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Caring for the Country: Physician Retention at Cortland Regional Medical Center

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CARING FOR THE COUNTRY: PHYSICIAN RETENTION AT CORTLAND REGIONAL MEDICAL CENTER

BY

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CAPSTONE PROJECT

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Executive Summary

Introduction

Americans living in rural areas of the United States have historically suffered from a lack of adequate health care. As the focus of this study, the Cortland County area of central upstate New York State is a rural community of 74,000 that has been served for the last 118 years by Cortland Regional Medical Center (CRMC). CRMC is the federally designated "sole community hospital" which means that there are no other hospitals within 45 minutes of the medical center ("Department of Health and Human Services," 2009). Its HPSA designation indicates that on average, each primary care physician must allocate services to more than 1,500 residents. As a result of its high doctor to patient ratio, Cortland County is also recognized by New York State as a Regents-designated Physician Shortage Area.

Problem Statement

For rural hospitals like CRMC, bringing in new doctors is only part of the solution to address the critical shortage of physicians. CRMC has identified a 49 percent deficit in the number of physicians necessary to meet the community's need for health care. From 1998 to 2008, an average of 22 percent of medical staff resigned from Cortland Regional Medical Center each year. This reflects a significantly higher rate of attrition than the national average of nine percent. And, 76 percent of physicians that resigned were retained five years or less which compares unfavorably to a reported national standard of 54 percent.

Improving physician retention will have a significant impact on medical center finances and the "soft" costs of a physician vacancy such as lost staff productivity, low

employee morale, and the ability to recruit and retain other doctors. Most seriously, not enough physicians causes critical gaps in patient quality and continuity of care. CRMC can best stem the tide of physicians leaving Cortland County by identifying the factors related to rural physician attrition. In so doing, the medical center will best inform its strategy and action plan to not only recruit needed doctors, but to retain them for the long-term.

Research Questions

To assist CRMC in sustaining the critical number and compliment of doctors, this study will seek to discover the factors that influence the likelihood that a physician will stay in practice in Cortland County:

1. What factors predict physician retention in Cortland County?
2. How can Cortland Regional Medical Center successfully retain more physicians?

Literature Review

Three distinct bodies of literature were examined to gain a clear understanding of the factors that may contribute to the success of physician retention in rural communities: rural physician satisfaction, rural physician turnover, and rural physician retention. As further evidenced in empirical studies, the factors were identified as predicting rural physician retention were further defined as age, specialty, workload, clinical autonomy, positive professional relationships, rural preference, spousal and family contentment, and community integration.

Methodology

To address the research questions posed in this study, information on each of the

eight factors identified in the literature was collected for active physicians with start dates 1999-2004. It was found in pre-existing sources provided by Cortland Regional Medical Center and discovered through research of public records. Pearson chi square tests and independent samples *t*-tests were conducted to answer whether the any of the eight independent variables proved to be significantly related to the retention of physicians in Cortland.

Findings

When the results of statistical tests were analyzed, six main findings emerge:

- Finding #1: Positive professional relationships among medical staff are related to physician retention at Cortland Regional Medical Center.
- Finding #2: There is a correlation between spousal and family satisfaction and whether a physician is retained.
- Finding #3: Physician integration in the community was also shown to have a statistically significant relationship with retention.
- Finding #4: There was a relationship between older physicians and retention. The average age of physicians who left CRMC (36 years) is five years younger than physicians who stayed (41 years).
- Finding #5: Rural preference was shown to be related to retention. 90 percent of physicians who left practice in Cortland did not have any prior rural experience or expressed preference for rural life, while 72 percent of physicians who were retained did indicate some rural preference.
- Finding #6: Workload, specialty, and clinical autonomy were not significantly related to retention of doctors at CRMC.

Recommendations

Based on the findings of this study the following five recommendations are presented to Cortland Regional Medical Center for successfully retaining more physicians:

- Recommendation 1: Pre-interview phase – Based on study findings, CRMC should recruit physicians who are a good "fit" for work and life in Cortland County.
- Recommendation 2: Interview phase - CRMC should provide prospects with an accurate preview of the practice opportunity, as well as family and community life. The interview should unearth expectations on both sides through direct questions that can help determine the physician's understanding of the factors necessary for success in rural practice. It is also important to take into account the needs of the candidate's family and carefully evaluate their willingness to become a part of the community in Cortland.
- Recommendation 3: Post-interview, pre-employment phase - CRMC should remain in frequent contact with the physician and family before they move to the area. Efforts should be undertaken to assist with the move and initial introductions, and to make the doctor and his family feel welcome.
- Recommendation 4: Post-hire phase - CRMC should work to "enculturate" new physicians though a first-year orientation program and by establishing a spouses' network. Finally, CRMC should conduct exit interviews with physicians who voluntarily leave as well as interviews with physicians who are retained five years or more as sources of information on improving physician satisfaction.

Conclusion

While past efforts to recruit physicians have shown success, the last ten years have also shown a turnover rate at Cortland Regional Medical Center more than twice the national average. Data collected and findings reported in this study may assist CRMC to inform a more comprehensive physician retention strategy. Improved physician retention should be assisted by identifying characteristics identified as related to retention during the recruitment process, and fostering the behaviors and attitudes identified by the study as soon as doctors begin practice in Cortland.

To the pillars of my life…

my mother, for your love and the many sacrifices you endured,

thank you for always reminding me to dream…

my husband, for being my best friend and most ardent fan,

thank you for giving me all I needed to make this dream come true…

my children…for filling my life with laughter and love,

thank you for inspiring my dreams of a better world.

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I am indebted to my colleagues at Cortland Regional Medical Center. To my mentor and friend, Brian Mitteer, I thank him for his leadership and encouragement in our work together, and for expanding our collaboration to help me achieve this degree. Thank you to Christina Kisacky, M.B.A. and Robert Karpman, M.D., M.B.A. for sharing their considerable knowledge about the unique motivations of rural physicians.

To LaVerna Mastronardi, a role model for any administrator who strives to temper strength and intelligence with gentle elegance and grace, I am grateful to her for sharing her files, her time, and her stories.

And, I thank my classmates, now turned friends for the most challenging and enriching experience of my life. I so enjoyed our time together.

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Introduction

Historically, rural America has suffered from a lack of adequate health care. As a significant problem that continues today, 50 million people or approximately 25 percent of the American population live in areas considered rural. In comparison, less than 12 percent of physicians practice in rural areas (Feeley, 2003). 50 percent of rural counties in the United States are designated Health Professional Shortage Areas, where the mean patient to doctor ratio is 1,845:1 ("Designated Health Professional Shortage Areas (HPSA) Statistics," 2009). As the focus of this study, Cortland County, located in central upstate New York State, is one of twenty of New York's twenty-six rural counties currently designated as a Health Professional Shortage Area ("Designated Health Professional Shortage Areas Statistics," 2009).

With fewer than 50,000 residents, Cortland County is defined by the Federal Office for Management and Budget as a rural community ("University of Nebraska Medical Center," 2009). Approximately one-third of Cortland County's residents live in the city of Cortland, which has a population of 18,423. Moreover, the U.S. Census Bureau describes rural communities as those with a population density of less than 1,000 people per square mile. The majority of Cortland County's population live in towns and villages outside of the City of Cortland where residents are highly dispersed, with an estimated 97.2 persons per square mile ("U.S. Census Bureau Quick Facts," 2009).

As the only hospital in Cortland County since 1891, Cortland Regional Medical Center, Inc. (CRMC) is a private, not-for-profit organization, with a service area of 74,000 people. The service area includes Cortland County and bordering regions of the contiguous counties of Broome, Cayuga, Chenango, Madison, Onondaga, and Tompkins.

A 181-bed acute care facility, CRMC is a federally designated "sole community hospital" with the hospital located at least 35 miles from other like hospitals ("Department of Health and Human Services Sole Community Hospital Fact Sheet," 2009). CRMC is typical among rural medical centers as it provides a high percentage of outpatient services, treats an older patient mix and a substantial number of mental health patients (Hyatt, 1991). Many of CRMC patients are low-income and its HPSA designation means that on average each primary care physician must allocate services to more than 1,500 residents ("Department of Health and Human Services ," 2009). As a result of its high doctor to patient ratio, Cortland County is also recognized by New York State as a Regents-designated Physician Shortage Area ("Healthcare Association of New York State "Doctors Across New York" program," 2009).

Problem Statement

Physician Shortage

A report by the national physician recruitment firm Merritt Hawkins and Associates determined the number of physicians in various specialties required to meet the needs of a population of 100,000 people (Eoannou, 2009). When the numbers are adjusted to reflect Cortland Regional Medical Center's service area of 74,000, the results show Cortland faces a 49 percent physician deficit across almost every subspecialty in its efforts to meet the minimum health care needs of the community (see Table 1). Adding to the existing shortage is the impending retirement of a significant number of local physicians. The average retirement age of primary care physicians is 62 years old (Martin, 2000). Within this framework, in the next ten years, more than half of the 80 doctors currently practicing

medicine in Cortland County are expected to retire.

Table 1: Physician Needs Assessment Based on Cortland County Population

Physician Needs Assessment Based on Population, 2009				
Specialty	**Need/100,000**	**Need/74,000**	**Current Staff**	**Difference**
Family Practice	28.5	21.1	13	8.1
Internal Medicine	22	21.3	9	12.3
Pediatrics	11.5	8.5	5	3.5
OB/GYN	10.3	7.6	3	4.6
Orthopedics	5.8	4.3	2	2.3
General Surgery	8	6	4	2
Cardiology	5	3.6	1	2.6
Gastroenterology	2.3	1	1	0
Neurology	2	1.5	.5	1
ENT	2.5	1.9	1	.9
Urology	2.8	2.1	1	1.1
Total	100.7	78.9	40.5	38.4

Source: (Eoannou, 2009)

Physician Retention

For rural medical centers like CRMC, recruiting new doctors is only part of the solution in addressing the critical need for physicians. Physician retention over the long-term must be the primary goal or even the best recruitment strategy is going to fail. To successfully address its physician needs, CRMC must make physician retention a priority by implementing strategies for retaining physicians that begin during the recruitment phase and continue through employment (Merriman, 2007).

From 1998-2008, 160 physicians resigned from the medical staff at Cortland Regional Medical Center. With its full staff averaging 72 physicians over the last ten years, 22 percent of CRMC's medical staff resigned on average each year compared to a national average turnover rate of nine percent. 76 percent of physicians that resigned during this timeframe were retained five years or less. This percentage compares

unfavorably to a recent national survey of physician retention that reported 54 percent of physicians leaving their medical group within the first five years ("2008 Physician Retention Survey," 2009). If Cortland County had maintained physicians at or above national averages, the result would have been a significantly smaller physician shortage; a reduced need for recruitment; and an increase in uninterrupted health care for the community.

Retaining qualified physicians is critical to the success of Cortland Regional Medical Center. Improving physician retention has a significant impact on medical center finances. The total expense for replacing one primary care physician is approximately $250,000, according to 2005 Press Ganey data. Cejka Search (2009) estimates an average cost of $3,000 per physician candidate and spouse just in interview expenses alone. Outsourced recruiting typically cost between $35,000 and $70,000 for each candidate hired. Scott (1998) expressed the loss of annual gross billings for a single primary care physician as being up to $400,000 and a loss of up to $500,000 in gross revenues for the medical center. There are other costs including lost patient revenue to the practice, lost referral revenues, as well as guaranteed salaries and signing bonuses (Misra-Hebert, 2004). These estimates do not include the "soft" costs of a physician vacancy such as disrupted work processes, lost staff productivity, low employee morale, gaps in patient quality and continuity of care, or the impact on the organization's ability to recruit and retain other physicians (Merriman, 2007).

As an essential source of health services for Cortland County and the surrounding area, Cortland Regional Medical Center has faced considerable challenges in maintaining the necessary level of physicians required to meet the community's need, due in part to

high rates of physician attrition. CRMC can best stem the tide of physicians leaving Cortland County by identifying the factors related to rural physician attrition. In so doing, the medical center will best inform its strategy and action plan to not only recruit needed doctors, but to retain them for the long-term. To assist CRMC in sustaining the critical number and compliment of doctors, this study will seek to discover the factors that influence the likelihood that a physician will stay in practice in Cortland County.

Research Questions

1. What factors predict physician retention in Cortland County?
2. How can Cortland Regional Medical Center successfully retain more physicians?

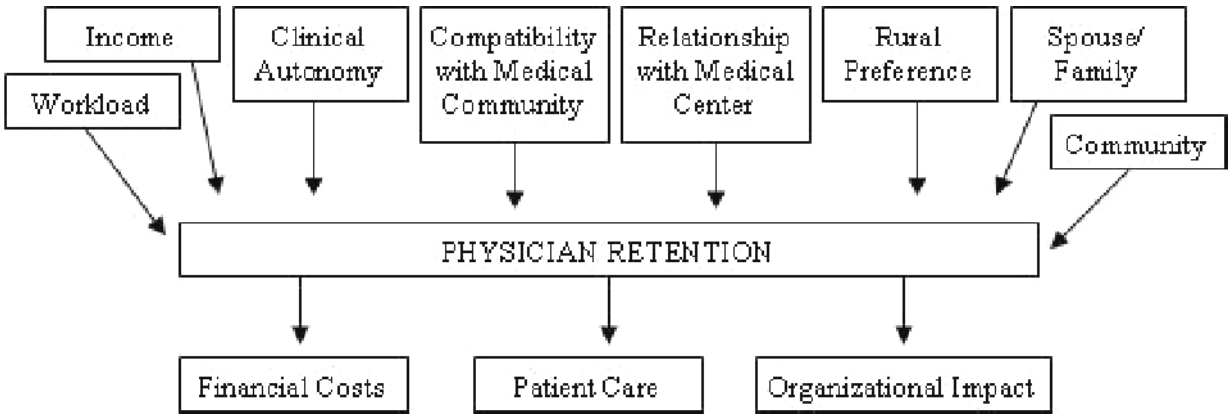
Conceptual Framework

Since the early part of the twentieth century, studies have explored the shortage of physicians in the rural United States. Despite ample research into this issue, the problem still exists today. In rural health literature, recruitment is often highlighted as the driving force behind physician shortages in rural communities. However, more recent studies of rural physician attrition have posited that retention strategies hold more promise in addressing the problem over the long-term because the factors associated with it are more modifiable (Hancock, et al., 2009).

The professional factors that influence retention include workload, clinical autonomy, compatibility with the local medical community, and commitment to the medical center (Hancock, et al., 2009). Personal factors that influence rural physician retention include prior rural experience, spousal and family satisfaction, and community engagement (Cutchin, 1997a; D. E. Pathman, et al., 1996). As previously stated, the impact of successful physician retention on a medical facility like Cortland Regional

Medical Center is extensive. Maintaining a full, active medical staff has a positive effect on the facility's operating budget, the morale of both clinical and support staff, and most of all, the ability to provide critical health care to a rural community (see Figure 1).

Figure 1: Conceptual model of physician retention: determinants and consequences



Source: (Misra-Hebert, 2004a)

Rural medical centers need a sufficient complement of physicians to achieve their missions to provide quality, sustainable health care to the communities they serve. Continuity of this important resource is critically important because many rural hospitals serve as the sole provider of health care for local residents. There exist significant challenges to retaining physicians in rural communities once they have been recruited and begun practice. To address the need to create incentives for physicians to stay in Cortland County and to resolve the impediments to their remaining, literature will be reviewed that focuses on the factors that influence physician retention, as well as job satisfaction and turnover as they relate to doctors remaining long-term in rural practice.

Literature Review

Physician Job Satisfaction

Studies have identified specific areas of satisfaction associated with longer retention in a rural practice. Personal, professional, and community concerns were all found to be relevant factors within existing literature when considering physician satisfaction, as well as how these factors relate to the physician's decision to remain in one particular rural community (Pope, et al., 1998). Overall, there was a positive correlation between physician retention and job satisfaction in studies that measured strong commitment to the medical center and physician and family satisfaction with the rural community (Misra-Hebert, 2004b). This conclusion was documented by one study in northern Florida that asked physicians what factors influenced doctors to remain in their rural practice: 50 percent of respondents cited preference for a rural lifestyle; 32 percent cited spousal and family satisfaction; another 32 percent reported the satisfaction from serving the community (D. E. Pathman, Konrad, King, Spaulding, & Taylor, 2000).

Cutchin (1997b) organized physician satisfaction into three main categories: (1)confidence in medical abilities, degree of on-call coverage, social and cultural networks; (2)challenge and diversity in practice, involvement in community affairs, ability to develop health care resources; (3)roles played and responsibilities taken, the physician seeing herself as belonging to the community. While a broad assessment of the literature reveals some disagreement on the factors associated with physician satisfaction, the most cited causes of contentment in rural doctors were aligned with Cutchin's framework. They were (1)relationships with patients (Mainous, Ramsbottom-Lucier, & Rich, 1994), (2)clinical autonomy (D. E. Pathman, Konrad, & Williams, 2002), and

(3)physician self-identification as a public servant through care for medically needy members of the community (Williams, Konrad, & Scheckler, 2001).

Rural physician satisfaction was positively correlated to rural lifestyle factors as well, such as opportunities to enjoy outdoor activities, quality of schools for children, and the amenities of community living (Shortell, Alexander, & Budetti, 2001). Physicians also greatly valued a supportive and active professional connection with colleagues (Kelley, Kuluski, Brownlee, & Snow, 2008). Just as important was the physicians' perceived support by the rural community at-large (Kelley, et al., 2008; Mainous, et al., 1994).

Physicians' intentions to leave a practice are related to job dissatisfaction as well (Mainous, et al., 1994; D. E. Pathman, et al., 2002; Williams, et al., 2001). In particular, several studies documented the association between the physicians' intentions to leave their practices within two to three years and dissatisfaction with clinical practice and their relationship with the community (Misra-Hebert, 2004b; D. E. Pathman, et al., 2002). A study that focused on the practice characteristics and changing needs of rural physicians and their families stated that 20 percent of respondents in a Pennsylvania survey said that they were considering leaving rural practice due to a lack of time for themselves and their families; long work hours with heavy workloads, lower incomes and reimbursements, and professional isolation. Other concerns included inferior public education system for children, lack of technology and trained personnel at their local hospital, lack of adequate housing, lack of professional esteem, and spousal dissatisfaction (Forti, Martin, Jones, & Herman, 1995). Specifically, there was a strong association with a rural physician's intent to leave and dissatisfaction with frequent on-call responsibilities.

Dissatisfaction with workload can be attributed to not having enough time off. In

one study, physicians who shared on-call hours with only one other physician were almost four times as likely to consider leaving rural practice as those who shared call with more than one person. Similarly, physicians in solo practice were more than three times more likely to consider leaving rural practice than those in group practice (Forti, et al., 1995). In another study, a rural physician interviewed stated that his frustration centered on patients who use him for night call only, preferring to see other physicians in a city farther away for regular care (Bowman, Crabtree, Petzel, & Hadley, 1997). In this case, dissatisfaction is with the nature of the call duty that does not serve to build the physician's practice, as opposed to the amount of on-call responsibilities the physician must shoulder.

Dissatisfaction with workload was also related to a physician's unique relationship with the community. Doctors perceived patient satisfaction as being a top priority as patients can take their business out of town. To establish a profitable practice, many rural physicians allowed for "curbside care" – answering questions in the local grocery store aisle or over the telephone at night, despite the negative impact on the quality of their family life and the reduction in their personal time and privacy (Mainous, et al., 1994).

In the last decade, physician job satisfaction has decreased because of increased workload that has been coupled with lower reimbursement and feelings of powerlessness and disenfranchisement (Morrison, 2000). Smith (2000) coined the phrase "hamster health care" to describe physicians' feelings that they are hamsters on a treadmill, running faster without getting anywhere. These emotions were reported as resulting from an inability to control trends in health care, including reimbursement pressures, an aging

population, migration of care to outpatient settings, and nursing shortages.

Physician Turnover

As cited in the literature, it is important to understand the particular determinants and consequences of physician attrition in rural communities. Factors associated with physician turnover include (1)professional, such as poor "fit" with medical staff, lack of autonomy in practice and clinical decisions, and "monotony of work" (McHardy, 1958); (2)financial, such as dissatisfaction with compensation (Misra-Hebert, 2004b); (3)administrative conflicts, such as disagreement on the principles of management and lack of participation in policy-making (Misra-Hebert, 2004b); and (4)personal, such as personality conflicts, cultural differences, and lack of community interaction (Ross, 1969). As an example, a retention study commissioned by Penn State's Geisinger Health System showed the most significant reasons for physician turnover as lack of physician "fit" with partners and practice environment; lack of clear communication of expectations to physicians during recruitment; absence of two-way communication between physicians and practice management; failure to include physicians in the decision-making process; and lack of appreciation or recognition of physicians (Scott, 1998). Other important factors related to physician turnover include lack of local family ties (Buchbinder, Wilson, & Mellick, 2001), spousal dissatisfaction (McHardy, 1958), and the location of the practice (Ross, 1969). In an overview of the literature, no consistent association was observed between specific specialty or other variables such as gender, ethnicity, marital status, or board certification and turnover (Misra-Hebert, 2004b).

Studies suggested that rural-raised physicians and doctors who are active participants in their communities exhibited far lower turnover rates than their urban

counterparts who reflect a preference for more compartmentalized work and personal lives, and a lesser need to engage in community service. A rural background has been associated with physician readiness for rural living and rural practice. Physicians who are prepared to live and practice in rural and small town communities showed higher success in remaining in rural practice. Exposure to rural life through recreation, education, long-term residence, or a combination of these "provides an early foundation of familiarity, resilience, and community integration" (Hancock, et al., 2009).

Of doctors who were prepared for small town, rural living that were retained five years or longer, 74 percent reported their spouse was happy living in the community and 66 percent stated that they were satisfied with their call group (Savageau, 2008). Another study reported that more than 50 percent of female physicians who were in practice in rural communities five years or longer were raised in towns of less than 50,000 residents (Brooks, Walsh, & Mardon, 2002). 54 percent of physicians in a third study indicated that growing up in a rural area provided them with the best preparation for rural practice. Those who cited they felt "more prepared" or "prepared" were twice as likely as self-identified "unprepared" physicians to stay in a particular practice six years or more (D. E. Pathman, Konrad, T.R., & Agnew, C.R., 2003).

Rural residency through a dedicated rotation also predicted retention by preparing doctors for both community and as well as practice life (Colwill, 2003). Rural exposure facilitated future rural practice through four major pathways: familiarity, sense of place, community involvement, and their desire to live happy and satisfying lives (Cutchin, Norton, & Quan, 1994; Hancock, et al., 2009; D. E. Pathman, 2002).

Several studies stressed the relationship between a physician's social network and

turnover. Social network research showed that lack of community integration predicts turnover at nearly twice the rate, when compared with job satisfaction and job commitment (Cutchin, 1997a; Cutchin, et al., 1994; Feeley, 2003; Hart, 1999). Physicians who are more central in the network, that is, those who interact with more people in their community, were more likely to grow roots and remain in their practice (Feeley, 2003).

Physician Retention

Physicians who reported an intention to stay in practice most often cited personal and family factors, followed by professional factors, then community factors, and last, financial factors as influencing their decision (Kelley, et al., 2008). Factors that predicted rural physicians leaving with their practice were (1)working in a practice owned by others (being subject to others decisions); (2)being on-call three or more times a week (burnout risk); (3)lower than average income; and (4)physicians working in poorer communities (stress factor) (Pope, Grams, Whiteside, & Kazanjian, 1998). In comparison, reasons for staying in rural practice were more personal and included children's education, spousal job opportunities, recreation and other opportunities (D. E. Pathman, Konrad, T.R., & Agnew, C.R., 2003). Cutchin (1997b) surveyed rural physicians in eastern Kentucky and asked them to report factors that would influence their plans to stay with their current practice, finding that relief coverage, quality of schools, and compatibility with others in the medical community were the most commonly cited indicators.

Socio-cultural integration existed as another incentive to physician retention. Socio-cultural integration was defined as acceptance by the community, recreational

opportunities, spousal happiness, family ties to the area, religious support system, quality of local schools, availability of quality housing, and compatible practice partners (Cutchin, et al., 1994). A physician's spouse was highly influential in the decision to move to or remain in a rural practice location. Rabinowitz (2001) surveyed 711 New York state family physicians (284 of whom practiced in communities with fewer than 25 000 residents) about the most important factors related to their practice location. 86 percent of respondents reported their spouse's opinion as their first priority in whether to stay in their rural practice (Rabinowitz, et al., 2001). Two factors directly related to spousal contentment with a rural practice location were: (1)physician schedule (on-call shifts and balanced workload) and (2)community integration (employment opportunities, having a rural background or experience in rural communities; proximity to family and friends; maturity; cultural differences; and children). As it relates to community integration, spouses who were employed reported higher levels of contentment than those who were not (D. E. Pathman, Konrad, T.R., & Agnew, C.R., 2003).

The existence of children in the home affects spousal and family contentment by offering easy avenues for engagement such as schools, social clubs, sports, and recreational programs. Young families perceived rural communities as affording them quality schools, extracurricular activities, and a safe environment for raising children. They also believed family life was supported by living in a natural environment and a perception of shared family values (Mayo & Mathews, 2006). "Community engagement is one of the hallmarks of rural-urban differences and facilitates successful adjustment to rural living" (Hancock, et al., 2009).

Summary

Three distinct bodies of literature were examined to gain a clear understanding of the factors that may contribute to the success of physician retention in rural communities: rural physician satisfaction, rural physician turnover, and specific studies on rural physician retention. In all groups, factors were divided into subsets of professional, personal, and community factors. As further evidenced in empirical studies, factors that were identified as predicting rural physician retention were further defined as age, specialty, workload, clinical autonomy, positive professional relationships, rural preference, spousal and family contentment, and community integration. Income was studied as a determining factor as well; but while it was found to be a strong predictor of physician recruitment, financial factors were not proven to have had a significant impact on rural physician retention.

Methodology

Data Collection

To address the research questions posed in this study, information on each of the eight predictors of rural physician retention identified in the literature was collected for doctors at Cortland Regional Medical Center. It was analyzed to determine which, if any, of the variables had a causal relationship with doctors leaving or staying in practice in Cortland County.

Data on the identified physicians was collected from pre-existing internal sources provided by Cortland Regional Medical Center and secondary external sources discovered through research of public records. Confidentiality was preserved for all data. Collected data was kept in a secure, locked location. Further, each physician was

referenced using a coded system to assure that any information presented in the study would be kept anonymous.

The outcome variable in this study was physician retention. Data was collected on physicians who were active on the CRMC medical staff with start dates between 1999 and 2004. The length of tenure generally recognized by hospital administrators as defining whether a physician has been retained by a medical facility is five years (Kisacky, 2009). Based on this specification, physicians were identified as "not retained" and "retained."

The independent variables were identified by the literature. Table 2 summarizes the independent variables and how I operationalized them. Rural preference was comprised of four separate factors that were indexed into a dichotomous variable to measure the overall concept, not just one indicator of it. Similarly, three factors associated with spouse and family contentment and three attributes of physician integration in the community were transformed into two combined indexes to measure the predictive value of the full range of these hypotheses on physician retention in Cortland County. For the purpose of this study, spouse is defined as an adult partner living with the physician.

Limitations

Time constraints for data collection were a limitation of this study. In particular, data collection was limited to readily available, secondary data. If there had been access and time to directly survey and interview Cortland Regional Medical Center's active staff that began practice 1999-2004, data more unequivocally related to factors such as spousal contentment and physician relationships with other medical staff might have been

discovered. These constraints meant that data related to the important factors of each physician's private practice were also unavailable for study. As well, transformation of data to dichotomous variables may affect the measures of association between variables. The reduction in variability in the transformed variables may decrease the ability to assess these relationships (Arkkelin, 2009).

Table 2: Variables, Indicators, and Data

Variables	*Indicators*	*Data*
age	-age at date of hire	-physicians' age at date of hire
workload	-frequency of on-call duty	-on-call schedule 1999-2009
professional relationships	-attendance at medical staff meetings 1999-2009	-average attendance medical staff meetings months/year
specialty	-general medicine or specialty	-primary care or specialist
clinical autonomy	-degree to which physician can make independent judgments	-solo or group practice
rural preference	-rural rotation in medical school -rural hometown/prior addresses -indicated hobbies (e.g., hunting) -attended rural medical school	-physician's CV -biographical release form
spousal/family contentment	-spouse's family in area -children at home -spouse's community service	-public information -biographical release form -GuideStar: local boards -CRMC auxiliary/aid
community integration	-physician community service -resident in Cortland County -physician family in area	-biographical release form -GuideStar: local boards -public information

Source: Schutt, R. K. (2006). Investigating the Social World (5th ed.). Thousand Oaks, CA: Sage Publications.

Data Analysis

To determine if any of the eight predictors of physician retention in Cortland

County were related, a correlation matrix was created. It calculated all possible correlations between the eight variables and flagged statistically significant correlations. The all or none judgment of whether or not the variables are significantly related displayed in Table 3 revealed that there is a statistically significant relationship among the following variables:

- Rural preference and professional relationships
- Rural preference and specialty
- Rural preference and community integration
- Community integration and specialty
- Community integration and professional relationships
- Community integration and spousal/family contentment
- Spousal/family contentment and clinical autonomy

As a result of this analysis, a multivariate logistic regression was proven to be an unsound method for determining if these factors independently predict physician retention because the variables were in fact, related. In its place, SPSS or the Statistical Package for the Social Sciences was used to conduct chi square tests to answer whether clinical autonomy, specialty, spousal and family contentment, and physician community integration demonstrated a statistically significant relationship with physician retention in Cortland County. Independent samples *t*-tests were conducted on the variables of age, workload, rural preference, and professional relationships to determine whether the difference between the means of the two groups was due to the independent variable, or if the difference is simply due to chance. While these statistical tests did not enable me to infer a causal relationship between the factors and retention of Cortland County doctors, it did allow me to test a null hypotheses on each variable to determine if would have no effect on physician retention at CRMC (Arkkelin, 2009).

Table 3: Correlation Matrix

		Physicians_50_and_over	Oncall_10_days_or_less	Medical_staff_attendance	Specialty	Practice_Type	Rural_Preference	Spouse_and_Family_Contentment	Community_Integration
Physicians_50_and_over	Pearson Correlation	1	.094	.274	-.093	.153	.124	-.196	-.195
	Sig. (2-tailed)		.592	.184	.594	.380	.477	.259	.262
	N	35	35	25	35	35	35	35	35
Oncall_10_days_or_less	Pearson Correlation	.094	1	.202	.298	-.153	.105	.000	-.120
	Sig. (2-tailed)	.592		.332	.083	.380	.550	1.000	.493
	N	35	35	25	35	35	35	35	35
Medical_staff_attendance	Pearson Correlation	.274	.202	1	-.371	.129	.566**	.214	.459*
	Sig. (2-tailed)	.184	.332		.068	.540	.003	.305	.021
	N	25	25	25	25	25	25	25	25
Specialty	Pearson Correlation	-.093	.298	-.371	1	-.229	-.503**	-.055	-.344*
	Sig. (2-tailed)	.594	.083	.068		.186	.002	.754	.043
	N	35	35	25	35	35	35	35	35
Practice_Type	Pearson Correlation	.153	-.153	.129	-.229	1	.011	-.343*	-.147
	Sig. (2-tailed)	.380	.380	.540	.186		.951	.044	.400
	N	35	35	25	35	35	35	35	35
Rural_Preference	Pearson Correlation	.124	.105	.566**	-.503**	.011	1	.266	.492**
	Sig. (2-tailed)	.477	.550	.003	.002	.951		.122	.003
	N	35	35	25	35	35	35	35	35
Spouse_and_Family_Contentment	Pearson Correlation	-.196	.000	.214	-.055	-.343*	.266	1	.620**
	Sig. (2-tailed)	.259	1.000	.305	.754	.044	.122		.000
	N	35	35	25	35	35	35	35	35
Community_Integration	Pearson Correlation	-.195	-.120	.459*	-.344*	-.147	.492**	.620**	1
	Sig. (2-tailed)	.262	.493	.021	.043	.400	.003	.000	
	N	35	35	25	35	35	35	35	35

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Findings

When the results of statistical tests were supplemented with descriptive statistics, six main findings emerge. Specifically, there was a statistically significant relationship between positive professional relationships and physician retention at Cortland Regional Medical Center. Spousal and family contentment also demonstrated a statistically significant relationship to whether a physician is retained, as did rural preference and physician integration in the community. Additionally, there was a statistically significant relationship between age and physician retention. On the other hand, the tests that assessed workload, specialty, and clinical autonomy returned critical values were not

shown to be significantly related to physician retention.

Chi square tests were performed to determine the probability that relationships between these variables and physician retention were not random. They yielded values that were significant at the .01 and .05 levels, as shown in Table 4. It is an important finding that the two community integration factors 1)spouse and family and 2)physician were proven to have a correlation with physician retention. There is a moderately positive relationship between spousal and family contentment and retention (p=.031), where 67 percent of physicians not retained did not have indicators of spouse or family integration in the community and 70 percent of physician who stayed did show some aspect of integration. There was a strong positive relationship between physician's community integration and retention (p=.005), with 75 percent of physicians who left with no indication of integration and 63 percent of doctors who stayed displaying evidence of it. Clinical autonomy, measured as whether a physician was in solo or group practice and specialty, measured as a dichotomous variable: primary care and specialist, were not significantly related to retention. Independent samples *t*-Tests indicated that there was no significant difference in workload between physicians who were retained and those doctors who were not (p=.79). That is, the average number of days on-call per month for physicians who were not retained (Mean=4.81) was not significantly different from that of physicians who were retained (Mean=5.26). In fact, comparison of the means showed that physicians who left practice in Cortland had a lower average on-call responsibility than the doctors who remained. The 2006 change in policy that limited all physicians at Cortland Regional Medical Center to 10 days or less a month of required night call may have contributed to this result by minimizing the differences in call

schedule for all physicians (Mastronardi, 2009).

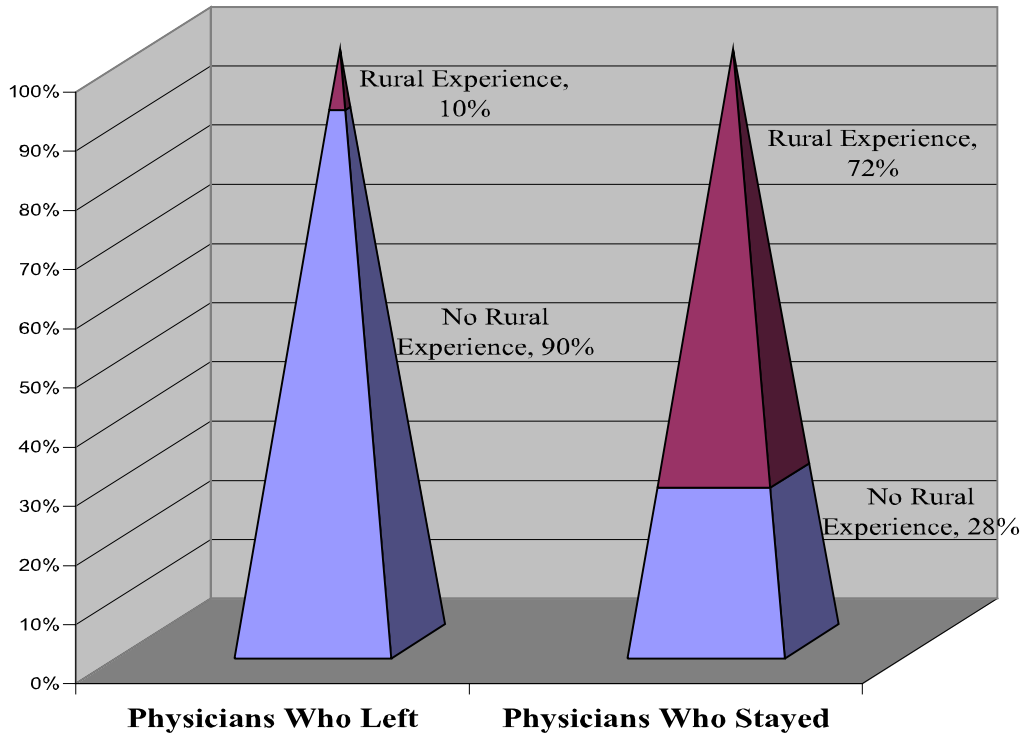
Table 4: Inferential Statistical Findings

Hypothesis	*Method*	*p*	*Finding*
Community Integration	chi square	.005**	significant
Spousal/Family contentment	chi square	.031*	significant
Rural Preference	*t*-test	.018*	significant
Relationships	*t*-test	.000***	significant
Age	*t*-test	.049*	significant
Specialty	chi square	.130	not significant
Clinical autonomy	chi square	.309	not significant
Workload	*t*-test	.784	not significant

Note:*$p<.05$
**$p<.01$
***$p<.001$

The *t*-tests showed that there is a statistically significant difference between age and the professional relationships between the two groups of physicians. The average age of physicians who left CRMC is five years younger than physicians who stayed. The *t*-test results for rural preference also showed a statistically significant difference between the two groups. Descriptive statistics revealed a notable crosstabulation result that 90 percent of physicians who left practice in Cortland did not have any prior rural experience or expressed preference for rural life, while 72 percent of physicians who remained in practice five years or more did indicated some rural preference. Additionally, physicians who were retained five years or more attended an average of seven times the number of staff meetings than doctors who left (Chart 1).

Chart 1: Rural Experience/Preference



Recommendations

The results of this study reveal five professional and personal experiences that relate to physicians remaining on active staff at Cortland Regional Medical Center for five years or more. These findings inform a strategy for retention that should coincide with the medical center's initial plans for physician recruitment. In this way, CRMC's first step for successful retention of physicians should be to identify candidates and their families who have the proper preparation for a rural practice and lifestyle. Their efforts will be further strengthened by forming a plan to welcome, orient, and mentor new physicians to CRMC and the community with strategies that facilitate positive professional and personal relationships. CRMC will also benefit from talking to

physicians who choose to leave Cortland as well as doctors who decide to stay long-term about their motivations and concerns.

It is my recommendation that Cortland Regional Medical Center share the information found in this study with senior leadership and other staff who can incorporate the findings into the medical center's plan for recruitment and retention of physicians. In addition, I offer the following proposal for how CRMC can successfully retain more physicians to meet community needs:

Recommendation 1: Pre-interview Phase

Cortland Regional Medical Center should recruit physicians who are a good "fit" for work and life in Cortland County. Beginning with providing outside recruitment firms with guidelines based on this study's findings, the first step to long-term retention is to make sure the physician fits the role, culture, and expectations of CRMC and the practice opportunity. As often the best predictor of future performance is past behavior, CRMC should direct recruiters to seek candidates who have shown the ability to engage with other doctors in positive collaboration and those who have displayed a "public service" view of patient care. They should also be of a certain age and experience level that indicates that they have the interest and ability to build long-term relationships within the medical center, practice, and community. While the medical center is prohibited by law from asking direct questions about a physician's personal background or family life, a recruitment firm is not. Therefore, CRMC should work closely with the recruiter in their work to find physicians with personal characteristics identified by the study. For example, they should seek physicians who grew up in a rural town or who have an expressed preference for a rural, small-town lifestyle. In this same way, information

about the physician's family should also be gathered with an eye toward whether there are local family ties for either the physician or spouse; the existence of children in the home; and physician and spousal interest in community service.

Recommendation 2: Interview Phase

Cortland Regional Medical Center should provide prospects with an accurate preview of the practice opportunity, as well as family and community life. While a recruitment visit is by nature a time to "sell" the medical center, it is important to share an authentic version of life and work in Cortland. A truthful, realistic preview will help physicians to "self-select" and establish a foundation for longer term retention. Candidates who are able to make more enlightened decisions will be able to visualize themselves as a part of the vision and mission of Cortland Regional Medical Center, and those physicians who do not see themselves as a good fit will self-select out of the process.

The interview should also unearth expectations on both sides. Based on the study findings, interviewers should ask direct questions that can help determine a physician's understanding of the leadership skills and entrepreneurial tendencies required to develop the strong collegial and community relationships that are in turn necessary for success in rural practice. Questions should address the unique aspects of practice in a small town: *How will the candidate feel about being readily recognized in the community? How will the doctor handle "curbside care" when approached in the grocery store aisle? In what ways does the physician see himself working to become integrated in professional and community life?*

The candidate should also be given the opportunity to take the lead on asking

questions. Allowing the physician ample opportunity to share his skills, experiences, and values provides important clues as to what is important to him, as well as displaying indications that the physician has a real interest in coming to Cortland.

As evidenced by the study, it is also important to take into account the needs of the candidate's family. It is unrealistic to expect that the spouse will simply learn to love life in Cortland. In the end, the physician will always put family above work and if her family is unhappy, move on. To address the issue of spousal and family contentment, partners should always accompany the physician candidate on the recruitment trip. The recruitment firm should provide CRMC with information about the candidate's family and their time in Cortland can be aligned directly with their interests. Then, CRMC should carefully evaluate whether family members are genuinely interested in becoming a part of the community before making the commitment to hire the physician.

Recommendation 3: Post-interview / Pre-employment Phase

Cortland Regional Medical Center should remain in frequent contact with the physician and family before they relocate in Cortland through organized efforts to assist with the move and their initial introduction to the medical center, practice, and community at-large. For example, CRMC should make regular telephone calls to the physician and spouse. The physician should be kept informed through newsletters and press releases on new developments in the medical center and practice. A complimentary subscription of the Cortland *Standard* should be sent to the family, as well as information on schools, special programs, recreational options, religious facilities, and shopping according to the family's specific needs.

As new physicians are inevitably viewed as leaders in a rural community and at

the same time, they are seeking to build their practices, an introduction to important civic groups and key citizens will help them quickly and more fully integrate into the Cortland community. They should also be assisted in connecting with people who share their interests. These efforts should be informed by the specific interests of the physician and spouse. For example, if the physician likes to play the saxophone, the medical center should introduce him to other area musicians. If she or her spouse is an avid skier, CRMC should make introductions to others who are active in the sport.

Recommendation 4: Post-hire Phase

The literature shows that the best time to engage physicians as loyal members of the medical center team is within the first weeks after they arrive at work. "New physicians and their families that quickly feel a part of the medical center community are not only more likely to stay, but are more likely to be fully committed to the organization" (King, 2002). In this way, the physician and her family should be welcomed with a dinner or reception. The physician should arrive to find a personal nametag, nameplates and other symbolic gestures that say "you are an important member of this team;" and the waiting for him (King, 2002). The family should receive a welcome gift and card that reflects the warmth and generosity they can expect to find in their new hometown.

New physicians should be given all the practical resources they need to do their jobs, including an initial lighter workload to give them time to acclimate to practice in Cortland. Small perks can have important meaning as well. The medical center should consider niceties like free lunch in the cafeteria for the physician's first month, gifts at Christmas and on birthdays, and recognition of new physicians at CRMC events like the

Holiday Party and the annual Physician Recognition Dinner.

In addition, studies document that orientation should continue beyond the few weeks the physician is in practice. Cortland Regional Medical Center has the opportunity to "enculturate" the new physician and to "foster a feeling of belonging and loyalty" (King, 2002). A program begun in southern California presents an effective model for new physician orientation. "All new physicians meet together every two weeks for nine months, beginning in September each year. During these biweekly meetings, they are introduced to the medical center's leadership and managers from various departments" (King, 2002). As a CRMC initiative, this program would give new physicians a comprehensive understanding about the medical center's mission, vision and purpose. It would ensure that physicians have a clear understanding of what is expected of them, while allowing for a regular opportunity for two-way communication, as well as helping them find ways to collaborate more effectively with the medical center. At the same time, the program would "build organizational commitment and strong bonds with other (CRMC) physicians" (King, 2002). In the same way, including new physician spouses in a network with each other as well as active community residents would provide them with the means to ask questions, make friends, and learn about life in Cortland. These two program would also offer CRMC a diagnostic tool for discovering problems that it can help resolve before they become motivation for the physician and his family to move on.

Finally, it is my recommendation that Cortland Regional Medical Center conduct exit interviews with physicians who voluntarily leave to determine if there are any related patterns that need to be addressed. For example, if physicians who are leaving Cortland routinely share that they do not have enough support from their colleagues, new ideas for

physician communication and referrals can be developed. Similarly, physicians who are retained five years or more should be interviewed to find out why they continue to stay and what CRMC leadership can do to improve physician satisfaction.

Conclusion

The rural community served by Cortland Regional Medical Center lacks almost half as many doctors as needed to address health care needs of the community it serves. While past efforts toward the recruitment of physicians have shown success, the last ten years have shown a turnover rate at CRMC more than twice the national average. Data collected and findings reported in this study may assist CRMC to inform a more comprehensive physician retention strategy. Findings identified five critical factors related to physician retention in Cortland: age, positive professional relationships, rural preference, spousal and family satisfaction, and the physician's integration in the community. Improved physician retention should be assisted by identifying characteristics shown as related to retention during the recruitment process; and fostering the behaviors and attitudes identified by the study as leading to retention soon as doctors begin practice in Cortland.

Appendix A

Date: October 22, 2009

To: Jennifer Turck, DPA

From: Anne M. Casella, CIP Administrator

Human Subjects Research Review Committee

Subject: Human Subjects Research Approval

Protocol Number: 1277-09

Protocol title: *What factors influence a physician's choice to leave or stay in practice in Cortland County?*

Your project identified above was reviewed by the HSRRC and has received an Exempt approval pursuant to the Department of Health and Human Services (DHHS) regulations, 45 CFR 46.101(b)(4) .

An exempt status signifies that you will not be required to submit a Continuing Review application as long as your project involving human subjects remains unchanged. If your project undergoes any changes these changes must be reported to our office prior to implementation, using the form listed below: http://humansubjects.binghamton.edu/2009_Forms/012_Modification%20Form.rtf.

Any unanticipated problems and/or complaints related to your use of human subjects in this project must be reported, using the form listed below, http://humansubjects.binghamton.edu/Forms/Forms/ Adverse%20Event%20Form.rtf and delivered to the Human Subjects Research Review Office within five days. This is required so that the HSRRC can institute or update protective measures for human subjects as may be necessary. In addition, under the University's Assurance with the U.S. Department of Health and Human Services, Binghamton University must report certain events to the federal government.

These reportable events include deaths, injuries, adverse reactions or unforeseen risks to human subjects. These reports must be made regardless of the source of funding or exempt status of your project.

University policy requires you to maintain as a part of your records, any documents pertaining to the use of human subjects in your research. This includes any information or materials conveyed to, and received from, the subjects, as well as any executed consent forms, data and analysis results. These records must be maintained for at least six years after project completion or termination. If this is a funded project, you should

be aware that these records are subject to inspection and review by authorized representative of the University, State and Federal governments.

Please notify this office when your project is complete by completing and forwarding to our office the following form:
http://humansubjects.binghamton.edu/Forms/Forms/Protocol%20Closure%20Form.rtf

Upon notification we will close the above referenced file. Any reactivation of the project will require a new application.

This documentation is being provided to you via email. A hard copy will not be mailed unless you request us to do so.

Thank you for your cooperation, I wish you success in your research, and please do not hesitate to contact our office if you have any questions or require further assistance.

cc: file

David Campbell

Diane Bulizak, Secretary
Human Subjects Research Review Office
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Appendix B

Factors, Authors and Indicators

Variables	*Authors*	*Indicators*
workload	Bowman, 1997	-enough physicians to support number of patients -balanced by fear of competition – ability to see own patients in ED
	Forti, 1995	-solo practice 3xs more likely to leave than other practice types to leave -physicians share call with 2 or more colleagues more likely to stay than call with 1 or less
	Mainous, 1994	-satisfaction with quality of workload more important than amount -leaving correlated with younger physicians with children at home and the number of hours of after-hours on-call responsibility
	Cutchin, 1997b	-higher level of cooperation related positively to retention
	Pathman, 1996	-higher number of on-call hours correlated with higher frequency of physician leaving practice
clinical autonomy	Cutchin, 1997b	-control/decision-making ability related to retention
	Forti, 1995	-preservation of autonomy significant factor linked to retention
	Pathman, 1996	-lack of interference by medical center (bureaucracy)
	Misra-Hebert, 2004	-perceived control in the work environment – shared decision-making led to physician loyalty
positive relationship with medical community	Cutchin, 1997b	-presence of role models/mentors -level of cooperation, communication, and interaction indicated by homogeneousness, size of medical staff -compatible ideologies -number of physicians -awareness of presence in the context of the past (history of medical staff) -higher level of demographic mix – higher rate of turnover -retention assisted by 'anchorperson" that links new doctor and staff
	Cutchin, 1994	-aligned ideology and practice habits
	Hancock, 2009	-present day experiences like positive relationship with medical community play larger role than pre-determined factors like rural upbringing
	Stenger, 2008	-ease of seeking assistance from medical colleagues
	Scott, 1998	-physician "fit" with practice environment -two-way communication between physician and practice management
	Misra-Hebert, 2004	-physician mentoring
positive relationship with medical center	Misra-Hebert, 2004	-knowledge of overall mission objectives of medical center that informed physician and led to greater involvement in organizational input
	Scott, 1998	-two way communication; involvement in decision-making

		-systematic peer-focused physician recognition/appreciation
	Forti, 1995	-financial stability of medical center
	Cutchin, 1997b	-technology and services available
		-power of administration over physician
prior rural preference	Cutchin, 1997b	-mentor/role model encouragement for rural/small town practice
		-socioeconomic background (grew up poor)
		-previous rural experience
		-medical school rural experience
		-entrepreneurial spirit of physician
	Hancock, 2009	-wanted to live in a familiar natural and social environment
		-setting gave them a sense of trust, comfort, and ease, and required far less cognitive and social effort than attempting to integrate into a new type of community
		-familiarity grew out of rural recreational or job experience as a child or young adult
	Pope, 1998	-love of outdoors
		-safety of children
	Pathman, 2003	- preparedness for small town living predicted their retention
	Colwill, 2003	- rural residency or through rural med school rotation also predicted for retention by prepping docs for both community and as well as practice life
	Stenger, 2008	-growing up in small town
		-attending medical school in a rural area
		-being exposed to rural experiences
	Rabinowitz, 2001	-career plans to serve rural and/or low income patients upon entering med school
		-growing up in rural area
		-attending medical school in rural area
		-rural rotation in medical school
		-cumulative effect – combined factors correlate higher predictor
spousal/family contentment	Feeley, 1997	- spouse attitude about rural practice and rural living indicator of retention
	Cutchin, 1997b	-immediate family satisfaction through spousal community integration
	Rabinowitz, 2001	- spouse's opinion first priority in whether to stay in their rural practice
		- physician schedule and community integration
	Mayo, 2006	-employed spouse reported higher levels of contentment-
		-involvement with the community through children's schools, social clubs, and other extracurricular activities
		-having children, which as stated helps integration in the community, also effects contentment as rural communities can offer young families: quality schools, extracurricular activities, and a safe community

	Kelley, 2008	-spousal access to employment -quality education for children -seeking rural, small town life
community integration	Kelley, 2008	-sense of belonging and appreciation -personal connection -prior community service
	Pope, 1998	-physicians must balance positive factor of being a recognized community leader just by virtue of their position and the related lack of privacy
	Mayo, 2006	- employment opportunities, having a rural background or experience in rural communities; proximity to family and friends; maturity; cultural differences; and children
	Cutchin, 1997b	-participation with social/community groups -living in the community
	Feeley, 2003	- physicians who communicate with more people in their community, were more likely to grow roots and remain in their practice
	Hancock, 2009	-facilitates successful adjustment to rural living desire to work in a community with a large underserved population, continuity and close relationships with patients and staff -frequent participation in community
demographic and other variables	Kelley, 2008 Pathman, 1996 Mainous, 1994 Stenger, 2008	-older than 50 -recruited by local doctor or local hospital -own their practice -not first practice experience -being a primary care physician

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