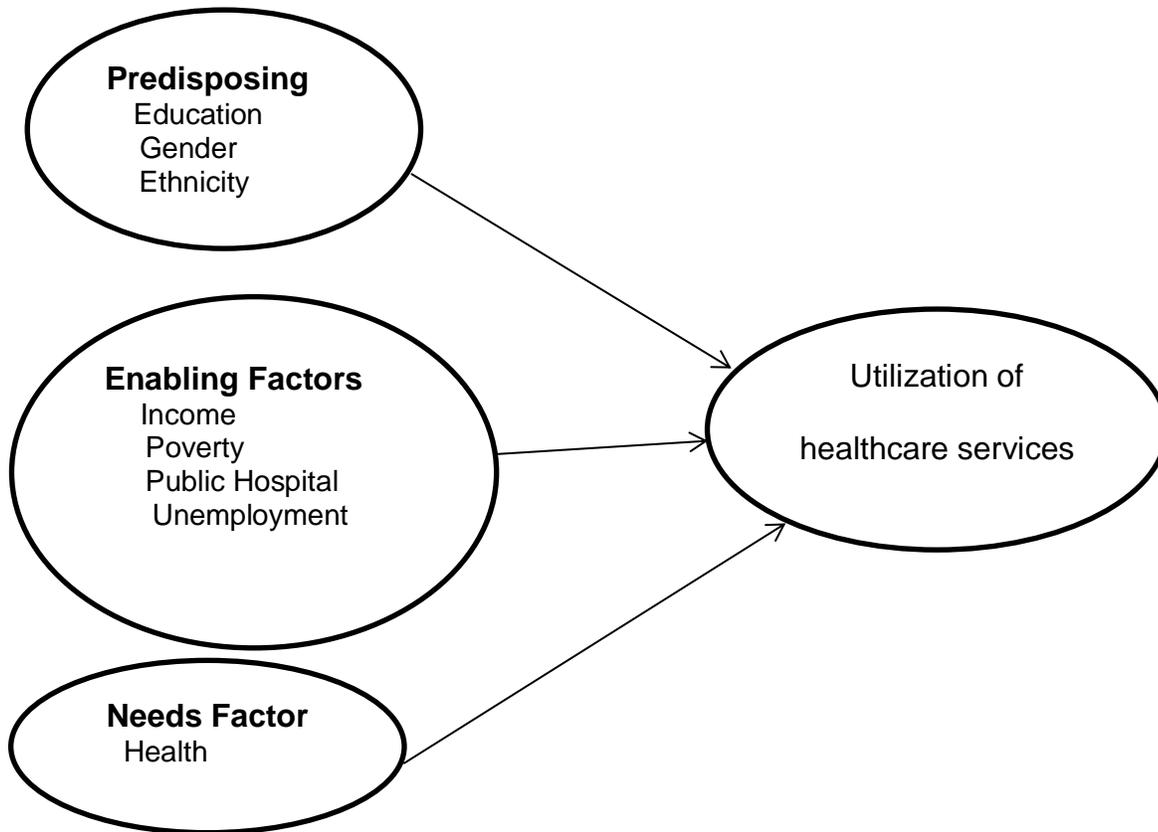


Figure 1. Andersen's model of behavioral health utilization

The model that Andersen developed expected that categorization of circumstances emphasize the type and capacity for healthcare utilization. The categorization claimed dependence on three factors, predisposing, obtaining services and level of illness (Andersen & Newman, 2005). Predisposing factors encompass age, gender and education (Davidson, Andersen, Wyn & Brown, 2004). Income, health insurance and transportation are included in the enabling factor. The need factor comprises the exposure to illness and the choice to seek healthcare or not (Andersen & Newman, 2005).

A study that was conducted over a 20 year period, 1975-1995, of literature review that encompassed Andersen's behavioral model of utilization for environmental

and provider-related variables concluded that 45% of the 139 articles contained environmental variables. The same study acknowledged that provider-related variables were reported in 51% of the articles and 14% included both variables (Phillips, Morrison, Andersen & Aday, 1998).

The role of ethnicity as a predisposing factor in long-term care in a study of African-American and whites older than 65 in 2005, cited a relationship with Andersen's model of healthcare utilization. The study addressed disparities between two races and long-term care utilization (Bradley, McGraw, Curry, Buckser, King, Kasl & Andersen 2002).

A rural North Carolina study reported a relationship with enabling factor, transportation and the associated components with attaining healthcare. The results of the study supported a significant relationship with the quantity of healthcare encounters (Arcury, Gesler, Perin, Preisser, Sherman & Spencer, 2005).

A four year study of mental illness in southern California concluded in 2004 demonstrated support for Andersen's model of behavioral health utilization. The study emphasized the enabling and need factors of Andersen's model linked to the utilization of mental health services (Lindamer, Liu, Sommerfeld, Dolsom, Hawthorne, Garcis, Aarons & Jeste, 2012).

In 1997 there were 53 studies on hospitalization and office visits that utilized Andersen's model to establish that predisposing factors such as age and gender indicated no relationship to chronically ill individuals; however the study did reveal that the complexity of the disease and emotional status supported Andersen's model

(deBoer, Wijker, & de Haes, 1997). Andersen's model supports the research that the United States intends to back its mission to keep individuals healthy (Wolinsky, 1976).

A national study of adults in treatment for human immunodeficiency virus infection supported some of the predisposing and enabling factors of Andersen's model of behavioral health utilization. The 1996 study acknowledges that no lower income and African American populations demonstrates a relationship with access to health care and treatment (Andersen, Bozzette, Sharapiro, St. Clair, Morton, Crystal,...HCSUS Consortium, 2000).

The need factor is significant as it demonstrates that physical and psychological needs have a major role in forecasting healthcare utilization. Need factors such as disease severity and complications have unfavorable effects on healthcare utilization of an individual with a chronic disease. The length of the disease does not have an effect on the utilization of healthcare (deBoer, Wijker, & de Haes, 1997).

Healthcare utilization by means of safety net hospitals is selected based on a diverse set of details (Bazzoli, Hsieh, Woolton & Mobely, 2012). The definition according to the Association of Public Hospitals and Health Associations, safety net hospitals provide substantial healthcare services that are uncompensated for the population that has low income and are indigent and uninsured (Cantlupe, 2012). Safety net hospitals are situated in areas that have a disproportionate of the population that is poor and where minorities reside (Bazzoli, Hsieh, Woolton & Mobely, 2012)

The number of uninsured individuals in the United States was at a record high of 49.1 million in 2010. Indigent care referred to as uncompensated care is defined as uncollected cost from uninsured or underinsured individuals ("Hospital charity care,"

2005). Universal healthcare coverage is not available in the United States. Various reasons influence the probability of individuals being uninsured. Reasons include the instability of the economy, demographics, employment status, age, and geographic location. The younger population, who qualified for insurance via an employer, remained uninsured because the qualification period was so lengthy that they got involved in other life activities and did not meet the deadline (Fronstin, 2008).

With the increase in unemployment and the economic downturn, individuals are losing coverage or experiencing an increase in insurance premiums that may not be affordable (Bundorf & Pauly, 2006). Many employers similarly are sharply reducing the contributions made to the employee's insurance premium including the increase in deductibles. This pushes the cost to the employee who is then liable for the expense (Dubay, Holahan & Cook, 2007). Many of these individuals are dependent on healthcare through safety net hospitals or agencies which provides indigent care (Lopez, Desroches, Vogel, Grant, Lezzoni, & Campbell, 2013). This leads to individuals relying on indigent care from hospitals (Schneider, 2007).

Provision of uncompensated care and community benefit

Hospitals that provide care for the uninsured patient will continue into the future (Coughlin, Long, Sheen and Tolbert, 2012). Hospitals are categorized in three types: publicly owned, nonprofit, and for-profit. Within the categories there are urban and rural. Urban hospitals can be classified as teaching hospitals and rural hospitals are not ("The national healthcare," 2012). If a hospital is one of the 2,918 non-government non-profit hospitals in the United States and it fits the following requirements:

- 'The organization is required to be licensed by the state.

- The IRS determines hospital care as the organization's principal function.
- Are state-licensed hospitals operated through a disregarded entity or joint venture treated as the activities of the tax-exempt partner, multi-hospital systems, critical access hospitals organized as 501(c)(3) organization' (Harris, 2012, p. 2). This in turn, allows the non-profit hospital to be exempt from the majority of taxes and deemed non-profit status (Colombo, 2005).

Providing charitable care for tax-exempt status has been mentioned as early as the 1940's, with very little formal structure until the 1960's. Since the 1960's the Internal Revenue Service (IRS) has not detailed charity care per se as long as charity care exists for the indigent population (Schirra, 2011). Federal initiatives have been made to modify charity care without significant success. In 2004, the U.S. Congress began hearings questioning whether the levels of community benefit provided by not-profit hospitals were consistent with their tax-exempt status (Thai, 2010).

Congress was intending to establish protocols that would eliminate non-profit hospitals of their tax-exempt status, causing a rippling effect to the uninsured population and reducing the number of potential safety net services that provided for the uninsured. The Senate, in turn, proposed that non-profit hospitals complete a community health needs assessment (CHNA) every three years, as a part of the tax-exempt status. The CHNA would recognize hospital communities requiring assistance with healthcare education that is mutually reviewed and agreed upon with local community entities (Tyrrell, 2010).

Tax-exempt status for non-profit hospitals has experienced much speculation regarding what is perceived, versus what is needed as adequate charity care or

community benefit to maintain the status as non-profit. As result, the IRS has increased accountability for the non-profit hospitals by mandating the submission of IRS Form 990 and Schedule H beginning with the 2009 tax year. The Form 990 and Schedule H are intended for non-profit hospitals to provide detailed financial information specifically for expenditures for community benefit, including care for the indigent (Principe, Adams, Maynard & Becker, 2012). One requirement of the IRS's Form 990 and Schedule H is to allow the public access to information regarding the community benefit by the non-profit hospitals. This provides the public a view of the financial status of the non-profit hospital (Principe, Adams, Maynard & Becker, 2012;"GuideStar", 2012).

The IRS at this time does not require a maximum ceiling for non-profit hospitals to maintain tax-exempt status. In 2007, the Senate Finance Committee advocated that the non-profit hospital would be required to provide 5% of net patient revenues, similar to a requirement for the state of Texas that resulted from pilot program in the 1990's for tax-exempt status. Currently the 5% requirement has not been mandated (Principe, Adams, Maynard & Becker, 2012; McPherson, 2012;"GuideStar", 2012).

The Schedule H necessitates that non-profit hospitals provide an accounting of their net worth related to community benefit. This includes the means tested government programs, community health improvements, health professional education, subsidized health services, community building activities, research and cash or in-kind transactions to community groups (Principe, Adams, Maynard & Becker, 2012).

Various hospital systems have the perception that legislators are agitated because of the belief that the systems have substituted community benefit with profit motives (Schneider, 2007). Some opponents feel that legislation that increases the

percentage of community benefit that hospitals are required to offer to retain tax-exempt status would demoralize hospitals and cause increased financial stress. The true harm would be felt by rural and inner city hospitals that have a large percentage of uninsured patients already, which seems to be unnoticed by the congressional delegation.

Applying a parallel community benefit structure for rural, inner city, and urban hospitals is impractical and idealistic which in turn would have a direct effect on the indigent population (Tyrrell, 2010).

A study of California hospitals demonstrated particular characteristics may affect indigent care including ownership, academic facility, size, and religious affiliation. Whether the hospital has competition or managed care insurance programs is another factor in determining percentage of indigent care (Schneider, 2007).

The enactment of the Patient Protection and Affordable Care Act in 2010 (ACA), has caused hospitals to anticipate substantial changes in healthcare provisions for the uninsured and reporting requirements. The ACA has proposed mandated health insurance coverage for individuals who are uninsured or be personally burdened with a penalty. This is partially defrayed by the proposed requirement that small businesses provide insurance to their employees (Wilen-Berg, 2010). According to Buettgens and Hall (2011) 'the percentage of Americans that will be covered under the ACA is anticipated to be 26 million, with 23 million Americans remaining without health insurance This includes 40% of the 23 million eligible for Medicaid or State's Children's Health Insurance Programs (SCHIP)' (n.p.) increasing healthcare coverage for children (Buettgens & Hall, 2011, n.p.). With the support of the Deficit Reduction Act of 2005, a

state now have the liberty of the rearrangement of funding for the SCHIP program and does not impose a financial threat to the indigent adult population (Wolfskill, 2007).

The ACA passage requires hospitals that operate as a tax-exempt, charitable organization, conform to four stringent requirements. The four requirements are: 1) adopt and implement a written financial assistance and emergency medical care policy, 2) must limit charges for emergency and medical care or other necessary medical care 3) comply with new billing and collection restrictions and 4) CHNA (Harris, 2012).

The tax-exempt financial policy must address the criteria for financial assistance, the methodology for application, how charges are calculated, the actions regarding non-payment, and public awareness of the respective financial policy. Uninsured individuals are not necessarily cognizant regarding the pricing of healthcare services; therefore they do not seek a price reduction or application assistance regarding indigent care (Cunningham, Hadley, Kenney & Davidoff, 2007).

Uninsured care charges must be limited, to not more than the lowest amount that are charged to individuals who have insurance coverage. Gross charges may not be used by the hospitals to charge the indigent. Hospitals may not present gross charges to the indigent. The next requirement references billing and collections. The hospital may not engage in out of the ordinary collection processes and must provide the opportunity for the indigent to apply for charity care (Harris, 2011).

The CHNA requirements must meet the three concentrations of compliance, coordination, and coalition, and have a broad span from the individual hospitals. The CHNA needs to be completed every three years. In addition the hospital board is required to adopt the plan developed from the CHNA and the community must be given

access to it. The CHNA essentially needs to look at all facets of the healthcare needs of the community and denote who provides what services to what portion of the population, what services are currently available, where and what educational services are vital. A detailed action plan must be included to tie all the designated needs/findings together. The assessment will include an implementation and action plan to meet the needs identified (Barnett & Somerville, 2012).

In addition, it is important for non-profit tax-exempt multi-hospital systems comply with the requirements, and that each hospital individually, in a multihospital system, has an individualized CHNA and creates separate implementation strategies (Barnett & Somerville, 2012).

The uninsured population has long depended on non-profit hospitals for basic healthcare services. Hospitals have provided millions of dollars of care on expensive medical services, community education and more that help qualify hospitals for tax-exemptions (Tyrrell, 2010). The percentage of the healthcare expenditure of the gross national product (GNP) in 2010 was 17.9% ("United States health," 2012).

Charity care, a part of community benefit, carries a definition as the total of free care for which the hospital does not expect or receive payment (Weissman, 2005). Prior to the passage of ACA, the number of individuals without health insurance continued to increase, hospitals with a large percentage of community benefit experienced an increase in financial hardship. The ability for a hospital to manage operational viability became an increasingly difficult relationship to the amount of community benefit that the hospital provided. The development of a strategy for ongoing financial stability was increasingly important as healthcare systems financial

resources decline and the need to protect their ability to provide affordable care. Policy makers need to continue to examine strategies that have the potential of increasing funding for hospitals that provide community benefit and at the same time, not allow defacing of the incentives that are currently in place that reduce excessive costs (Ferrier, Rosko & Valdmanis, 2006).

Hospitals are in need of patient revenues to cover their financial needs, including providing technological change and the associated expenses related to operating a business. If a hospital loses the tax-exempt status, the burden to repay investors and reduce the debt of the hospital escalates (Tyrrell, 2010). Policies regarding community benefit have developed into a modern-day approach that includes guidelines developed by the American Hospital Association (AHA). The guidelines encompass informing patients regarding billing and collection processes, assisting with the completion of the necessary paperwork for potential federal or state funded insurance, creating a harmonious application process for indigent care at the local hospital level, balanced with the need to provide affordable care to the indigent (Wolfskill, 2007).

Health insurance companies have the luxury of bargaining payment for services rendered, whereas the uninsured population has no leverage to secure a reasonable rate for payment (Cunningham, Hadley, Kenney & Davidoff, 2007). Chief financial officers who encourage and endorse aggressive debt collection techniques expect to deter the indigent population from returning to the hospital. Revenue loss due to community benefit impinges upon the financial health of hospitals. Nonpayment for services contributes to the decline trend in hospital profitability (Weissman, 2005).

In 2004, an AHA report on gross domestic product produced results that indicated that non-profit hospitals began to acknowledge their relationship to community and its value. The report referenced that hospitals account for 15% of the gross domestic product. Hospitals realize that one out of every ten positions is directly or indirectly related to hospitals, and that hospitals paid in excess of \$249 billion in employee compensation. Johnson (2007) indicates that facts show that non-profit hospitals are contributing substantially economically to their local community (Johnson, 2007).

Over a one year period, 2008 to 2009 the number of uninsured population that were serviced by public hospitals increased 23% creating potential complications for a hospitals financial viability (Cantlupe, 2012). By identifying the separate costs due to community benefit and technical inefficiency, the application of a managerial or policy method may reveal the true nature of hospital losses and identify the differences in terms' of real resources lost (Ferrier, Rosko & Valdmanis, 2006). A study found that profitability was negatively related to greater than average amounts of community benefit provided at each hospital. Before cost control measures were rigorously implemented by government and private insurers, hospitals could cross-subsidize community benefit and in effect shift the burden of non-paying patients to paying patients resulting in higher costs for third-party payers. As Medicare, Medicaid and other third-party payers introduced fixed-fee payment systems, the financial risk of providing healthcare shifted from payers to providers (Ferrier, Rosko & Valdmanis, 2006).

In 2006, Carlson noted in Health Affairs journal that hospitals were providing \$30 billion in community benefit, specifically indigent care. The AHA in 2009 estimated that community benefit was at 39.1 billion dollars from 36.4 billion dollars the year before, which equated to a 7% increase (Carlson, 2010). Medicare has traditionally subsidized community benefit at reduced rates while hospitals compensate by pricing the payment structure of private payers at a higher rate. The process to subsidize this practice is clearly in doubt with the current economic climate. With the increase in number of the uninsured population, setting aside non-reimbursable costs to those that pay for services can create a growing cycle, which relates to a decrease in the number of paying customers carrying a much larger proportion of cost (Vladeck, 2006). There have been efforts to quantify and scrutinize non-profit hospitals indigent care. In reference to community contributions, pressure to address uninsured care was estimated to have been \$27 billion in the U.S. in 2005, and bad debt, estimated to have been \$30 billion nationwide in 1998, which exceeded industry profits by a 3-1 ratio, have never been greater for all hospitals, both chains and independents, whether they are for-profit or not-for-profit. Healthcare system chains have been continuously charged with limiting their community contributions in order to improve profits (Schneider, 2007).

Reporting data related to charitable care by governmental hospitals appears to have provided the uppermost concentration of indigent care at 18.1% during the period of 2003 and 2007. It was noted that the governmental hospitals subsidized the losses with the support of appropriation dollars and non-patient care activity. During this same time period non-profit hospitals experienced a lower percentage of indigent care at 4.8%. For-profit hospitals had the ability to control indigent care; yet, experienced a 4%

activity and subsidized the indigent care in a similar fashion as the government and non-profit hospitals (Schuhmann, 2008).

The community benefit requirement is strained due to the fact that the economy is declining. The decrease in publicly funded hospitals, reimbursements are not in pace with inflation, the cost of delivering healthcare is on the rise, there is a nursing shortage, physician recruitment and retention is costly and particularly difficult for rural hospitals, and day to day expenses and capital need demands are constant (Tyrrell, 2010).

Physician profiles are also important for community benefit as there is an increase in employment of physicians by health systems (Kocher & Sahni, 2011). The responsibility of providing healthcare in the early nineteenth century was the primary responsibility of women and with the assistance of midwives (Keane, 2011).

Encouragement to provide community benefit is led by physicians who have experienced mentors, are female and have had active parents who have been persuaded to provide community benefit. A positive attitude, being religious, and those physicians who have had a mentor with an attitude of serving the indigent will be more likely to serve the indigent, opposed to physicians who do not have these attributes. Additionally, those who entered medicine to help people have more positive attitudes toward vulnerable populations as opposed to those who entered medicine for solely monetary reasons. The physicians who entered for monetary reasons are less likely to provide service to the indigent. Among social characteristics, only physician age has a direct relationship with attitudes, with older physicians feeling more responsibility to care for indigent patients. In contrast to physicians age, physician race and gender have only indirect relationships to attitudes, with women and non-white physicians having

more positive attitudes toward serving the indigent (Chirayath-Taylor, 2006;Wright, 2010).

Exemption from local, state and federal taxes, non-profit hospitals are expected to provide benefits to their community, including charity care for the poor. Surplus revenues are supposed to be channeled back into operations. While some large non-profit hospitals have amassed billions of dollars in reserves, many health systems rely on days of cash on hand, a common gauge of a hospital's solvency, unfortunately is sometimes measured in hours. Tax-exempt status was challenged by the state of Illinois in 2004. Provena Covenant Medical Center tax-exempt status was removed since the (Maluro, Schneider & Bellows, 2004).

Communities around the nation view hospitals as bastions of the community and they have an emblematic role within the community. This presence in the community, also, is perceived as the only method to achieve quality of care, even if there are different opportunities for medical care, the local hospital remains in its role as the pillar, a source of community pride and strength (Vladeck, 2006). The organization mission, vision, values statement, and attitude, greatly affects the community benefit provided by the hospital. Delivering the necessary community benefit is a significant means to emphasize the humanness of healthcare. Connecting the mission and values is often drawn by personal and individual stories that tug at the heart of those that are uninsured. The history of providing indigent care to be over a period of time, as opposed to episodic delivery, allowing for the framework and modeling for extensive illustration of the indigent care provided (Wolfskill, 2007).

Critical Access Hospitals

The rural healthcare system has changed dramatically over the past decade due to a transformation of healthcare financing, the introduction of new technologies, and the clustering of health services into systems and networks. Enactment of the Balanced Budget Act of 1997 (BBA) allowed the creation of the State Medicare Rural Hospital Flexibility Program granting specific hospitals to be converted to a Critical Access Hospital (CAHs).

Critical Access Hospitals (CAHs) is a type of rural hospital that meets defined criteria for this designation ("Critical access hospitals," 2012). A CAH must be:

- Be located in a state that conforms with the CMS as a Medicare Rural Hospital Flexibility Program
- Participate with Medicare as a rural public, non-profit, or for-profit entity
- Be located in a rural community, or have status as an essential or frontier provider
- Be located 35 road miles from another hospital or 15 miles if terrain is mountainous with or without secondary roads
- Is limited in bed size to no more than 25
- Has an annual length of stay an average of 96 hours or less per acute inpatient stay
- Have 24-hour emergency services seven days a week with medical staff on-site, on-call or available within 30 minutes with an allowance of 60 minutes within frontier terrain

- And conform to the Emergency Medical Treatment and Labor Act (EMTALA) (Health Plans, 2011;"Critical access hospitals," 2012).

According to Richman, CAHs compete with larger more technological savvy regional hospitals for revenue generating patient care, which limits the CAHs ability to obtain financial stability. CAHs ability to sustain the cost of serving indigent patients (Richman, 2011).

There is a significant association between the population that is uninsured, relying on uncompensated care and the seriousness of their health (Hadley & Holahan, 2004). The uninsured, in contrast with those that have healthcare coverage, will not develop an ongoing relationship nor visit the primary care provider. This precludes preventive medicine. Individuals who need chronic care are in need of treatment before the illness becomes unmanageable. Uninsured patients that utilize the emergency room (ED) have health issues that might have easily been addressed by a primary care provider in a proactive setting. Having the uninsured patient in an ED is costly for other patients, payers and the community at large. The uninsured rates are substantially higher in rural communities as opposed to urban communities and have a direct impact on the financial feasibility of rural hospitals (Rust, Baltrus, Ye, Daniels, Quarshie, Boumbulian & Strothers, 2009). Paying for preventive medicine or initial investment for intervention is often rejected by society (Culica, Rohrer, Ward, Hilsenrath & Pomrehn, 2002). Health education, provided by the hospital, in various forms to the population as preventative measures is increasing these hopes of decreasing illness especially to the uninsured population (Vladeck, 2006).

Rural health systems share the common characteristics of all health delivery and have joined into systems and alliances to cope with the turbulent environment of healthcare policy and economics. By combining resources, these health networks expect to reduce costs, manage resources, better compete effectively, and increase bargaining position with insurers and regulators. Additionally, there are many cooperative and collaborative systems developing as a result of policy initiatives and in response to incentives from foundations and payment systems (Ricketts, 2000).

In summary, with the past, current and future economic downward spiral, pressures on hospitals needing to increase their operating margins, looking to generate surplus financial resources from prosperous patients, philanthropy or government assistance to defray the cost of services which were not paid. Because of decreasing payments, the hospitals' ability to provide non-paid-for services may decline. Communities with a population that have a low percentage of insured, a high percentage of indigent, tourist related local economy, make it problematic for hospitals to support the concept that hospitals are expected to pay for the indigent (Vladeck, 2006).

Lastly, Andersen's behavioral model of health services factors, predisposing, enabling and need factors studies globally acknowledged a relationship to access to healthcare services for the indigent population. Combined with the enactment of ACA community benefit reporting requirements could potentially have a negative effect on the tax-exempt hospitals future research especially encompassing CAHs is critical.

References

- Andersen, R. (1968). *A behavioral model of families' use of health services*. Chicago, IL: Center for Health Administration Studies
- Andersen, R., Bozzette, S., Shapiro, M., St Clair, P., Morton, S., Crystal, S., ... & Cunningham, W. (2000). Access of vulnerable groups to antiretroviral therapy among persons in care for HIV disease in the United States. HCSUS Consortium. HIV Cost and Services Utilization Study. *Health Services Research*, 35(2), 389-416.
- Andersen, R., & Newman, J. F. (1973). Societal and individual determinants of medical care utilization in the United States. *The Milbank Memorial Fund Quarterly. Health and Society*, 51(1), 95-124.
- Arcury, T. A., Gesler, W. M., Preisser, J. S., Sherman, J., Spencer, J., & Perin, J. (2005). The effects of geography and spatial behavior on health care utilization among the residents of a rural region. *Health Services Research*, 40(1), 135-156.
- Barnett, K., & Somerville, M. H. (2012). Hospital community benefits after the ACA: schedule h and hospital community benefits-opportunities and challenges for the states. *The Hilltop Institute*, n.p. Retrieved from <http://phi.org/uploads/application/files/o776uomaxhgipezxcjhyjyf1xg8gycsxp5vgu76499>
- Bazzoli, G. J., Lee, W., Hsieh, H. M., & Mobley, L. R. (2012). The effects of safety net hospital closures and conversions on patient travel distance to hospital services. *Health Services Research*, 47(1), 129-150.

- Bradley, E. H., McGraw, S. A., Curry, L., Buckser, A., King, K. L., Kasl, S. V., & Andersen, R. (2002). Expanding the Andersen Model: The Role of Psychosocial Factors in Long-Term Care Use. *Health Services Research, 37*(5), 1221-1242.
- Bundorf, M. K., & Pauly, M. V. (2006). Is health insurance affordable for the uninsured?. *Journal of Health Economics, 25*(4), 650-673.
- Buettgens, M., & Hall, M. A. (2011). Who will be uninsured after health insurance reform. *Robert Wood Johnson Foundation, n.p.* Retrieved from <http://www.rwjf.org/en/research-publications/find-rwjf-research/2011/03/who-will-be-uninsured-after-health-insurance-reform-.html>
- CAH information. (n.d.). Retrieved from <http://www.flexmonitoring.org/cahlistRA.cgi?state=Michigan>
- Cantlupe J. (2010, September). Physician alignment in an era of change. *HealthLeaders Media, n.p.*. Retrieved from <http://www.healthleadersmedia.com/page-2/MAG-256427/Physician-Alignment-in-an-Era-of-Change>
- Carlson, J. (2010). Free care adds up. *Modern Healthcare, 40*(50), 10.
- Chirayath-Taylor, H. (2006). Who serves the underserved? predictors of physician care to medically indigent patients. *Health, 10*, 259-282.
- Colombo, J. D. (2005). The failure of community benefit. *Health Matrix, 15* (1), 29-65.
- Commins, J. (2012). Payment cuts to critical access hospitals 'inevitable', Health Leaders Media, n.p. Retrieved from <http://healthleadersmedia.com/page-1/COM-276316/Payment-Cuts-to-Critical-Access-Hospitals-Inevitable>

- Coughlin, T. A., Long, S. K., Sheen, E., & Tolbert, J. (2012). How five leading safety-net hospitals are preparing for the challenges and opportunities of health Care Reform. *Health Affairs*, 31(8), 1690-1697.
- Culica, D., Rohrer, J., Ward, M., Hilsenrath, P., & Pomrehn, P. (2002). Medical checkups: who does not get them?. *American Journal of Public Health*, 92(1), 88-91.
- Cunningham, P. J., Hadley, J., Kenney, G., & Davidoff, A. J. (2007). Identifying affordable sources of medical care among uninsured persons. *Health Research and Educational Trust*, 42 (1), 265-285.
- Davidson, P. L., Andersen, R. M., Wyn, R., & Brown, E. R. (2004). A framework for evaluating safety-net and other community-level factors on access for low-income populations. *Inquiry*, 41(1), 21-38.
- deBoer, A. G. E. M., Wijker, W., & de Haes, H. C. J. M. (1997). Predictors of healthcare utilization in the chronically ill: a review of literature. *Health Policy*, 42, 101-115.
- Department of Health and Human Services, (2006). *The national healthcare disparities report*. Retrieved from: <https://www.ahrq.gov/qual>
- Dubay, L., Holahan, J., & Cook, A. (2007). The uninsured and the affordability of health insurance coverage. *Health Affairs*, 26(1), 22-30.
- Ferrier, G. D., Rosko, M. D., & Valdmanis, V. G. (2006). Analysis of uncompensated hospital care using a DEA model of output congestion. *Healthcare Manage Science*, 9(2), 181-188.
- Fronstin, P. (2008). Sources of health insurance and characteristics of the uninsured: Analysis of the March 2008 current population survey. *Issue Brief*, 321, 1-30.

Guidestar. (2012). Retrieved from <http://www.guidestar.org>

Hadley, J., & Holahan, J. (2004). The cost of care for the uninsured: what do we spend, who pays, and what would full coverage add to medical spending: *Kaiser (n.p.)*.

Retrieved from

<http://kff.org/uninsured/loader.cfm?url=commonsport/security/getfile.cfmPageID-35965#search=%22hadely%20and20%holahan%20>.

Harris, D. (2007). *Contemporary issues in healthcare law and ethics*. (3rd ed., pp. 47-51). Chicago, IL: Health Administration Press.

Health plans and continuation of coverage-cobra. (2011, September 26). Retrieved from <http://www.dol.gov/dol/topic/health-plans/cobra.htm>

Healthiest and least healthy counties ranked in every state. (n.d.). Retrieved from <http://www.rwjf.org/en/about-rwjf/newsroom/newsroom-content/2012/04/healthiest-and-least-healthy-counties-ranked-in-every-state.html>

Higher education and income levels keys to better health, according to annual report on nation's health. (2012, May 16). Retrieved from http://cdc.gov/media/releases/2012/p0516_higher_education.html

Hospital charity care in the united states issue overview. (2005, Summer). Retrieved from <http://www.mffh.org/mm/files/HospitalChairtyCareIssueBrief.pdf>

Guidestar. (2012). Retrieved from <http://www.guidestar.org>

Keane, C. (2011). Managerialism and medical charity: How employing and pre-paying doctors affects the provision of free care in the United States. *Health Sociology Review*, 20(3), 281-293.

- Kocher, R., & Sahni, N. R. (2011). Hospitals race to employed physicians--the logic beyond a money losing proposition. *The New England Journal of Medicine*, 364(19), 1790-1793.
- Johnson, D. D. (2007). The economic benefit of non-profit hospitals: broadening the evaluation of tax-exempt status at the state level. *The Wayne Law Review*, 53, 1583.
- Lindamer, L. A., Liu, L., Sommerfeld, D. H., Folsom, D. P., Hawthorne, W., Garcia, P., ... & Jeste, D. V. (2012). Predisposing, Enabling, and Need Factors Associated with High Service Use in a Public Mental Health System. *Administration and Policy in Mental Health and Mental Health Services Research*, 39(3), 200-209.
- Lopez, L., Desroches, C.M., Vogel, C., Grant, R., Lezzoni, L., & Campbell, E.G. (2013). Characteristics of primary care safety net providers & their quality improvement attitudes and activities. *American Journal of Medical Quality*, 28(2), 151-159
- McPherson, B. (2012). Hospital tax exemption: how did we get here? *Inquiry*, 49(3), 191-196.
- Maluro, L.S., Schneider, H., & Bellows, N. (2004, September). Endangered species? Not-for-profit hospitals face tax-exemption challenge. *Healthcare Financial Management*, 58(9), 74-78.
- Michigan center for rural health. (n.d.). Retrieved from <http://www.mcrh.msu.edu>
- Newport, F. (2010, Feb 27). *Health insurance coverage varies widely by age and income*. Retrieved from <http://www.gallup.com/poll/126143/health-insurance-coverage-varies-widely-age-income>

Phillips, K. A., Morrison, K. R., Andersen, R., & Aday, L. A. (1998). Understanding the context of healthcare utilization: assessing environmental and provider-related variables in the behavioral model of utilization. *Health Services Research, 33*(3), 571-596.

Private insurance.(n.d.). Retrieved from

http://urban.org/health_policy/private_insurance

Principle, K., Adams, K., Maynard, J., & Becker, E. R. (2012). The impact of the individual mandate and internal revenue service form 990 schedule h on community benefits from non-profit hospitals. *American Journal of Public Health, 102*(2), 229-37.

Report - women and healthcare: a national profile. (2007, 07). Retrieved from

<http://http://www.kff.org/womenshealth/7336.cfm>

Ricketts, T. C. (2000). The changing nature of rural healthcare. *Annual Review Public Health, 21*(1), 639-57.

Richman, A. P. (2011, November). Financing future of independent community hospitals. *Healthcare Financial Management, 65*(1), 82-86.

Rust, G., Baltrus, P., Ye, J., Daniels, E., Quarshie, A., Loumbulian, P., & Strothers, H. (2009). Presence of a community health center and uninsured emergency department visits rates in rural counties. *Rural Health, 25*(1), 8-16.

Schirra, J. (2011). A Veil of Tax Exemption?: A Proposal for the Continuation of Federal Tax-Exempt Status for 'Nonprofit' Hospitals. *Health Matrix: Journal of Law-Medicine, 21*(1), 231-277.

- Schneider, H. (2007). Paying their way? do non-profit hospitals justify their favorable tax Treatment? *Inquiry*, 44(2), 187-199.
- Schuhmann, T. M. (2008). National trends in uncompensated care and profitability: despite a 28 percent rise in the average cost of uncompensated care over five years, hospitals have thus far been able to maintain their margins. *Healthcare Financial Management*, 21(1), 110-118.
- Swords, P. (2011, May). *How to read the IRS form 990 & find out what it means*. Retrieved from <http://www.npccny.org/new990/new990.htm>
- Thia, A. W. (2010). Is Senator Grassley our savior?: the crusade against 'charitable' hospitals attacking patients for unpaid bills. *Iowa Law Review*, 96(2), 761-789.
- Tyrrell III, J. E. (2010). Non-profits under fire: the effects of minimal charity care requirements legislation on not-for-profit hospitals. *Journal of Contemporary Health Law and Policy*, 26(2), 373-402.
- United States health care cost*. (n.d.). Retrieved from <http://www.kaiseredu.org/issue-modules/us-health-care-costs/background-brief.aspx>
- United States Department of the Treasury, Internal Revenue Service. (2012). *Instructions for schedule h (form 990)*. Retrieved from website: www.irs.gov/pub/irs-pdf/i990sh.pdf
- Vladeck, B. C. (2006). Paying for hospitals. *Health Affairs*, 25(1), 34-43.
- Weissman, J. (2005). The trouble with uncompensated hospital care. *New England Journal of Medicine*, 352(12), 1171-3.

Wilen-Berg, J. (2010, July-Aug). What is left of charity care after health reform?

Hastings Center Report, 40(4), 12-13.

Wolfskill, S. J. (2007, March). Caring for the uninsured a financial executive's top 10 list.

Healthcare Financial Management, 61(3), 58-65.

Wolinsky, F. D. (1976). Health services utilization and attitudes toward health

maintenance organization: a theoretical and methodological discussion. *Journal of Health and Social Behavior*, 17(3), 221-236.

Wright, B.W. (2010). Time is money: opportunity cost and physicians' provision of

charity care 1996-2005. *Health Services Research*, 46(6), 1670-1692.

APPENDIX D

Results

Descriptive Statistics

Descriptive statistics for all variables used in this study are located in Table 2. Thirty-one CAHs were used for study in the year 2010. Based on the descriptive statistics, 80 % of the CAHs in the study had 25 beds and there was a minimum of 8 beds. The community benefit per capita for CAHs had a minimum of \$57,440 and maximum of \$535,528 and a mean of \$218,911, which depicts a wide span that can be attributed partly to the CAH bed size. The percentage of individuals, 25 years or older, who had a high school education, ranged from 19% to 93% with an average of 83%. The percentage of females was balanced with an average of 50%. Whites represented a minimum of 76% to a maximum of 98% of the county population (averaging 93%) that indicated a predominately White ethnic group. The American Indian/Native Alaska population was under 1%.

The income per county per capita ranged from \$31,998 to \$58,790 with a median of income of \$40,984. The percentage of individuals greater than or equal to 200% of the poverty level ranged from 8.40% to 22.30% with an average of 14.76%. The percentage of employed individuals ranged from 13% to 48%, with an average 40%. The interpretation of the health ranking variable in this study requires additional explanation. The lower number of the health ranking variable represents better healthcare in a community while an increase in ranking denotes less healthy county. The range for the health ranking for the counties was 5 to 79. The state of Michigan contains 83 counties.

Analysis and Results

The question of interest for this study was, “Is there a relationship between community benefit per capita for CAHs and population characteristics predisposing, enabling and need factors?”

Predisposing

The first set of hypotheses based on the variables in the predisposing factors (measured by level of education, gender and race composition), and the cost of community benefit per capita for CAHs were not supported as a set of variables. There was no statistically significant correlation found for any of the three variables and community benefit per capita.

The correlation between the community benefit per capita for CAHs and the percentage of the population served that was 25 years old and older with a high school education was weak ($r = .119$, p -value = .349) and the coefficient was not statistically significant. A correlation between community benefit per capita and gender composition ($r = -0.28$, p -value = 0.825) was not found. For race as whole there was no support, however, there was a statistical significance for an individual race, whites ($r = 0.050$, p -value = 0.695), a moderate correlation for the African American ($r = 0.436$, p -value = 0.001) and for the American Indian/Alaskan Native ($r = 0.397$, p -value = 0.002).

Enabling Factors

The second set of hypotheses was based on the variables in the enabling factors, (median income, percentage of individuals within 200% of the poverty level and percent of the employed population), and the community benefit per capita for CAHs, with one of the three factors demonstrating the expected results.

Correlation between median income and community benefit per capita demonstrated expected direction ($r = -.341$, $p = .008$). As the median income increases, the amount of community benefit per capita decreases. The correlation between the community benefit per capita for CAHs and the percent of employed population ($r = 0.155$, $p\text{-value} = 0.231$) and the percent of individuals in poverty, equal to or greater than 200% poverty level ($r = 0.098$, $p\text{-value} = 0.444$) were not statistically significant and not reported. Among the hypotheses of relationship between enabling factors and the community benefit per capita for CAHs, one hypothesis, median income, had expected direction while two were rejected.

Need

The final hypothesis was based on the health factor measured by the health ranking of the county and the community benefit per capita for CAHs. The study expected to see an increase in the community benefit as the ranking became lower. There was a weak correlation between the health ranking of the county and community benefit per capita for CAHs ($r = .210$, $p\text{-value} = 0.099$) and was borderline statistically significant. The result demonstrates the higher the per capita community benefit the lower health status ranking of the county, supporting the hypothesis.

The coefficients and corresponding p-values are presented in Table 3.

Discussion

This study provides an important addition to the literature on community benefit per capita and Michigan CAHs. The exploration of the population characteristics utilized Andersen's behavior model of health services utilization (1968) to determine a relationship to population characteristics and community benefit per capita for CAHs. Existing studies related to community benefit and CAHs are limited; therefore, the findings from this research may augment the current literature.

There were several limitations with this study. The first limitation is related to the size of the sample for this study (n=31). The State of Michigan was the focal point of the study, limiting the data availability. Population characteristics related to the model variables is a limitation; as perhaps the design of the model may have excluded a population characteristic. Secondary data was utilized to complete the study; the sources and the control of data collection were limited; thirdly, the possibility of data errors was present; however, the data was collected by government agencies with an assumption that errors are insignificant.

Conclusion/Administrative and Policy Implications

This study examined the relationship of population characteristics and community benefit per capita for CAHs in Michigan. The population characteristics were defined by Andersen's behavioral model of health services utilization defined by predisposing, enabling and need factors. Partial support for two of the hypotheses, median income and health ranking, demonstrated a relationship for community benefit per capita and CAHs (n=31).

In accordance with the Balanced Budget Act (BBA) of 1997, CAHs were afforded the opportunity for 101% reimbursement of allowable costs for Medicare beneficiaries. With the impending enactment of the ACA, reimbursement for CAHs is potentially at risk since ACA has the potential to redirect funding for CAHs (Commins, 2012). Senior leadership of CAHs is obligated to examine the cost of the delivery of healthcare including direct and indirect expenses.

The change in tax-exempt status requirements for non-profit, tax-exempt organizations is probable with the enactment of ACA. Without due diligence of senior leadership and continued monitoring of ACA, a CAH could easily find its fiscal pressures increasing.

Implications of this study have the potential to affect future state and federal policy decisions. As a result of the United States' Federal Budget Act of 1997, CAHs are able to participate in the Medicare Rural Hospital Flexibility Program, which provides grants to states for designation of hospitals as CAH facilities.

There are also several implications for CEOs. With a healthier community and a higher health ranking, CAHs can become more financially secure. CEOs need to be more vigilant regarding community benefit needs and financial viability. CEOs who are interested in reducing community benefit find themselves in an impasse because the CAHs are required to report community benefit.

Summary

The findings of this study revealed partial support for the relationship between two population characteristics and community benefit per capita provided by Michigan CAHs. The research was based on 31 CAHs; however, it is important to understand

why there was a partial support relationship. The first support hypothesis related to median income and community benefit per capita of CAHs. The results indicated expected direction, as the median income increased the community benefit per capita decreased. The second supported hypothesis, health ranking emphasized a weak correlation and borderline statistically significant between the health ranking of the county and community benefit per capita of CAHs. The second hypothesis acknowledged as the health ranking increased the amount of community benefit per capita decreased.

To support the BBA, CAHs were created to serve the rural population, support Medicare policy changes, and relieve financial pressure created by the prospective payments. CAHs are reimbursed at 101% for allowable cost to deliver healthcare to Medicare beneficiaries. One cannot argue that the provision of the BBA appears to enable CAHs to fulfill their mission in spite of population characteristics and community benefit requirements. Michigan CAHs CEOs need to be attentive regarding community benefit needs and financial viability. This includes providing stewardship for finances at all of the CAHs.

APPENDIX E

Recommendation for Future Research

State and federal policy decisions could be impacted by the findings of this study. Expanding the study to include financial indicators with community benefit per capita provided by CAHs is a potential research opportunity. The utilization of a larger sample would enhance the study. A larger study could be conducted by the nine regions identified by the United States Department of Health and Human Services; Health and Services Administration. Longitudinal studies are needed to track CAHs over a period of time. A further study could be performed using data that includes states that are similar in characteristics to obtain a broader understanding of the problem.

As a part of strategic planning for CAHs and skilled nursing facilities a study of the relationship with population characteristics and the requirement of a CHNA would add to the literature on CAHs and skilled nursing facilities. This could include CAHs that are physically attached to the skilled nursing facilities. This supplemental research could provide invaluable information for long range planning as the population characteristics change.

Surveys and face-to-face interviews with patients, CEOs, families, and legislators would offer vital components to research in this area. It is also important to ascertain the impact of the Affordable Healthcare for America Act on CAHs.

Complementing research could include an evaluation of the relationship between system-owned, government run and independent CAHs with population characteristics and community benefit per capita. In addition, useful data can be obtained by examining the relationship between CAHs that directly employ physicians, population

characteristics and community benefit per capita. A comparison between county health ranking health outcome factors, health services components and community benefit per capita of CAHs could expand research findings. Lastly, another study could be conducted to compare the states with and without the designation by CMS as a Medicare Rural Hospital Flexibility Program.

APPENDIX F

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

DATE: June 14, 2012

TO: Catherine Vyskocil-Maxwell
FROM: Central Michigan University Institutional Review Board 1

PROJECT TITLE: [333231-1] The Phenomenon of Uncompensated Care in Michigan Critical Access Hospitals in the 21st Century

REFERENCE #:
SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF NOT RESEARCH
DECISION DATE: June 14, 2012

Thank you for your submission of New Project materials for this project. The Central Michigan University Institutional Review Board 1 has determined this project does not meet the definition of human subject research under the purview of the IRB according to federal regulations.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the CMU IRB office at 989-774-6401 or cmuirb@cmich.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Central Michigan University Institutional Review Board 1's records.

APPENDIX G

GUIDESTAR AGREEMENTS

GuideStar is an informational service that concentrates on reporting United States non-profit corporations. The company collects a variety of information related to non-profit corporations and offers data digitization, database management and development and research, including the collecting of Form 990 and Schedule H for hospitals. GuideStar data is the first repository for United States non-profit data. The data resource for this study was collected from the GuideStar data collection for 2010 CAH Form 990 and Schedule H (“Guidestar,” 2012).

APPENDIX H

RAW DATA

County that a Critical Access Hospital Resides	Name of CAH	Total Community Benefit Expense	Total Community Benefit expense/no. beds	Direct offsetting Revenue	Direct offsetting revenue/no. beds
State of Michigan					
Arenac	St. Mary's of Michigan Standish (Standish Community Hospital)	\$ 1,436,006.00	\$ 57,440.24	\$ 25,045.00	\$ 1,001.80
Allegan	Allegan General Hospital Allegan Michigan	\$ 7,361,312.00	\$ 294,452.48	\$ 2,550,305.00	\$ 102,012.20
Benzie	Paul Oliver Memorial Hospital	\$ 4,284,231.00	\$ 535,528.88	\$ 3,049,397.00	\$ 381,174.63
Cass	Borgess-Lee Memorial Hospital	\$ 9,641,187.00	\$ 385,647.48	\$ 6,440,059.00	\$ 257,602.36
Charlevoix	Charlevoix Area Hospital	\$ 4,742,160.00	\$ 189,686.40	\$ 2,701,764.00	\$ 108,070.56
Clinton	Clinton Memorial Hospital	\$ 3,437,853.00	\$ 137,514.12	\$ 719,528.00	\$ 28,781.12
Eaton	Eaton Rapids Medical Center	\$ 3,464,876.00	\$ 173,243.80	\$ 1,320,310.00	\$ 66,015.50
Eaton	Hayes Green Beach Memorial Hospital	\$ 6,214,257.00	\$ 414,283.80	\$ 4,156,666.00	\$ 166,266.64
Gladwin	Mid Michigan Medical Center	\$ 4,314,073.00	\$ 172,562.92	\$ 2,134,106.00	\$ 85,364.24
Gogebic	Grand View Hospital	\$ 2,564,397.00	\$ 102,575.88	\$ 3,424,680.00	\$ 136,987.20
Houghton	Keweenaw Memorial Medical Center	\$ 3,622,764.00	\$ 144,910.56	\$ 2,297,413.00	\$ 91,896.52
Huron	Harbor Beach Community Hospital	\$ 2,187,040.00	\$ 87,481.60	\$ 1,676,422.00	\$ 67,056.88
Huron	Scheurer Hospital	\$ 2,919,156.00	\$ 116,766.24	\$ 1,517,123.00	\$ 60,684.92
Ionia	Ionia County Memorial Hospital	\$ 4,833,394.00	\$ 193,335.76	\$ 2,212,750.00	\$ 88,510.00

County that a Critical Access Hospital Resides	Name of CAH	Total Community Benefit Expense	Total Community Benefit expense/no. beds	Direct offsetting Revenue	Direct offsetting revenue/no. beds
State of Michigan					
Iron	North Star Health System	\$ 3,424,680.00	\$ 136,987.20	\$ 956,675.00	\$ 38,267.00
Lenawee	Herrick Memorial Hospital	\$ 7,030,255.00	\$ 281,210.20	\$ 5,148,282.00	\$ 51.54
Mackinac	Mackinaw Straits Hospital	\$ 7,877,953.00	\$ 525,196.87	\$ 4,659,712.00	\$ 310,647.47
Manistee	West Shore Medical Center				
Marquette	Bell Memorial Hospital	\$ 7,224,070.00	\$ 288,962.80	\$ 3,979,476.00	\$ 159,179.04
Montcalm	Kelsey Memorial Hospital	\$ 3,865,229.00	\$ 154,609.16	\$ 3,013,957.00	\$ 120,558.28
Montcalm	Sheridan Community Hospital	\$ 2,500,971.00	\$ 100,038.84	\$ 962,856.00	\$ 38,514.24
Oceana	Mercy Health Partners Campus	\$ 3,895,647.00	\$ 162,318.63	\$ 3,439,656.00	\$ 143,319.00
Ontonagon	Ontonagon Memorial Hospital	\$ 3,292,909.00	\$ 131,716.36	\$ 1,057,732.00	\$ 44,072.17
Osceola	Spectrum Health -Reed City Campus	\$ 11,397,900.00	\$ 455,916.00	\$ 7,145,945.00	\$ 285,837.80
Sanilac	Deckerville Community Hospital	\$ 2,722,149.00	\$ 181,476.60	\$ 4,951,974.00	\$ 330,131.60
Sanilac	Marlette Community Hospital	\$ 9,652,031.00	\$ 386,081.24	\$ 6,063,218.00	\$ 242,528.72
Schoolcraft	Munising Memorial Hospital	\$ 3,702,211.00	\$ 148,088.44	\$ 2,085,293.00	\$ 83,411.72
Schoolcraft	Schoolcraft Memorial Hospital	\$ 2,888,809.00	\$ 115,552.36	\$ 901,037.00	\$ 36,041.48
Tuscola	Caro Community Hospital	\$ 2,079,206.00	\$ 83,168.24	\$ 922,861.00	\$ 36,914.44
Tuscola	Hills and Dales General Hospital	\$ 2,698,505.00	\$ 107,940.20	\$ 1,392,041.00	\$ 55,681.64
Tuscola	McKenzie Memorial Hospital	\$ 4,141,946.00	\$ 165,677.84	\$ 2,390,824.00	\$ 95,632.96
VanBuren	Lakeview Community Hospital	\$ 8,896,866.00	\$ 355,874.64	\$ 3,993,837.00	\$ 159,753.48

County that a Critical Access Hospital Resides	Name of CAH	Net Community Benefit Expense	Net Community benefit expense/no. beds	Population by County	No. of beds	>25 with High School Diploma	>25 with a Bachelors Degree
State of Michigan							
Arenac	St. Mary's of Michigan Standish (Standish Community Hospital)	\$ 1,410,961.00	\$ 56,438.44	15899	25	1413421.1	3084.406
Allegan	Allegan General Hospital Allegan Michigan	\$ 4,811,007.00	\$ 192,440.28	111408	25	90686.112	11809.248
Benzie	Paul Oliver Memorial Hospital	\$ 1,234,834.00	\$ 154,354.25	17525	8	15754.975	4416.3
Cass	Borgess-Lee Memorial Hospital	\$ 3,201,128.00	\$ 128,045.12	52293	25	44553.636	23298432.87
Charlevoix	Charlevoix Area Hospital	\$ 2,040,396.00	\$ 81,615.84	25949	25	23639.539	6357.505
Clinton	Clinton Memorial Hospital	\$ 2,718,325.00	\$ 108,733.00	75382	25	70105.26	52846747.09
Eaton	Eaton Rapids Medical Center	\$ 2,144,566.00	\$ 107,228.30	107759	20	99569.316	26185.437
Eaton	Hayes Green Beach Memorial Hospital	\$ 2,057,591.00	\$ 137,172.73	107759	15	99569.316	26185.437
Gladwin	Mid Michigan Medical Center	\$ 2,179,967.00	\$ 87,198.68	25692	25	21118.824	2851.812
Gogebic	Grand View Hospital	\$ 956,675.00	\$ 38,267.00	16427	25	14817.154	3055.422
Houghton	Keweenaw Memorial Medical Center	\$ 1,325,351.00	\$ 53,014.04	36628	25	9852.932	32928.572
Huron	Harbor Beach Community Hospital	\$ 510,618.00	\$ 20,424.72	33118	25	28017.828	4570.284
Huron	Scheurer Hospital	\$ 1,402,033.00	\$ 56,081.32	33118	25	28017.828	4570.284
Ionia	Ionia County Memorial Hospital	\$ 2,620,644.00	\$ 56,081.32	63905	25	55405.635	8371.555

County that a Critical Access Hospital Resides	Name of CAH	Net Community Benefit Expense	Net Community benefit expense/no. beds	Population by County	No. of beds	>25 with High School Diploma	>25 with a Bachelors Degree
State of Michigan							
Iron	North Star Health System	\$ 2,468,005.00	\$ 1,530.68	11817	25	10434.411	1233034.348
Lenawee	Herrick Memorial Hospital	\$ 1,881,973.00	\$ 75,278.92	99892	25	19179.264	8490.82
Mackinac	Mackinaw Straits Hospital	\$ 3,218,241.00	\$ 214,549.40	11113	15	9901.683	2233.713
Manistee	West Shore Medical Center			24733	25	21492.977	4155.144
Marquette	Bell Memorial Hospital	\$ 3,244,594.00	\$ 129,783.76	67077	25	61509.609	19921.869
Montcalm	Kelsey Memorial Hospital	\$ 851,272.00	\$ 34,050.88	63342	25	53840.7	8044.434
Montcalm	Sheridan Community Hospital	\$ 1,538,115.00	\$ 61,524.60	63342	25	53840.7	8044.434
Oceana	Mercy Health Partners Campus	\$ 455,991.00	\$ 18,999.63	25949	24	21459.823	5568609.47
Ontonagon	Ontonagon Memorial Hospital	\$ 2,235,177.00	\$ 89,407.08	6780	25	6122.34	1118.7
Osceola	Spectrum Health -Reed City Campus	\$ 5,221,955.00	\$ 208,878.20	23582	25	20091.864	2806.258
Sanilac	Deckerville Community Hospital	\$ (2,229,825.00)	\$ (148,655.00)	43114	15	36733.128	4742.54
Sanilac	Marlette Community Hospital	\$ 3,588,813.00	\$ 143,552.52	43114	25	36733.128	4742.54
Schoolcraft	Munising Memorial Hospital	\$ 3,336.47	\$ 133.46	8485	25	7339.525	1120.02
Schoolcraft	Schoolcraft Memorial Hospital	\$ 1,387,772.00	\$ 55,510.88	8485	25	7339.525	1120.02
Tuscola	Caro Community Hospital	\$ 1,156,345.00	\$ 46,253.80	55729	25	47258.192	6910.396
Tuscola	Hills and Dales General Hospital	\$ 1,306,464.00	\$ 52,258.56	55729	25	47258.2	6910.4
Tuscola	McKenzie Memorial Hospital	\$ 1,751,122.00	\$ 70,044.88	55729	25	47258.2	6910.4
VanBuren	Lakeview Community Hospital	\$ 4,903,049.00	\$ 196,121.96	76258	25	64666.784	13955.214

County that a Critical Access Hospital Resides	Name of CAH	Females	Males	White	African American	American Indian/Alaska Native	Asian	Native Hawaiian/Pacific Islander	Other	Two or more races
State of Michigan										
Arenac	St. Mary's of Michigan Standish (Standish Community Hospital)	7843	8056	15393	29	190	29	9	44	205
Allegan	Allegan General Hospital Allegan Michigan	55935	55473	103513	1358	636	648	22	3082	2149
Benzie	Paul Oliver Memorial Hospital	8824	8701	16843	72	252	45	0	89	224
Cass	Borgess-Lee Memorial Hospital	26199	26094	46496	2821	504	339	10	575	1548
Charlevoix	Charlevoix Area Hospital	13171	12778	24806	80	382	103	11	93	474
Clinton	Clinton Memorial Hospital	38325	37057	70018	1549	333	1115	15	868	1484
Eaton	Eaton Rapids Medical Center	55164	52595	94561	6811	466	1809	18	1334	2760
Eaton	Hayes Green Beach Memorial Hospital	55164	52595	94561	6811	466	1809	18	1334	2760
Gladwin	Mid Michigan Medical Center	12853	12839	25111	60	122	76	2	73	248
Gogebic	Grand View Hospital	1210	1220	2363	3	20	8	0	8	28
Houghton	Keweenaw Memorial Medical Center	16805	19823	34596	198	206	1054	17	65	492
Huron	Harbor Beach Community Hospital	16680	16438	32286	122	107	148	4	147	304
Huron	Scheurer Hospital	16680	16438	32286	122	107	148	4	147	304
Ionia	Ionia County Memorial Hospital	29591	34314	58563	3019	289	248	7	855	924

County that a Critical Access Hospital Resides	Name of CAH	Females	Males	White	African American	American Indian/Alaska Native	Asian	Native Hawaiian/Pacific Islander	Other	Two or more races
State of Michigan										
Iron	North Star Health System	5996	5821	11469	14	112	32	2	24	164
Lenawee	Herrick Memorial Hospital	49434	50458	92174	2539	475	519	26	1967	2192
Mackinac	Mackinaw Straits Hospital	5501	5612	8499	57	1023	22	2	19	591
Manistee	West Shore Medical Center	11927	12806	22811	723	516	67	14	141	461
Marquette	Bell Memorial Hospital	33183	33894	62911	1141	1161	385	13	121	1345
Montcalm	Kelsey Memorial Hospital	30595	32747	59752	1483	298	224	19	582	984
Montcalm	Sheridan Community Hospital	30595	32747	59752	1483	298	224	19	582	984
Oceana	Mercy Health Partners Campus	13226	13344	23952	119	285	61	4	1618	531
Ontonagon	Ontonagon Memorial Hospital	3284	3496	6594	6	73	11	1	8	87
Osceola	Spectrum Health -Reed City Campus	11809	11719	22791	133	128	49	6	43	378
Sanilac	Deckerville Community Hospital	21799	21315	41649	150	195	144	7	455	514
Sanilac	Marlette Community Hospital	21799	21315	41649	150	195	144	7	455	514
Schoolcraft	Munising Memorial Hospital	4285	4200	7432	11	744	13	0	7	278
Schoolcraft	Schoolcraft Memorial Hospital	4285	4200	7432	11	744	13	0	7	278
Tuscola	Caro Community Hospital	27783	27946	53578	634	268	160	17	378	694
Tuscola	Hills and Dales General Hospital	27783	27946	53578	634	268	160	17	378	694
Tuscola	McKenzie Memorial Hospital	27783	27946	53578	634	268	160	17	378	694
VanBuren	Lakeview Community Hospital	38455	37803	66129	3100	669	313	17	3999	2031

County that a Critical Access Hospital Resides	Name of CAH	Residents between the ages of 18 and 64	Median Income	Number Employed	Residents > 200% Poverty	Health Ranking
State of Michigan						
Arenac	St. Mary's of Michigan Standish (Standish Community Hospital)	12704	34,116	6217	2623.335	72
Allegan	Allegan General Hospital Allegan Michigan	67746	45,879	46934	13257.552	14
Benzie	Paul Oliver Memorial Hospital	10230	43,136	7338	1945.275	51
Cass	Borgess-Lee Memorial Hospital	31680	42,420	22074	7268.727	63
Charlevoix	Charlevoix Area Hospital	15400	43,530	11445	2932.237	25
Clinton	Clinton Memorial Hospital	47515	58,790	33391	6407.47	5
Eaton	Eaton Rapids Medical Center	67550	52,300	51394	9806.069	12
Eaton	Hayes Green Beach Memorial Hospital	67550	52300	51394	9806.069	12
Gladwin	Mid Michigan Medical Center	14681	36,064	8519	4881.48	77
Gogebic	Grand View Hospital	1410	31,998	6397	2874.725	27
Houghton	Keweenaw Memorial Medical Center	6798	34,174	15483	8168.044	10
Huron	Harbor Beach Community Hospital	19078	38,274	13958	4404.694	33
Huron	Scheurer Hospital	19078	38274	13958	4404.694	33
Ionia	Ionia County Memorial Hospital	40797	42,719	24938	9841.37	21

County that a Critical Access Hospital Resides	Name of CAH	Residents between the ages of 18 and 64	Median Income	Number Employed	Residents > 200% Poverty	Health Ranking
State of Michigan						
Iron	North Star Health System	6688	34,911	4907	1500.759	7
Lenawee	Herrick Memorial Hospital	62184	55,149	39934	8390.928	15
Mackinac	Mackinaw Straits Hospital	6552	37,072	5269	1633.611	30
Manistee	West Shore Medical Center	14909	37,479	9850	3264.756	62
Marquette	Bell Memorial Hospital	44720	44,239	32086	8854.164	9
Montcalm	Kelsey Memorial Hospital	39109	36,701	22253	12034.98	50
Montcalm	Sheridan Community Hospital	39109	36701	22253	12034.98	50
Oceana	Mercy Health Partners Campus	15439	37,629	11973	4982.208	61
Ontonagon	Ontonagon Memorial Hospital	3920	36,566	2562	861.06	79
Osceola	Spectrum Health -Reed City Campus	13697	37,840	3022	4362.67	45
Sanilac	Deckerville Community Hospital	25347	39,646	17266	6380.872	56
Sanilac	Marlette Community Hospital	25347	39646	17266	6380.872	56
Schoolcraft	Munising Memorial Hospital	4996	37,180	3364	1493.36	60
Schoolcraft	Schoolcraft Memorial Hospital	4996	37,180	3364	1493.36	60
Tuscola	Caro Community Hospital	33807	40,808	23133	8805.182	38
Tuscola	Hills and Dales General Hospital	33807	40808		8805.182	38
Tuscola	McKenzie Memorial Hospital	33807	40808		8805.18	38
VanBuren	Lakeview Community Hospital	46327	43659		12048.764	46