

2015

# The Influence of On-Site Surgical Pathology Services in Rural Hospitals on Physician Satisfaction

Belinda D. Presley  
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# Walden University

College of Health Sciences

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Belinda Presley

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2015

Abstract

The Influence of On-Site Surgical Pathology Services in Rural Hospitals on Physician  
Satisfaction

by

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MHA, Webster University, 2009

MSc., Missouri State University 1993

BS, Missouri Southern State University, 1989

Dissertation Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Philosophy  
Health Sciences

Walden University

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## Abstract

There is limited information regarding physician satisfaction as it relates to the presence of a surgical pathology department in rural hospitals. Physician satisfaction directly influences the quality of patient care. The theoretical frameworks that informed this study included institutional theory and population ecology. The research questions addressed differences in levels of physician satisfaction between physicians who have access to an on-site surgical pathology department and physicians who do not have such access. The research also examined differences in satisfaction between physician specialties that have or do not have access to an on-site surgical pathology department services. A quantitative, cross-sectional study was employed utilizing three primary instruments: the Henry Ford Hospital Survey, Standardized (Synoptic) Pathology Reports, and PAR Medical Colleague Questionnaire. Statistical analyses including ANOVA, linear regression, and *t* tests were used to examine the relationships between the study's variables. The results revealed that there is statistically significant evidence to support that on-site surgical pathology department services influence physician satisfaction. Potential implications for positive social change from this study include a better understanding and awareness of the relationship between physician satisfaction and utilization of on-site pathology services, which may ultimately benefit healthcare facilities by more intently addressing quality of care and patient satisfaction.

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## Dedication

I hold dear to my heart that all things are possible through the grace of God. The process of this academic journey, the enormous coursework, and all the challenges along the way that caused many to doubt me and ask me why and how do I do it: I have always and will always say “only by the grace of God, will I, or can I, accomplish any task.”

Second, my husband Gary, without his unconditional love, selflessness, and support during these past few years that allowed me to pursue a life-long dream to pour every spare moment I had into this research, writing, rewriting that seemed never-ending took away precious time from our personal and family time, I owe thanks. He has always had my love. Nevertheless, he remained true to me with his unyielding support, words of encouraging, and constant prayers. Without his support, the long, challenging journey would have been unbearable and nearly impossible for me to complete. Third, I must recognize our children, Christopher, Matthew, and Kerrigan. Through all the trials and rewards, I hope, through example, I have shown them that anything is possible when one embraces God.

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## Chapter 1: Introduction to the Study

Within a structured, hierarchical environment like a hospital, physician satisfaction is integral to the effective practice of medicine. However, there has been limited published research about the influence of physician satisfaction relating to access to surgical pathology department services.

This chapter provides a synopsis of the background relevant to hospitals and pathology services; a complete statement of the problem to be examined; an outline of the purpose of the study; research questions and hypothesis; conceptual framework of the study undertaken; nature of the student; definition of terms; assumption of theoretical results; scope and delimitations; limitations; significance; and summary.

### **Background of the Study**

Surveys determining consumer satisfaction with products or services are regularly employed by manufacturers, merchants and hospitals (Creswell, 2009; Hospital Consumer Assessment of Healthcare Providers and Systems, (HCAHPS), 2014; Jones, Berkeris, Nakhieh, & Walsh, 2009; Lankshear, 2013; Sousa, 2007). An understanding of physician satisfaction can provide healthcare organizations' administrations an insight into the desires of healthcare professionals, particularly physicians, as they undertake their professional duties. Among physicians practicing in rural hospitals with fewer than 100 beds, it is possible to determine physician satisfaction about whether the organization has or does not have a surgical pathology department. The result of such a satisfaction survey would provide the healthcare organization data useful in determining whether

such a unit will increase physician satisfaction with laboratory test turnaround times (TAT) in areas such as emergency departments (Steindel, 2001).

In the healthcare field, it is standard practice to determine patient satisfaction with the services received at office visits, physician care, hospital stay, laboratory services, and radiology services. A satisfaction survey in a hospital might include patients' responses to services from registration to the interaction with personnel to the quality of services from their healthcare provider (Creswell, 2009; Friedkin, 2001; Jones et al., 2009; Lankshear, 2013; Sousa, 2007; Zarbo, Nakhleh, & Walsh 2003).

One organization regularly employing surveys is the College of American Pathologists (CAP), the world's leading organization of board certified pathologists (Zarbo et al., 2003). CAP is organized to improve medical and pathology laboratory services (Howanitz & Steindle, 1991). In the parlance of accountability, the patient is the end consumer of the pathology department's services (Zarbo et al., 2002). However, physicians are also consumers of those services (Zarbo et al., 2003). Both the Joint Commission (JC), a medical accreditation organization, and CAP utilize some form of assessment to determine customer satisfaction when determining the operations of any certified medical laboratory; however, neither organization assesses physician satisfaction with such surgical pathology department services (Howanitz & Steindle, 1991; Zarbo et al., 2003). Hospitals internationally use both organizations with the goal of hospitals surveyed being to illustrate services provided are the best possible (Howanitz & Steindle, 1991; Zarbo et al., 2003).

Customer satisfaction measures a combination of customer expectation and how those expectations are addressed (Jones et al., 2009; Zarbo, 2006). Measuring customer satisfaction is sensitive to issues of communication. For example, if a clinical laboratory does not communicate appropriate TAT expectations, physicians (customers) may develop unrealistic expectations (Jones et al., 2009).

Recent studies have addressed physician and customer satisfaction with anatomic pathology (Lankshear, 2013; Markel, 1991; Srigley, 2007, 2009; Zarbo, 2006). Physician satisfaction surveys with clinical laboratory services are used by CAP: Quality-Probes (Q-Probes) to determine different aspects of TAT; broken down into TAT for tests demanding immediate action, known as *stat* (an abbreviation of *statum* from the Latin) and routine TATs; and inpatient testing TATs (Jones and et al., 2009). Physician satisfaction surveys can determine satisfaction regarding formats of pathology reports, diagnosis TATs, and clinical laboratory test final reports (Jones et al., 2009). In 2013, a physician satisfaction survey determined satisfaction in Canada with application of synoptic cancer pathology. This Canadian survey was used in reporting as a clinical decision support tool in the diagnosis, prognosis, and treatment of cancer patients (Lankshear, 2013), this being an example of how satisfaction surveys are employed to determine pathology laboratory efficiency.

There have been, however, no studies to determine the fundamental need for surgical pathology laboratory department services within rural hospitals. Hospital administrators thus have no objective process to undertake to determine if such

department services will prove viable for their organization and increase and improve patient care (Zarbo et al., 2003).

Physician satisfaction was high in Lankshear's (2013) research study when standardized pathology reports supported the diagnostic and prognostic decision. This applies if the report followed the synoptic reporting format as accurate, relevant, and timely (Lankshear, 2013).

Physician-to-physician interactions are a second element influencing satisfaction with surgical pathology services. There is minimal research regarding satisfaction in physician-to-physician professional interactions (Jones et al., 2009). Information developed by such a survey would drive changes in services to foster more cohesive and effective professional relationships between individual physicians and physicians in pathology services (Studer, 2003).

An extensive literature search (refer to Chapter 2) was conducted to examine physician satisfaction with partners and coworkers, and the potential influence associated between physicians within a group of specialties and with other groups of physicians, including pathologists and pathology services. Some research focused on TAT, but the review found no publications relating to the relationship between physician satisfaction and surgical pathology services (Jones et al., , 2009; Zarbo et al., 2003, 2006).

Focusing on physicians practicing at rural hospitals with fewer than 100 beds in Missouri, Kansas, and Arkansas, this study examined physician satisfaction when such facilities have or do not have surgical pathology departments. The goal was to determine if physician satisfaction increases when such departments are present.

### **Problem Statement**

Rural hospitals in Missouri, Kansas, and Arkansas with fewer than 100 beds typically do not incorporate an on-site pathology laboratory department (Center for Medicare & Medicaid Services (CMS, 2015; Zarbo, 2006). Such rural hospitals are forced to contract pathology services to outside sources, either by sending all pathology testing to a reference laboratory, by contracting with a pathologist for specific services, or a combination of the two (CMS, 2015; Lankshear, 2013). Given the vital part that pathology plays in disease diagnoses and treatments, the absence of an on-site pathology department increases time-of-delivery of services, which can be a major problem for physicians affiliated with a rural hospital (Zarbo, 2006). Delayed analysis of pathology specimens, which in turn delays diagnoses, creates frustration for affiliated physician and results in lower quality patient care (Jones et al., 2006; Zarbo et al., 2003, 2006).

Since limited research has been published regarding physician satisfaction with surgical pathology departments, physician satisfaction could be directly influenced by the presence of such a department in a rural hospital (Zarbo et al., 2003, 2006). This research addresses the gap in literature related to surgical pathology services in rural hospitals and its influence on physician satisfaction.

### **Purpose of the Study**

The purpose of this quantitative, cross-sectional study was to determine if there is a difference in the levels of physician satisfaction (dependent variable) between those physicians who have access to an on-site surgical pathology department and those do not have access to an on-site surgical pathology department (independent variable). The

research also determined if demographic variables (covariates) influence physician satisfaction level as it relates to surgical pathology department services. And finally, it determined if the different physician specialties influence physician satisfaction regarding surgical pathology services.

### **Research Questions and Hypotheses**

The specific research questions addressed in this dissertation study are as follows:

Research Question 1 (RQ1): Is there a difference in physician satisfaction levels when their hospital has an on-site surgical pathology department services compared to those hospitals that do not have an on-site surgical pathology department services?

*Ho*: There is no significant difference in physician satisfaction levels between provisions of on-site versus off-site surgical pathology department services, as measured by the pathology satisfaction survey Henry Ford Hospital/Henry Ford Medical Group Survey ( HFH/HFMG).

*H1*: There is a significant difference in physician satisfaction levels between provisions of on-site versus off-site surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

RQ2: What is the influence of socio demographic variables (age, gender, etc.) on reported levels of physician satisfaction?

*Ho*: Socio demographic variables (age group, gender, country of birth, education level, other medical professional degrees, employment, years as a practicing physician) will have no significant influence on reported levels of physician satisfaction, as measured by the survey HFH/HFMG data collection tool.

*H1*: Socio demographic variables (age group, gender, country of birth, education level, other medical professional degrees, employment, years as a practicing physician) will have a significant influence on reported levels of physician satisfaction, as measured by the survey HFH/HFMG data collection tool.

RQ3: What is the influence of physician specialties on physician satisfaction level related to surgical pathology department services?

*H0*: The specialties of physicians who utilize surgical pathology department services will have no significant influence on physician satisfaction related to surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

*H1*: The specialties of physicians who utilize surgical pathology department services will have a significant influence on physician satisfaction related to surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

The association tested was the expression of satisfaction by physicians who have or do not have access to surgical pathology department services. The variables were measured by a 5-point Likert satisfaction survey. The statistical analysis included bivariate and multivariate analysis to detect relationships between on-site pathology services and physician satisfaction; the influence of demographic variables were also determined. Additional statistical tests included correlation, regression, ANOVAs, and *t* tests. The probability level for rejecting the null hypothesis was set at  $p < 0.05$ , and tests

for “statistically significant difference between the means in two independent groups” were used (Green & Salkind, 2011).

### **Conceptual Framework for the Study**

The study of leadership has a natural home in the organization and management sciences (Scott, 1981). Weber’s organizational theory gave rise to Scott’s institutional theory (Scott, 1981). Among individuals internally and externally within an organization, social institutionalism is a response to the views of an organization’s interactions. There is the hypothesis that organizations are evolving, and a higher order exists above an individual level that contributes to or constrains employees’ interest or participation within or between groups (Amenta & Ramsey, 2010). Within the social aspects of organizations, institutional theory focuses on the cognitive scripts, moral templates, and symbol systems that exist within different levels of the organization (Hall & Taylor, 1996, p. 938). Institutional theory has two main threads that deal with political sociology: organizational system and world system (Amenta & Ramsey, 2010). Within sociology, institutional theory provides some explanation to the attributes of political stability and the overall organization’s structure (Amenta & Ramsey, 2010; Hall & Taylor, 1996). This structure often provides the micro-foundation of the social dynamics of any organization, impacting human activity within that organization (Hall & Taylor, 1996). Peer motivation can be employed within a group or subgroup to facilitate achievement of group goals (Hall & Taylor, 1996). Within institutional theory, there is also sociological institutional theory, which is a specific study within the same academic arena that can be focused on specific occupations, such as physicians (Hall & Taylor, 1996).

Although the majority of people in the organization may share a similar field or role, the operational functions within a professional nonprofit organization can differ dramatically across the different fields or departments within the same organization (McAllister, 1997). Social networks and close exchange are fundamental to the continuation of activities (McQuarrie, 2014).

Population ecology (PE) theory has become a central field in organizational studies. PE theory is acknowledged for its empirical, quantitative character. The theory is considered one of the major streams of contemporary organization theory (McQuarrie, 2012, 2014). Organizational leaders need to formulate strategies and set forth criteria for employees to adapt to those internal and external environmental changes (Scott, 1987; Selznick, 1948). Therefore, relationships between people who formulate the structure of the organization and environment must reflect adaptive behavior or learning within the organization. Population ecology within an organization environment examines those relationships to determine the different levels of pressures on physicians within an organizational structure that lead to the application of PE models that will depend on the competition and selection of the physicians within that organization's population. This can be applied to physicians functioning within an organization (Selznick, 1948). Therefore, the population ecology of organizations is theoretical and empirical and founded in the social sciences (Selznick, 1948; Scott, 1981). PE allows insights from sociology to gain an understanding of how organizations develop, sustain, and die (Hannan & Freeman, 1977).

In this research, applying institutional theory to a healthcare organization, the physicians within that organization represent an order higher than themselves individually in their contribution to the overall social makeup of the organization (Scott, 1981, 2004). The physicians as a group also make up a social system that impacts the different levels of an organization (Scott, 2004). That separate social system impacts the organizational ability to examine and determine physician satisfaction levels that might drive internal changes, such as the addition of surgical pathology department services. The institutional theory framework ties the population ecology of physicians together as subunits within an organization (Hannan & Freeman, 1977; Scott, 2004). Physicians and satisfaction levels can further be broken down into subunits to determine how organizations can respond to physician perceptions of how organizations can alter or increase available services to increase satisfaction (Scott, 2004).

### **Nature of the Study**

The research was a quantitative, cross-sectional survey design. The dependent variable was a representation of physician satisfaction at the time the survey is being administered. The cross-sectional survey is a systematic, empirical research design that allows the researcher to compare differences between groups of interest without employing “experimental manipulation or random assignments of subjects” to the research condition because the comparison will be analyzed after the survey has been administered (Creswell, 2009, p. 28). This research had one independent variable represented by hospitals with and without an on-site surgical pathology department. Physicians from these hospitals were surveyed using the cross-sectional research design.

There was no manipulation of the independent variable (Isaac & Michael, 1995). The dependent variable reports levels of physician satisfaction and the covariates, socio demographic variables.

The cross-sectional research design allowed testing of hypotheses to determine differences in the variables between or among the groups by utilizing a 5-point Likert satisfaction survey. The statistical analysis included descriptive analysis of demographics to determine age, gender, and years practicing as a physician, physician specialty, and geographic location. That analysis allowed comparisons between levels of satisfaction to be drawn. Bivariate and multivariate analyses were conducted to analyze the relationships between on-site pathology services and physician satisfaction as well as the influences of demographic variables. Examples of statistical tests included are general linear model, regression, and *t* tests. The probability level for rejecting the null hypothesis was set at  $p < 0.05$ .

### **Assumptions**

The following assumptions were considered:

Physicians would be more satisfied if the hospital in which they practiced provided an on-site surgical pathology department. There is no literature illustrating that assumed logic.

Surgical pathology services will also be a source of financial gain for the rural hospital by incorporating a new service line into their organizational design.

Finally, there is the assumption inherent in a survey research that participants will answer truthfully.

### **Scope and Delimitations**

The research determined physician satisfaction in rural health hospitals in Missouri, Kansas, and Arkansas with and without pathology departments. Rural hospitals with fewer than 100 beds were chosen from the states' rural hospital association lists. Rural hospitals are generally first responders to disease and injury in non-metropolitan settings, and given modern technology, there is no reason care in a rural area should not reach the most sophisticated level possible. The research survey allowed those hospitals with and without on-site surgical pathology department services to identify themselves at the start of the survey.

### **Issues of Internal Validity**

Three ways to validate a Likert scale would be to perform an item and whole score comparison by taking 100 respondents, with the final scale retain those statements with the highest scoring differentiate 25% and lowest scoring negative 25%. Considering time constraints, a few main statements can be selected for this process (Zarbo, 2003; Zarbo, 2006). The research questions employed here used methodology tools previously published wherein internal validity was tested. Here internal validity, despite low participant numbers, was maintained by using the Likert scale.

### **Nature of the Study**

The participating physicians were selected from hospitals located in rural health communities with fewer than 100 beds. Hospitals were identified through the research survey questionnaire whether they incorporate an on-site surgical pathology department.

A total of 123 rural hospitals were identified that met the criterion of having fewer than 100 beds. Each was sent an invitation to participate in the research survey.

Due to low participant response, the survey was first modified to include urban hospitals. The second modification included Medical Doctors (M.D.) and Doctors of Osteopathic Medicine (D.O.). The third modification was that the number of specialist groups was reduced to seven. The fourth modification allowed participants to select the state they practiced medicine in Missouri, Kansas, or Arkansas. I contracted a marketing firm, Medical Marketing Services, Inc. (MMS), for an expanded survey. I sent out a modified pilot test survey prior to sending out the modified survey. Of the 5,615 surveys sent, I had 12 total participants who completed the entire research survey. The overall response rate was 0.002%, a minimal response rate discussed in this dissertation's conclusion. The 12 participants did not meet the previously calculated G-Power analysis (Green & Salkind, 2012).

External criteria allow gathering a participant pool with very strong attitudes for and against the issue being investigated (Nachmias & Nachmias, 2007). Using the same approach as above, this allows statements to be fine-tuned within the final survey (Nachmias & Nachmias, 2007). The last validation was the factor analysis. This is a statistical technique identifying statements similar in nature and requires a large sample as well as a good working knowledge of statistical analysis (Nachmias & Nachmias, 2007).

The convenience population of physicians used in the research study was selective in nature (Nachmias & Nachmias, 2007). These participants may have strong

attitudes for and against the topic being investigated. However, physicians represent a large group within a hospital setting, and information gathered on a small scale can be applied to a larger population.

### **Limitations**

The potential limitations of the research include:

- The research utilized a cross-sectional convenience sample.
- The research could be affected by bias because participants with strong feelings (negative or positive) may be more likely to respond.
- The imposed timeframe may bias responses.
- Potential weaknesses include those nonresponsive results, accounting for that missing data, and the limited sample size. A lower return of survey of responses influenced generalization conclusions. Several attempts were made, including follow-up faxes, e-mails, and personal phone calls to increase the survey response rate.

### **Significance**

This study advances knowledge in the field of healthcare administration by providing empirical data for administrators to make an informed decision based on demands made by affiliated staff. Applicable to physician satisfaction, the study allows administrators to gain a more comprehensive understanding of the relationships between levels of physician satisfaction with surgical pathology department services. All administrators desire to make informed, intelligent decisions, and when the goal of the organization is patient care and those administrators can improve quality of care by

responding to affiliated physician practice satisfaction, this survey methodology will give administrators a means to make an informed decision.

Employed by administrators, this survey process will be a useful adjunct to financial and engineering considerations when new services are proposed for a healthcare organization. Any administrator desires to make the fewest possible decisions by guesswork. This study provides objective, informed responses to questions otherwise answered only by anecdotal evidence.

The potential for social change engendered by this study is related to a more informed response to questions of physician satisfaction.

### **Ethical Concerns**

The survey dispensed provided clear instructions and expectations with informed consent built into the survey. The survey included demographic data collection and then the physician satisfaction questionnaire.

### **Positive Social Change**

The literature review revealed a gap in the understanding of physician satisfaction as those providers deal with surgical pathology department units in rural hospitals (Jones et al., 2009; Lankshear, 2013; Lockyer, Violato, Fidler, & Alakija, 2009; Zarbo et al., 2003, 2006). In this research project, physician satisfaction was determined as their level of satisfaction with their affiliated hospital, some which have and others do not have surgical pathology department services. The information determined could be employed to illustrate how physician satisfaction levels could be used to influence of hospital administrator to establish a surgical pathology department services. The study tested

whether a readily accessible surgical pathology department amplifies the ability of physician providers to attend patients (Jones et al., 2009; Zarbo et al., 2003, 2006). Improved physician satisfaction could benefit healthcare facilities by increasing patient satisfaction through increased physician satisfaction (Jones et al., 2009; Lankshear, 2013). Fundamentally, to reach that goal of increased satisfaction, the process would allow a healthcare facility to learn whether a pathology department would be a service line worth investigating (CAP, 2003; CMS, 2013; Jones et al., 2009).

The positive social change impact of this study relates to the survey and subsequent administrative decisions focusing on physician satisfaction with physician-to-physician professional interactions to gain better insight into influence of a single specialty group as well as between different specialty groups.

### **Summary**

To understand the organizational culture of physicians within a rural hospital setting hospital, administrators need to understand the impact physician satisfaction has on organizational culture. Healthcare organizations need to continue to find ways to foster this relationship between physicians and hospital administrators by using a physician satisfaction survey, the results of which will allow administrator to gauge accurately physician satisfaction in a timely manner. This relationship has huge impact on certain clinical applications of care and services being performed by physicians within an organization. This research, the organizational culture and those professional relationships that exist between physicians and their healthcare administrators, and other physicians both in and outside their group or specialties illustrate how satisfaction relates

to the availability of an on-site surgical pathology department service within their organization.

## Chapter 2: Literature Review

### **Introduction**

Rural hospitals with fewer than 100 beds typically do not incorporate an on-site pathology laboratory department within their service programs (CMS, 2015; Lankshear, 2013; Zarbo et al., 2009). Those rural hospitals without such departments must do without pathology services or contract pathology services to outside sources, either by sending all pathology testing to a reference laboratory or contracting a pathologist for specific services. The final option may result in the pathologist providing on-site services as limited (1–2 days a week); moderate coverage (3 days a week) or extended services (5 days a week), or in another combination agreed to by the hospital and contracted pathologist (CMS, 2015; Lankshear, 2013; Zarbo et al., 2009). Physician satisfaction may be influenced by the presence of an on-site surgical pathology laboratory department (Zarbo et al., 2003, 2006), and the absence of such services increases time-of-delivery of patient services (Zarbo, 2006). Delayed analysis of pathology delays diagnosis and frustrates the ability of affiliated physicians to provide the best patient care (Jones et al., 2009; Zarbo et al., 2003, 2006).

There have been limited publications regarding physician satisfaction with surgical pathology departments as evident after a search through research databases. Thus, a gap in the literature exists with regard to determining how access to a surgical pathology department influences physician satisfaction. This research examines the relationship between access to surgical pathology department services and physician satisfaction. Physician satisfaction relates directly to the physician's ability to perform

professional duties to the maximum ability, and it is axiomatic that a physician who has access to all possible tools and services will perform better than one who does not. This in turn impacts improved quality of patient care (Jones et al., 2009; Zazzali, 2007).

As outlined in Chapter 1, this quantitative, cross-sectional, descriptive study determined if there is a difference in the levels of physician satisfaction (dependent variable) between those physicians who have access to an on-site surgical pathology department (independent variable) or do not have access to an on-site surgical pathology department (independent variable). This research determined demographic variables (covariates variable) influence physician's satisfaction level as it relates to surgical pathology department services. Finally, it determined how different physician specialties influence physician satisfaction regarding surgical pathology services.

This chapter will provide an overview of the conceptual theories and the research involving the influence of physician satisfaction on surgical pathology department services. Chapter 2 will include reviews of research studies that contain cross-sectional survey methodology to address and predict physician satisfaction and how those influences impact the surgical pathology services; the chapter also includes research on the influence of physician satisfaction on surgical pathology services and their relationship to foster social change.

### **Strategy Used in Literature Search**

Key search terms used were:

- *physician satisfaction,*
- *physician survey,*

- *surgical pathology,*
- *satisfaction pathology,*
- *satisfaction surgical,*
- *satisfaction survey,*
- *satisfaction survey history,*
- *physician pathology,*
- *clinician satisfaction,*
- *clinician surgical pathology,*
- *clinician, pathology,*
- *clinician survey,*
- *provider satisfaction,*
- *provider pathology,*
- *provider surgical pathology,*
- *healthcare survey,*
- *healthcare satisfaction,*
- *healthcare pathology,*
- *healthcare surgical pathology,*
- *healthcare satisfaction survey satisfaction survey.*

I used the following databases:

- MEDLINE,
- PubMed,

- CINAHL,
- Academic Search Premier,
- American Pathology,
- JAMA,
- Archives of Pathology Laboratory,
- and Medicine ProQuest, which included online dissertation and theses.

A review of the articles' abstracts determined the topic matter and if they applied to this study's research needs. If so, I conducted a full review of the article. For articles and abstracts obtained found but not available to view online, a request was sent to Walden University Library that allowed me to narrow my focus. Criteria to prioritize articles and eliminate articles were used. The first elimination process included those article not written in English. The second criterion eliminated articles not peer-reviewed. The third criterion eliminated articles of lower scientific thoroughness. Articles containing surveys that examine physician satisfaction were given special review.

Studies pertaining to physician satisfaction with surgical pathology were found to be few in number, implying a distinctive gap in scientific studies focused on that relationship. Data reporting on physician satisfaction were produced by Zarbo et al. (2003, 2006) and Jones et al. (2009) on general anatomical pathology or clinical pathology services, and by Lankshear (2013) regarding TATs and synoptic reporting.

This literature search suggests there is no published research or dissertations focusing specifically on the relationship between physician satisfaction and surgical pathology services department in rural hospitals with fewer than 100 beds. Although the

lack of available material validates the specific target of this research, there is no alternative but to rely on what is available as a foundation.

### **Conceptual Framework**

The conceptual framework of this research study included institutional theory and population ecology. This combination explains the correlation and complexity of human relationships within any social system and permits insight into the complexity of human relationships (Friedkin, 2001). The influence of strong leaders or those who hold leadership positions shape the organizational culture and behaviors (Friedkin, 2001). In a healthcare environment, a physician is considered a leader. The observation or ability to measure organizational culture can be used to inform hospital administrations of changes within an organization that are worthy of investigation (Friedkin, 2001). These investigations present opportunities for administration leaders to realize that group organizational culture can be used to determine the state of physician organizational culture (Friedkin, 2001). The physicians' organizational culture, a subset to a healthcare institution's organizational culture, could then be seen as an intrinsic part of the social aspect of organizational culture, especially when physicians are brought together for a common cause (Friedkin, 2001).

Weber developed the bureaucracy model, which represents a basic concept used to describe a variety of organizations (Laegarrd & Bindslev, 2006). Weber took a broad approach, including social and historical perspectives, so that his model could allow a greater understanding of how organizations were formed and how their internal and external structures were developed. Weber then developed a normative ideal related to

bureaucracy (Laegarrd, 2006). Within the bureaucracy model, Weber's concept was that employees maintain a neutral role within the organization. This results in the organizational hierarchy functioning as smoothly and effectively as possible (Laegarrd, 2006). According to Weber, the ideal bureaucracy included selection of staff according to technical qualifications where employment involved a career; a rule-oriented system, describing performance of the work; and an administrative hierarchy (Laegarrd, 2006). Weber posited that formal structure is a tool through which an organization can obtain multiple goals, a model still used today (Laegarrd, 2006).

In any healthcare setting, organizational structures can employ physicians as first-line customers for services available within the healthcare organization. This study examines physician satisfaction with an organizational structure as first-line customers influenced by the presence of surgical pathology department services.

In organizational theory, Scott (1981) stated that a "paradigmatic resolution" is rooted in organizational sociology conceptual theory (p. 53). This association is tied to rational models based on human dynamics within an organization (Scott, 1981b). Understanding how physicians work together within an organization, work within peer groups, within specialty groups, with other departments, and with nonaffiliated physicians will greatly impact their satisfaction as they utilize the services within an organization (Laegarrd, 2006; Scott, 1981b, 2004). To understand organizational theory and examine social system models, Scott (2004, p. 2) employed human relations theory and early institutional theory while maintaining a focus on an

internal organizational model (Scott, 1981b). Human dynamics will impact any organization.

During the early 1970s, organizational theory generated a number of changes in the social dynamics of organizations (Laegarrd, 2006). Etzioni's structuralized model was introduced in 1964. This model focused on inevitable interactions between coworkers and direct supervisors examining good and conflicting reactions (Laegarrd, 2006). Etzioni's structuralized model made clear there were two sides of an issue when examining leader/subordinate relationships, both naturally occurring and rational based (Laegarrd, 2006). According to the Lawrence and Lorsch's contingency model, rational and natural perspectives in different types of organizations have the ability to adapt to various types of environments (Laegarrd, 2006). Thompson's levels model introduced three perspectives within organizations that apply the rational aspect of workers and suggested the model occurs more at the technological level while the natural aspect occurs at the managerial level (Scott, 1981, p. 99).

Weber's organizational theory gave rise to Scott's institutional theory (Scott, 1981). Among individuals internal and external to the organization, social institutionalism is a response to the views of an organization's interactions (Scott, 1981b). The hypothesis is that organizations are evolving and exhibit a higher order above the individual level that contributes to or constrains employees' interest or participation within or between groups (Amenta & Ramsey, 2010). Within social aspects of organizations, institutional theory focuses on the cognitive scripts, moral templates, and symbol systems existing within different organizational levels (Hall & Taylor, 1996,

p. 938). Institutional theory has two main threads: organizational system dealing with the political sociology at an organizational level and world system dealing with political sociology at the worldwide level (Amenta & Ramsey, 2010). Within sociology, institutional theory provides some explanation of the attribute of political stability for the overall organization's structure (Amenta & Ramsey, 2010; Hall & Taylor, 1996). This structure often provides a micro foundation for the social dynamics of any organization as those dynamics impact human activity within organizations and indicates motivation can be used between peers within groups or subgroups (Hall & Taylor 1996). Group associations such as culture, education, organization, and occupation can vary in how they relate to their organizational structure via the various mechanisms exerting influences within or between groups (Hall, 1996).

### **Institutional Theory**

Institutional theory has a robust history during the development of the social sciences. Prestigious scholars working in institutional theory included Marx and Weber, Cooley and Mead, and Veblen and Commons (Bill & Hardgrave, 1981). In the latter part of the 19th century into the early 20th century, this theory grew to outweigh the influence of neoclassical theories of sociology, economics, and behaviorism within areas of political science (Bill & Hardgrave, 1981; Scott, Ruef, Mendel & Caronna, 2000).

Institutional theory appears to be more robust in different aspects of an organization's social structure (Scott, 2004). Institutional theory respects an organization's schematics that govern its external and internal structures; how the

organization will be set up; who will determine the processes by which structures, including schemas, work, and laws; what will be defined as routine; the expectations; the missions; and values that will provide the guidelines for acceptable behavior and how to address issues that do not fall within the set guidelines as policies (Scott, 2004). Although the main thread within an organization is sustainability, the social order within the organization must define the consensus of the norm and how and who must conform to prevent conflict and to maintain an element of order within that social structure (Scott 2004).

Unsurprisingly within a healthcare organization's social structure, institutions include defined normative obligations that spread into the private social life of physicians. Healthcare organizations must consider these facts as they recruit and bring in new physicians (Jensen, Kjaegarrd & Svejvig, 2009). Institutionalization within an organization involves a process that includes social behavior, relationships within the organization and the community involvement, and social status perceptions that physicians are regarded as higher echelon citizens (Jensen et al., 2009; Zucker, 1977).

Institutional theories of healthcare organizations can provide an array of information that allows the complexity of the organization to be transparent. Healthcare organizations are highly influenced by pressures considered normal for the environment. Institutional theory within healthcare organizations suggests organizational medical culture controls physician behaviors. A physician's profession defines social reality by creating principles and guidelines for their actions and behaviors (Katz-Navon, Naveh, & Stern, 2007). This pressure can be both internal and external in nature (Zucker, 1989).

These sources of pressures within the organization can result in positive or negative impact for the standard operating procedures of professional certification and state requirements (Zucker, 1989). An organization's norm that involves every professional level of the organizations allows those within the organization to share in the acceptance of order, rules, roles, internal, and external authority that ultimately creates stability and creates strong buy-in from the organization's members (Thomas, 1998; Zucker 1989). Institutional norms within the organization can be easily conveyed to new members to maintain the acceptable organizational culture (Zucker, 1977, 1989).

In healthcare organization institutions, physician populations define a specific ecological organization (Hall & Taylor, 1996). The ecological organization approach to a population will differ depending on a number of criteria. Thus, it is difficult to determine the boundaries within a field or organization (Hall & Taylor, 1996). Although the majority of the organization may share a similar field or role within a professional nonprofit organization, the operational functions can differ dramatically within the organization (Amenta & Ramsey, 2010).

### **Population Ecology Theory**

In organizations, Hannan and Freeman (1977), introduced the foundation of PE based on social sciences. PE allows population ecology within organizations to be based in theoretical and empirical history (Hannan & Freeman, 1977, p. 267). PE allows insights from sociology to gain understanding of how organizations develop and sustain themselves. PE can either dissect organizations that perish, comprehend how successful

organizations are sustained, and understand the development of new organizations (Hannan & Freeman, 1977, p. 268).

Hannan and Freeman (1977) proposed any change within an organization would be long term. Changes will be initiated by a peer selection processes rather than those not conforming to the organization's "norm via adaptation" (Hannan & Freeman, 1977, p. 268). Any change within an organization is difficult. Most organizations have personnel inertia and institutional structural barriers that often prevent adaptation (Hannan & Freeman, 1977). According to Hannan and Freeman (1977), many organizations have structural torpor that obstructs organizational response when the environment changes.

In the past 40 years, PE has become a major theory in organizational studies. It is considered one of the major elements of contemporary organizational theory by providing empirical, quantitative characterizations. PE suggests organizational leaders must formulate strategies and set forth criteria to adapt to internal and external environmental changes (Hannan & Freeman, 1977). Therefore, relationships between those who formulate the structure of the organization and those within the organizational environment must reflect adaptive behavior or learning (Hannan & Freeman, 1977). Population ecology within an organization's environment examines those relationships to determine the different levels of pressures on organizational structure. That then leads to the application of models dependent upon competition and selection of the population of organizations (Hannan & Freeman, 1977). The PE population in this research was physicians.

The PE framework typically treats organizations as discrete units and examines how variables have cause and effect on populations within an organization (Hannan & Freeman, 1977; Scott, 1981). Institutional theory elements were not included into the PE model until the late 1980s, but now it includes variables that influence the group within an organization, such as those regulatory rules that are mandated for healthcare organizations as well as new or updated legislative changes (Zucker, 1989). Population ecology and institutional models are complementary (Zucker, 1989).

Within institutional theory studies, a historical examination covering the period of 1959–1979 focused on California hospitals performing general surgeries (Zucker, 1989). It showed a well-defined institutional framework (Zucker, 1989). It was discovered the decline of healthcare organizations resulted from unforeseen external forces impacting ever-changing healthcare reimbursements. That in turn impacted the overall organizational structure as determined by both institutional and population ecology, both private and not-for-profit (Zucker, 1989). An interesting aspect was that those healthcare organizations with highly dense county population improved the likelihood of organizational healthcare to remain sustainable. It also improved the institutional conformity and population ecology of that organization by decreasing the possibility of unsustainability of that organization two-fold (Zucker, 1989).

This research examined physician satisfaction and how satisfaction is influenced by pathology department services. The research focused on interactions within the professional physician groups and thereafter broke results into subspecialty groups of physicians as those specialists interact with pathologists.

A conceptual framework that includes only institutional theory and population ecology theory offers only partial and often misleading insights into patient perspectives (Scott, 1981; Zucker, 1989). Patient concerns are related to the ability of the healthcare professional to explain a patient's medical care and recovery. However, applying the idea of customer satisfaction to physicians who are consumers of healthcare organizations services allows me to determine those influences surgical pathology departments would have on physician satisfaction.

### **History of Physician Satisfaction**

The business world and healthcare organizations use surveys to determine customer satisfaction with products and services offered (Al-Rubaish et al., 2011; Creswell, 2009; HCAJPS, 2013; Jones, 2009; Lankshear, 2013; Sousa, 2007). A satisfaction survey can be administered by healthcare organizations. There are companies that assist in gathering data for all different types of customer services including physicians as customers of hospital services, patient satisfactions, and other key interests over set periods or at a single time (Steindel & Howanitz, 2001). The results of these surveys provide accountability for any healthcare organization as a whole or in its individual elements such as determining physician satisfaction to comprehend satisfaction with laboratory test turn around times in emergency departments (Dale, Steindel, & Walsh, 1998; David, Novis, Walsh, Dale & Howanitz, 2004; Dunn, 2009; Steindel & Howanitz, 2001).

The United States utilizes two agencies that assist hospitals in attaining the highest level of quality of care by offering accreditation through the Joint Commission on

the Accreditation of Healthcare Organizations (JC) and the College of American Pathologists (CAP). Both utilize a customer satisfaction surveys to assess the quality (Howanitz & Steindel, 1991; Jones et al., 2009; Zarbo et al., 2003, 2006).

The College of American Pathologists (CAP) is the world's primary organization for board-certified pathologists (Zarbo et al., 2003). The main goal of CAP is to foster and advocate ways to improve laboratory medicine and pathology services (Howanitz & Steindel, 1991). Ultimately, patients are consumers of the end product of pathology department services (Zarbo, 1992). Both the Joint Commission and CAP utilize some form of assessment to determine customer satisfaction (Howanitz & Steindel, 1991; Zarbo et al., 2003). Both accrediting bodies are utilized by hospitals across the world to assure health care provided is the best possible (Howanitz & Steindel, 1991; Zarbo et al., 2003). Since 1978, CAP has used a Quality Improvement (QI) tool (Howanitz & Steindel, 1991). However, since physicians can be considered consumers of services of those internal departments, the department should develop a customer-oriented relationship with those who use its services since affiliated physicians are consumers of the product of anatomical and clinical pathology (Jones et al., 2009; Howanitz, Steindel, Cembrowski & Long, 1992; Zarbo et al., 2003).

The surveys used by College of American Pathologists were introduced as Q-Tracks and Q-Probes to complement each other and to allow quality assessments to be monitored in pathology and laboratory services (Howanitz, et al, 1992; Howanitz & Steindel, 1991; Novis, Walsh, Dale, & Howanitz, 2004). CAP developed a voluntary

program for those participants enrolled in their proficiency testing within United States healthcare laboratories and other foreign countries (Novis et al., 2004).

### **Pathologists Survey**

The Q-probes focused on turnaround times of testing (TAT) within the clinical laboratory. In 2000, CAP introduced Q-Tracks as a program to provide on-going surveillance for laboratories participating in the program (Howanitz & Steindel, 1991; Howanitz et al, 1992; Novis et al., 2004). This continued surveillance allows laboratories to monitor their laboratory performances in comparison to national benchmarks and to monitor their own progresses (Kennedy & Moore, 1995; Novis et al., 2004).

### **Q-Tracks**

The two main Q-Tracks monitors TAT for stats and for routine laboratory services as generated by requests of the emergency department (ED) (Howanitz & Steindel, 1991; Howanitz et al, 1992; Howanitz, 1990; Novis et al., 2004; Steindel, 2001). This information gives a well-defined overview of the development of physician satisfaction as it applies narrowly to the issue of TATs to improve patient quality of care (Howanitz & Steindel, 1991; Howanitz et al., 1992; Howanitz, 1990; Novis et al., 2004; Steindel, 2001). Nakhleh (2008) reports that a retrospective examination of physician satisfaction with surgical pathology reports conducted 2004-2005 showed 74 laboratories participating in the CAP Q-Track study. While satisfaction on the style and completeness of surgical pathology reports was high, the study reported TATs were lowest of all satisfaction parameters measured in the satisfaction survey 5-point Likert scale (Nakhleh, Sourers, & Stephen, 2008; Nakhleh, 2011). While using the odd ratio analysis, the

strength of this research presented few constraints when examining frequency of diseases along with wait times follow-up treatments (Nakhleh et al., 2008). Weaknesses could be perceived as a lack of defined characteristics that become unclear as goals are compared to outcomes. The main focus is shifted from the report format to the overall satisfaction with TATs of surgical pathology reports, identifying a need for organizations to examine processes and discover methods to improve reporting formats (Nakhleh et al., 2008; Nakhleh, 2011). Novis, Walsh, Dale and Howanitz (2004), focused on a qualitative satisfaction survey of TATs to determine perceptions of inadequate clinical laboratory services. Novis et al. (2004), used 291 hospitals as participants in the CAP Q-track monitoring process, basing his research on physician perceptions that TATs of critical chemistry results were of primary importance (Novis et al., 2004). There was a downward trend of TATs in outlier reporting illustrating hospitals were finding ways to improve the timeliness of laboratory results delivery. It is certainly clear from this research, compared with earlier research conducted, that the CAP Q-track quality improvement program has contributed to the improvement of TATs and thus increasing physician satisfaction (Novis et al., 2004).

The common thread of the above research surveys focus on TATs, critical reporting, and quality of testing to reporting (Nakhleh, 2008; Nakhleh, 2011; Novis, 2004). Each noted that communication between pathologist and clinicians and clinicians and laboratory personnel is insufficient reporting (Nakhleh et al., 2008; Nakhleh, 2011; Novis et al., 2004). The ability and desire of hospital pathologists to communicate is an area of concern reporting (Nakhleh et al., 2008; Nakhleh, 2011; Novis et al., 2004).

## **Q-Probes**

The Q-Probe collected data on various services within the laboratory setting. Those results were evaluated to determine national benchmarks for laboratory performances (Novis et al., 2004). The goal sought benchmarks to determine methods to improve laboratory practices and better performances (Howanitz & Steindel, 1991; Howanitz et al, 1992; Novis et al., 2004).

Steindel and Howanitz (2001), conducted a cross-sectional retrospective research on 952 hospitals spanning 1998 to 2001 employing CAP Q-Probe form (Steindel & Howanitz, 2001). The Q-Probe study conducted by CAP was made up of both quantitative and qualitative making, thus a mixed method research (Novis et al., 2004). The justification was that it provided a more rounded approach to determine satisfaction of physicians since it represented both the dependent variables with the various participating hospitals as the independent variables. Steindel and Howanitz, (2001), used the statistical analysis of the *t*-test to determine differences between means of the two groups. Steindel and Howanitz (2001), noted that TATs within the ED were the main focus point contributing to physician satisfaction, or the lack of it (Steindel & Howanitz, 2001). Retrospective information from 2001 to 1998 showed that in the three year span physicians continue to be dissatisfied with TATs (Steindel & Howanitz, 2001). The primary suggestion was to develop an interoperability connection between departments to improve TATs as the first step in improving patient quality of care (Steindel Howanitz, 2001). It was evident lack of communication hindered the ability for this process to flow properly and, employed a quantitative survey to determine physician satisfaction with

TATs, surgical report criteria, and corrections (Nakhleh, 2011; Zarbo et al., 2003). Each study conducted either cross-sectional research or, in Pereira's study, a retrospective review of surgical pathology reports. The primary problem revealed was the lack of communication between pathologists and clinicians. In surgical pathology reports, clinicians expressed concerns that critical information was not being reported in a timely manner (Pereira, Yulin, & Silverman, 2004). The important aspect in the early-to mid-2000 research by Pereira, Zarbo et al, (2003) and Nakhleh (2011), was the focus on formatting of pathology reports. The goal of standardization should be determined, especially for developing a tool to provide standard synoptic report for surgical pathology (Nakhleh, 2011; Pereira et al., 2004; Zarbo et al., 2003).

The CAP Q-Probes provides a one-time survey of physician satisfaction by utilizing an assessment tool (Zarbo et al., 2003). This focuses on the perception of the faster the delivery of results from laboratories, the better patient care (Howaniz & Steindel, 1991). This outcome is easily measurable for organizations (Howanitz & Steindel, 1991; Howanitz et al., 1992; Novis et al., 2004).

Note also the questionnaires used within the Q-Probe provides a continuous monitoring of quality assessment tools for laboratory quality and can be employed to determine an outlier within the physician satisfaction based upon TATs, etc. (Howanitz & Steindel, 1991; Howanitz et al., 1992; Novis et al., 2004). The focus of Q-Probes determined specific laboratory practices associated with outcomes (Howanitz & Steindel, 1991; Howanitz et al., 1992; Novis et al., 2004). Outcome data are considered stratified by obtaining specific information from those participants (Howanitz & Steindel, 1991;

Howanitz et al., 1992; Novis et al., 2004). Q-Tracks monitoring process is compiled and cumulated by CAP to compare yearly data to the overall group complied information (Howanitz & Steindel, 1991; Howanitz et al., 1992; Jones et al., 2009). Changes are easier to measure in the two-year cycle of the Q-Tracks for benchmarks, more so than using a typical Q-Probe study that evaluates over a two-month time period (Howanitz & Steindel, 1991; Howanitz et al., 1992; Howanitz et al., 1993; Jones et al., 2009). The Q-Tracks program allows organizations to harvest that idiosyncratic information to relate actual laboratory practices with improved performances (Howanitz & Steindel, 1991; Howanitz et al., 1992; Howanitz, Saladino, & Dale, 1997; Howanitz et al., 1993; Jones et al., 2009).

Over the past several decades, the Quality Improvement (QI) tool has evolved to provide a standardized approach to the measurement of quality (Zarbo et al., 2003) and CAP has employed an accreditation form called CAP Q-Probes to determine the quality of work and services being provided by laboratories (Zarbo et al., 2003). The Q-Probes program was established in 1989 (Zarbo et al., 2003). This program was established as a time-limited monitoring process that allowed standardized measurements of laboratory quality control to be further formulated as key benchmarks for future use (Zarbo et al., 2003). Since 1989, the Q-Probe program has generated more than 100 peer-reviewed publications outlining those quality improvement benchmarks in laboratory testing to include; pre-analytic, analytic, and post-analytic in laboratory pathology and clinical laboratory departments (Jones et al., 2009; Zarbo et al., 2003, 2006).

## Review of Literature

The determination of physician satisfaction allows a healthcare organization to understand the needs of physicians as those professional healthcare providers in professional practices (Jones et al., 2009). The goal of this research is to determine satisfaction among physicians practicing in affiliation with rural hospitals with fewer than 100 beds in cases where those professionals have, or do not have, access to surgical pathology department services.

The amount of time (TAT) it takes laboratory personnel to report test results is the most common complaint of physicians (David, et al., 2004; Jones et al., 2009; Lankshear, 2013; Novis & Dale, 2000; Zarbo et al., 2003, 2006). While test quality is vital, the relationship between technical laboratory personnel and clinical physicians should not be an area of prime dissatisfaction (Lankshear, 2013; Zarbo et al., 2003). In fact, this issue offers one of the greatest opportunities for improving both performance and professional relationships (Lankshear, 2013; Zarbo et al., 2003). Literature provides empirical evidence regarding other areas of dissatisfaction expressed by clinical physicians through a satisfaction survey (Jones et al., 2009). These points of dissatisfaction might be TAT, reporting format, reporting time frame, and lack of communication with clinical laboratory staff (Jones et al., 2009).

Satisfaction surveys are employed to measure the level of satisfaction of patients with services received such as office visits, physician care, hospital stay, laboratory services, and radiology services (Creswell, 2009; Friedkin, 2001; Jones et al., 2009; Lankshear, 2013; Sousa, 2007; Zarbo et al., 2003). A satisfaction survey in healthcare

might include patients' responses to services from registration to the interaction with any other professional personnel interaction (Creswell, 2009; Friedkin, 2001; Jones et al., 2009; Lankshear, 2013; Sousa, 2007; Zarbo et al., 2003).

Physician satisfaction can be correlated with the healthcare quality indicators outlined by organizations such as National Guideline Clearinghouse (NGC), National Healthcare quality reports (NRHRQ), the Joint Commission accreditation agency (JC), and the College of American Pathologists (CAP) (Shahangian & Snyder, 2009; Zarbo, et al., 2003). The main purpose of a quality monitoring system is to determine physician satisfaction with different areas of laboratory services being offered (Rigby, Brown, Lakin, Balsitis, & Hosie, 1999; Shahangian, & Snyder, 2009). According to Shahangian and Snyder (2009), there are now no established standardized measurement for physician satisfaction of laboratory services such as TAT, physician-to-pathologist communication, and accessibility to those services by physicians. Communication between physicians and other healthcare professionals, whether it is between a laboratory technician and another physician, is a priority in determining gaps between physicians, sub-specialists, and those within the laboratory setting (Shahangian and Snyder 2009). It is possible that the physician dissatisfaction can be related to delays in results, poor communication between providers, TATs, and diagnostic and treatment errors or delays (Rigby et al, 1999; Shahangian and Snyder, 2009).

Pathology reports relevant to treatment of cancer patients contain critical information pertinent to patient care and on-going treatment (Lankshear, 2013; Rigby et al., 1990; Rosai, 1993; Srigley, McGowan, MacLean, Raby, Ross, Kramer, & Sawka,

2009). Pathology reports allow for continued monitoring that provides information in treatment management, planning for resources, surveillance for the revelation of other types of cancer, and quality control processes (Srigley et al., 2009). The College of American Pathologists (CAP) validated scientifically a well defined lists with contents used to formulate the foundation for synoptic cancer pathology reporting used in Canada's study (Srigley et al., 2009). Over a 3-year period, Canada utilized CAP standards resulting in improvement in the quality of the synoptic reports and overall comprehensiveness of that cancer pathology reporting (Lankshear, 2013; Rigby et al., 1999; Rosai, 1993; Srigley et al., 2009).

Communications within a surgical pathology department are first and foremost dependent on the ability of physician access to pathologist or a pathology department. That level of communication contributes to managing physicians' expectations to meet TATs, report formats, and understanding of pathology synoptic reports relating to final patient disposition (Lankshear, 2013; Novis et al., 1998; Novis et al., 2000; Steindel and Novis, 1999; Steindel et al., 1996; Srigley et al., 2009).

The literature reviewed revealed the standardization of synoptic cancer pathology reporting is new (Lankshear, 2013). In the 1990s, researchers advocated a checklist that constructed synoptic reporting involving pathology cancer patients (Markel & Hirsch, 1991). These articles indicated a higher physician satisfaction rate when synoptic reporting was employed (Markel & Hirsch, 1991; Rosai, 1993). A pivotal study conducted by Zarbo et al. in (1992) reviewed those reports involving colorectal cancer for completeness relative to more traditional standard report. During the 1990s, CAP

surveyed over 532 institutions, and a single process was tied to the reporting of pathological finding: standardized report or checklist by pathologist (Zarbo et al., 1992; Hammond & Flinner, 1997). The positive impact upon a group of regional hospitals that increased physician satisfaction resulted from employment of standardized pathology reporting checklist when reporting breast cancer (Hammond & Flinner, 1997).

Additionally, by implementing the standardized checklist for pathology reports, the results viewed as improved by physicians, and there was a reduction in phone calls to the pathologist for clarification (Hammond & Flinner, 1997; Lankshear, 2013).

Subsequent studies in pathology reporting have emphasized the importance of synoptic reports in pathology cancer cases such as hematolymphoid malignancy, breast, melanoma, lung and colorectal (Branston, Greening, & Newcombe, 2002; Chapuls, Chan, & Lin, 2007; Cross, Feeley, & Angle, 1998; Hammond & Flinner, 1997; Lankhsear, 2013; Markel & Hirsch, 1991; Rigby et al., 1999; Zarbo, 2006). The concise report and minimum effort necessary to employ checklists are emphasized as points that increase physician satisfaction (Lankshear, 2013; Shahangian & Snyder, 2009; Srigley et al., 2009; Zarbo, 2006). A recent study examined standardized pathology reports involving the head and neck cancer specimens (Shahangain & Snyder, 2009). The review established that structured pathology reports took less time for the physicians to read than older narrative reports (Karim et al, 2008; Lankshear, 2013; Mohanty, Piccoli, Devine, Patel, William, Winters, Bechich, & Parwani, et al., 2007; Novis et al., 1998; Rigby et al., 1999; Roasai, 1993; Srigley et al., 2009; Wilkinson, Shahryarnejad,

Winston, Watroba, & Edge, 2003; Wright, Law, Last, Kumar, Hsleh, Khaifa, & Smith, 2004; Yunker, Matthews, & Dort, 2008).

The most recent studies addressed physician or customer satisfaction with anatomic pathology (Markel & Hirsch, 1991; Lankshear, 2013; Srigley et al., 2009; Zarbo et al., 2006). In this particular research, physician satisfaction was higher when the standardized pathology reports were used to validate pathology diagnostic (Lankshear, 2013). Future prognostic options provided available, relevant, and timely pathology reports (Lankshear, 2013).

Presently, however, minimal research regarding physician-to-physician professional interactions satisfaction surveys is available (Jones et al., 2009). Such information would help drive changes in services to foster more cohesive and effective professional relationships between physicians and pathology services (Studer, 2003).

Therefore, an extensive literature search was conducted to examine physician satisfaction with partners, co-workers, and the potential influence associated between physicians within a group of specialties and with other groups of physicians including pathologists and pathology department services. While some research focused on turn around times (TAT), the results from the literature review resulted in no discoveries of publications for the association between physician satisfaction and surgical pathology department services (Jones et al., 2009; Zarbo et al., 2003; Zarbo, 2006).

### **Physician Satisfaction in General**

During the 1980s, many businesses started to use a customer-based satisfaction survey that allowed them to look at the market of service, sales and if their customers

were loyal to their products (Thomas, 1998, p.2127). Surveys are structured to help businesses determine what customer's expectations are and those customer's perception of those services or products being offered (Cleary and McNeil, 1988; Thomas, 1998). Many companies argue that surveys only measure the customers "perceived" service and not the actual service that was given (Thomas, 1998, p.2127).

In 2006, Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), was initiated by Centers for Medicare and Medicaid Services (CMS) as the first standardized survey on the national level to assess the public perception of healthcare received (HCAHPS, 2014). HCAHPS provides a public option based on patients satisfaction with healthcare organizations (HCAHPS, 2014).

CMS uses a process that allocates federal resources to healthcare organizations that maintain a high level of patient satisfaction recognizing this as a key factor in the value of patient care as Value-Based Purchasing (VBP) (CMS, 2015; HCAHPS, 2014).

The United States Department of Health and Human Services publishes the outcome of these HCAHPS and VBP survey reports for patients and healthcare organizations. For physicians a Clinician and Group (CGCAHPS) along with a Physician Quality Reporting System (PQRS) will be used in 2015 for reimbursement purposes for outpatients (CMS, 2015; HCAHPS, 2014)

### **Review of Survey Methodology Research in Health Care**

Historically, HCAHPS surveys those patients who have been discharged from a hospital within two days to six weeks of being discharged (HCAHPS, 2014). Hospitals often will employ an outside vendor to conduct a survey of patient population (HCAHPS,

2014). Depending upon the vendor, surveys will be performed by mail, telephone, or even an interactive voice recognition system. Many vendors offer them in multiple languages (CMS, 2015). Press Ganey and Associates maintains the largest patient population satisfaction survey in the market for hospitals and many healthcare organizations (Press Ganey (PG), 2015). The information obtained from these individual patient surveys provides data for healthcare organizations examine overall satisfaction of individual physicians, departments, and sub-departments within an organization (CMS, 2015; HCAHPS, 2014, PG, 2015).

### **Survey Limitations**

Surveys are not considered completely randomized in nature (Boulding, Glickmann, & Manary, 2015; Cleary & McNeil, 1988). The Center for Medicare and Medicaid Centers (CMS) requires larger hospitals capable of obtaining 300 surveys within a 12-month period to randomly select patients to survey. Smaller hospitals must perform a census sampling to obtain as many surveys as possible (HCAHPS, 2014).

Many healthcare organizations do not include emergency department (ED) information when patients are transferred to another facility or admitted to the hospital (Toma, Triner, & McNutt, 2009). Non-English speaking patients are often excluded during telephone-based satisfaction surveys, skewing results (PG, 2014; Thomas, 1998). Mail-based satisfaction surveys will self eliminate patients without permanent addresses and patients who are illiterate (PG, 2014; Thomas, 1998).

## **Utilization of Survey Results**

When determining how to utilize the patient's satisfaction survey data, it is important to include the following: the survey must obtain the best data available; target audience must be defined to understand how to survey them; and any possible ways to improve the survey process to obtain the best, reliable, high response (HCAHPS, 2014; PG, 2014; Thomas, 1998).

Healthcare organizations seeking methods to improve and sustain their existence will utilize some form of patient satisfaction information and collect such data (Creswell, 2009; HCAHPS, 2014; Thomas, 1998). This information can assist healthcare administrators in the understanding and influence the process improvements to reach performance incentives dictated by CMS (CMS, 2015; Creswell, 2009; HCAHPS, 2014). By aligning the goals of the organization, surveys allow organizations to determine areas requiring focus. This too allows an organization to establish a monitoring process within the organization. That allows a tie into their strategic planning involving healthcare administrators and physician groups within that organization (HCAHPS, 2014; PG, 2015).

The CMS VBP payment plan is based on how hospitals perform on set quality measures (CMS, 2015; HCAHPS, 2014). Therefore the higher hospital performance or on-going improvement, the higher VBP that hospital will receive from CMS for those services the Medicare/Medicaid population (CMS, 2015; HCAHPS, 2014).

Rural hospitals face a broader range of challenges when seeking to provide a continuum of care (Jones et al. 2009). Rural hospitals, by definition, serve small

communities and isolated populations scattered over one or more counties (American Hospital Association, 2015). A rural hospital must evaluate all elements incorporated within the continuum of care to determine the needs of its specific community while comprehending that referral of services or alliances with nearby health care organizations may be the most economical and practicable method of providing the best possible care to those who seek out their organization for their care (Barton, 2009; Creswell, 2009).

Historically, marketing media has used satisfaction surveys as a marketing tool to gain insight into customer spending and desires for products and services (Jones et al., 2009; Zarbo, 2003; Zarbo et al., 2006). Hospitals often use such surveys as National Research Corporation, Avatar, HealthStream or Press Ganey, along with private companies willing to gather satisfaction data for a monetary fee and Health Stream to name a few (ACEP, 2011). Organizations must constantly reassess their ability to provide care and the extent to which care can be provided over the continuum of life (Creswell, 2009; Shahangian & Snyder, 2009; Sousa, 2007). Healthcare organizations must also consider how care will be perceived by patients, employees, and physicians (Jones et al., 2009; Steindel & Howanitz, 1997). Therefore, each health care organization must evaluate community needs and how the organization must shaped in order to meet those needs (ACEP, 2011; Barton, 2010; CMS, 2015; HCAHPS; 2014; Shanafelt, Boone, Tan, Dyrbye, Scotile, Satele, West & Sloan, 2011). Concurrently, there should be an assessment of how other organizations are providing those health services (ACEPS, 2011; CMS, 2015; HCAHPS; 2014). Most healthcare organizations are based upon a hospital setting. From there the organization moves outward to incorporate clinics, urgent

care centers, physician offices, ambulatory surgical departments, pharmacies, home health facilities, rehabilitation services, hospices, and palliative care (APES, 2011; Barton, 2010). Each organization must constantly assess its financial capacity to sustain multiple healthcare delivery points (Barton, 2010; Creswell, 2009; Jones et al., 2009; Toma et al., 2009; Zazzali, 2007). These assessments will include such elements as staffing full-time specialist physicians (Lankshear, 2013; Funk & Stajduhar, 2013; Jones et al., 2009; Zarbo, 2006).

An alliance of organizations within a single community may affect the continuum of care necessary to serve the population without placing the burden on a single health care facility (Barton, 2010; Creswell, 2009). Networked systems, cooperation between insurance providers and physicians, division of assets, and other efforts can work to provide comprehensive continuum of care within a community augmented by referral to specialists or access to care from an affiliated or specialist health care unit (Barton, 2010; Creswell, 2009; Hosmer, 1995; Howantiz, Hoffman, Schifman, Zarbo, Steindel & Walker 1992).

### **Purpose of Research**

This study utilized a cross-sectional quantitative research design, and therefore is deductive in nature, in which ideas or concepts condensed into testable variables (Creswell, 2009; Isaac & Michael, 1995; Sousa, 2007). These variables were chosen to measure relationships between the variables (Sousa, 2007). Quantitative research allows measurements to qualify relationships between variables such as the independent and

dependent variable, which are also thought as predictor and outcome variable (Sousa, 2007).

The non-experimental design used in this research to allow for the cross-sectional collection of data classified by duration of collection. Data collection did not intervene nor interfere with the subjects of the research or data collection process because there was no manipulation of the variables. The collection of the independent variable was a true representative of physician satisfaction at the time the survey is being administered (Sousa, 2007). The research employed *ex post facto* to describe the cause and effect between the variables being studied (Isaac & Michael, 1995; Sousa, 2007).

The cross-sectional design was descriptive in nature and allowed several variables to be measured simultaneously within the target population, giving a glimpse at a single moment the frequency and certain characteristics of that target population (Creswell, 2009). The data within the cross-sectional design allowed prevalence of that environment within that population to be studied and described the differences in the variables that occur naturally between groups of variables (Isaac & Michael, 1995; Sousa, 2007; Creswell, 2009). The cross-sectional approach utilized a hypothesis about differences in the variables between or among the groups being researched (Isaac & Michael, 1995; Sousa, 2007; Creswell, 2009).

The main purpose of the cross-sectional research design was to permit researchers to explore the potential of relationships of cause and effect through data collection and thereby gain some generalization of the interaction between independent variables being measured; results are analyzed carefully and measured to allow for interpretation of cause

and effect relationships of perceived reality (Isaac and Michael, 1995; Sousa, 2007). The conceptual framework specifies the variables to be explored in the investigation, which in the case of my research will allow information to be secured about specific relationships, the example being physician satisfaction with surgical pathology services representing cause and effect relationship seen in an cross-sectional research design (Creswell, 2009). The cross-sectional design examines the phenomena of the independent variables after the survey (Creswell, 2009; Isaac & Michael, 1999). This will allow the independent variables, the rural hospitals with and without surgical pathology department services, to be examined at the relationship level without manipulating those variables (Isaac & Michael, 1999).

This dissertation's cross-sectional research design allowed data to be collected in a cross-sectional manner (single point in time), and thereafter to analyze physician satisfaction in that single point in time preceding to the phenomenon, in this case the survey collecting data to be analyzed (Creswell, 2009; Isaac & Michael, 1999).

This research examined how the availability of on-site pathology services influences the satisfaction of all other physician groups (Jones et al., 2009; Lankshear, 2013; Sousa, 2007; Zarbo, et al., 2003).

### **Study Implication on Social Change.**

Given the scope of this information and the complexity of those relationships between physicians within their own groups and between specialties, a complex picture has developed regarding the overall social change for those individuals within the groups and between groups. The organizational model requires a reliable predictive survey

model to determine those influences on physician satisfaction for surgical pathology services (Funk & Stajduhar, 2013; Carlson, 2013; Clason & Dormody, 1994). Increased understanding of physician satisfaction is the key the overall care of the patient and intra-structure of a healthcare organization (Creswell, 2009; Howanitz et al., 1993).

### **Identified Gaps in the Literature**

The gap in the literature review is the physician satisfaction survey that holds the key to predict who will and who will not influence the physician satisfaction with surgical pathology department services is limited or not relevant to this proposed research project.

### **Social Change Implications**

The literature review showed a gap in the standardization of physician satisfaction when dealing with surgical pathology department services in rural hospitals. The need for hospital administration and physicians to have a tool to allow them to determine hospital service needs, possible new service lines to investigate for financial gain, physician satisfaction, and thus ultimately improve patient quality of care.

The impact on a positive social change related to the survey and subsequent administrative decisions would be to focus on satisfaction within physician-to-physician professional interaction with the intent to gain a better insight of the influence generated within the single specialty group as well as different specialty groups (Friedkin, 2001; Mayer, Davis, & Schoorman, 1995).

This research study can impact both short-term and long-term social changes that have the potential to create historic changes in healthcare organizations. The immediate

significance of this research would allow a shift toward improving applications of physician satisfaction surveys to encompass a surgical pathology department services.

The outcome of the research would be validated and accepted by physician, providers and healthcare administrators who would in turn receive more accurate and reliable information on those physicians' satisfaction with surgical pathology services and how that influence could be channeled into positive outcomes for those involved. The survey could also be utilized by CAP, JC, and other organizations to determine the influences physician satisfaction has on their pathology services.

Research from which this proposed study launches are primarily set in Lankenshear, 2013, Jones et al., 2009; Zarbo, et al., 2003, 2006.

This dissertation study seeks to fill the gaps as identified with this review of the literature by examining physician satisfaction in surgical pathology in hospitals with an emphasis on those rural hospitals with fewer than 100 beds.

In summary, physicians and clinicians have traditionally used satisfaction surveys to look at such factors as burn-out among healthcare providers, to determine patient's satisfaction with physicians, and understand the competencies of services and clinical laboratory TATs.

### **Summary and Conclusions**

As healthcare reform is in early infancy development, there is no firm timeline in how and when specific changes will occur in the future and what the impact will be on rural healthcare. With the federal funding cutbacks, hospitals are forced to examine what services will be provided and the cost of those services in relation to the revenue stream

generated. A surgical pathology department service is an area of concern. Physician satisfaction with surgical pathology department availability should be determined before an organization can afford to provide that service to patients. Therefore, when contemplating bringing onboard a new service line, such as surgical pathology department services, rural hospital administrators will consider affiliated physician satisfaction in their strategic planning (Jones et al., 2009; Zarbo, 2006). However, there is no standardized or widely accepted objective process that can assist rural hospital administrators in this decision. Each facility must undertake the process without appropriate analytical and statistical tools that can be found and applied to other healthcare service management decisions. Physician satisfaction drives multiple aspects of healthcare, which can be established via evidence-based decision-making process evidence-based decisions and are used to objectively measure other different levels of satisfaction in healthcare organizations (CMS, 2014; HCAHPS, 2014; Jones et al., 2009; Zarbo, 2006)

Chapter 3 will cover research methodology applicable to this research which utilized the Quantitative, cross-sectional research design.

## Chapter 3: Research Method

### **Methodology Introduction**

The research methodology employed to collect data for this research question: How is physician satisfaction influenced by the presence of surgical pathology department services in rural hospitals? What is the association between different demographic factors that influence physician satisfaction? What is the influence of different physician specialties on satisfaction levels related to surgical pathology department services?

### **Research Design**

This quantitative, correlational study determined the differences in the levels of physician satisfaction (dependent variable) between those physicians who have access to an on-site surgical pathology department (independent variable) and those who do not have access to an on-site surgical pathology department (independent variable). The research determined if demographic variables (covariates variables) influence physician satisfaction level as it relates to surgical pathology department services. It also determined if physician satisfaction is related to different physician specialties as those specialists view surgical pathology services. Survey Monkey was used to reach the participants.

### **Methodology**

#### **Population**

The target population was physicians with access to and privileges at hospitals in both rural and urban hospitals. Those hospitals with an on-site surgical pathology

department services and those hospitals without an on-site surgical pathology department services were differentiated in the survey so that the target population of physicians would be separated. Hospitals were also separated according to rural and urban areas of operation and numbers of beds served.

G\*Power (version 3) software was employed for power analysis for this research study. The specific *a priori* power analysis using a large effect size of ( $f=0.6$ ) where  $\alpha = 0.05$  provided a preferred minimum target population sample size of 90 participants to achieve a power of 0.80 and then increasing power to 0.95 the maximum to 148 target population sample size. Thus, sample target population would ideally range between 90 and 148 participants. The large effect size is represented in published surveys using an minimum overall average physician satisfaction with anatomical pathology services, clinical laboratory services, and pathology synoptic reporting format, with large effect size of 0.6, up to 1.2 the maximums therefore overall averaged 0.9 for effect size for a 2006 survey (Jones, 2006; Lankshear, 2013; Zarbo et al., 2003; Green & Salkind, 2011; Thalheimer & Cook, 2002).

For outcome measure(s) purposes, this research used the minimum effect size and was set at 0.6 to measure the overall satisfaction with surgical pathology department services for physicians who have access to an on-site surgical pathology department services and for those physicians who do not have access to an on-site surgical pathology department services.

## **Sampling and Procedures**

The sample population was drawn from rural and urban hospitals in Missouri, Kansas, and Arkansas which were selected based on the presence of, or lack of, an on-site surgical pathology department services. The original survey was targeted rural hospitals with fewer than 100 beds. The modified survey targeted physicians primarily Medical Doctors (MDs) were identified by through Medical Marketing Service (MMS) through access to the American Medical Association (AMA) database. Physician accredited for practice with targeted hospitals were sent a HTML email with the researchers introduction, a link to the survey, and contact information. The survey contained a built-in consent form. Physicians who practice at a rural hospital with more than 100 beds or physicians in urban area were excluded from this research study.

The survey included demographic questions to address the different levels of surgical pathology services utilized and the different levels of surgical pathology department services that may be offered through reference labs or contractual services in hospitals that did not have an on-site surgical pathology department.

Using information gleaned from state rural hospital associations, the original survey was sent to 123 identified rural hospitals on November 11, 2014. After fourteen days, another email/fax was sent as a reminder for participants to complete the survey. Due to the low response, the survey was left open longer and finally closed Dec 6, 2014, with only ( $n = 14$ ) participants agreeing to participate in the survey of which only 7 ( $N = 7$ ) completed the entire survey. The final number of participants for this survey targeting rural hospitals in Missouri, Kansas and Arkansas with fewer than 100 beds was ( $n = 14$ ).

The survey then was first modified to include urban hospitals with 100-200 beds, urban hospital with 200-400 beds, urban hospital with 401-600 beds, and urban hospital with more than 601 beds. The second modification was to send the survey to only Medical Doctors M.D. and Osteopathic Medicine D.O. The third modification reduced the specialty list to seven. The fourth modification required means to identify states of location of the hospitals, the states Missouri, Kansas, and Arkansas options were continued since the survey link email was going to be provided to MMS for distribution.

A test survey was sent out to four individuals to assure the survey was correct and met the criteria of MMS and AMA. No changes were needed. While the pilot test was sent to 4 with a 75% response, one was eliminated because the participant practiced at an urban hospital. Thus, the researcher 3 ( $n = 3$ ) accumulated total participants. The modified survey was approved by Walden University Internal Review Board and distributed by MMS on Dec 31, 2014 via email to 5,733 registered AMA MDs. The targeted participants receiving the survey numbered 5,615; 1,026 physicians opened the survey; 15 agreed to participate in the survey, and only two of the 5,615 completed the entire survey. Again, the response rate was drastically lower than anticipated. The survey was left open an additional week and finally closed Feb 20, 2015 with ( $n = 15$ ). The combined surveys gave a total number of participants who agreed to participated ( $n = 33$ ), Urban hospital participant ( $n = 1$ ), was eliminated, and 9 ( $n = 9$ ) did not complete the entire survey. Therefore, after combining the three surveys I was left with ( $N = 12$ ) total participants.

### **Possible Types and Sources of Information or Data**

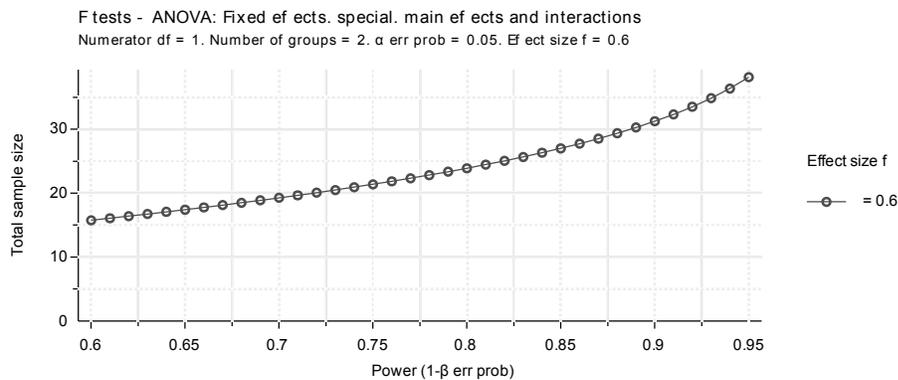
Hospitals were selected by geographical location. Physician demographics, along with medical specialties, will be part of the research study.

Each hospital/physician had an email with the researchers introduction to research and link embedded in HTML to allow participants start the survey with an informed consent and permission to be completed by each participant prior to starting the research survey. MMS had the most current email address list for those physicians currently practicing in Missouri, Kansas, and Arkansas and conducted a broadcast of emailing those providers listed with the AMA.

Survey Monkey was used to provide the consent form and information regarding research study. This mode of research survey allowed the researcher to provide a direct link to the participants that upon completion will collect and provide data directly to research for analysis.

The hospitals and physicians will be the targets of surveys: with and without an on-site surgical pathology services, representing the independent variables.

G\*power analysis was determined  $f = 0.60$ , with alpha of 0.05 at 80% confidence level and also at 95%. A power analysis, using GPower3 software, was conducted to determine the appropriate sample size for the study. An *a priori* power analysis, assuming a large effect size ( $f = .60$ ),  $\alpha = .05$ , indicated a preferred minimum sample size of 90 participants is required to achieve a power of .80. Increasing the sample size to 148 will increase power to .95. Therefore, for this research the researcher sought participants for this study numbering between 90 and 148 participants. (Figure 1).



*Figure 1.* G.Power estimate for participants.

The statistical analysis General Linear Regression was used to address Research Question (RQ1): Is there a difference in physician satisfaction levels when their hospital has an on-site surgical pathology department services compared to those hospitals that do not have an on-site surgical pathology department services? The General Linear Regression allowed comparisons to be made between the mean of the two groups: those hospitals with an on-site surgical pathology department services and those hospitals without an on-site surgical pathology department services. The General Linear Regression statistical analysis determined what any interaction between the two independent variables (hospitals with and without surgical pathology department services) had on the dependent variable (physician satisfaction) could be determined.

### **Instrumentation and Materials**

An electronic survey using those contacts at the different hospitals: a cover letter accompanied the survey from the research author requesting their participating in the study, a detailed outline of the purpose of the study, and the study. The initial survey tool's reliability and validity was established by published peer-reviewed articles: Zarbo 2001; Lankshear 2013; Lockyer, 2009. The permission to use and modify these survey instruments (Appendix D) was obtained from the authors and included in multiple conversations via telephone associated with the modifications needed in the survey instrument HPSE as well as the general modifications that were made the survey and the combination of the three surveys, specific information and concepts were measure and included in (Appendix E).

Part one of the modified survey addresses the basic demographic information, provider demographics, the hospital setting, and the level of surgical pathology departments within their hospital.

Part two of survey instrument included the questions that measure and document specializations of physicians, including the type of hospital setting physicians were practicing within

Part three of the survey instrument contained the questions designed to measure those satisfaction factors that contributed to the physician satisfaction with the surgical pathology department services within as part of their decision-making process.

## **Data Analysis Plan**

The purpose of the dissertation research was to determine if there is a difference in levels of physician satisfaction between those physicians who have access to surgical pathology department services and those who do not. Also determined was the influence of demographic variables on level of satisfaction (Appendix A). The specific research questions addressed in this dissertation study are as follows:

Research Question 1 (RQ1): Is there a difference in physician satisfaction levels when their hospital has an on-site surgical pathology department services compared to those hospitals that do not have an on-site surgical pathology department services?

*Ho*: There is no significant difference in physician satisfaction levels between provisions of on-site versus off-site surgical pathology department services, as measured by the pathology satisfaction survey Henry Ford Hospital/Henry Ford Medical Group Survey ( HFH/HFMG).

*H1*: There is a significant difference in physician satisfaction levels between provisions of on-site versus off-site surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

RQ2: What is the influence of socio demographic variables (age, gender, etc.) on reported levels of physician satisfaction?

*Ho*: Socio demographic variables (age group, gender, country of birth, education level, other medical professional degrees, employment, years as a practicing physician) will have no significant influence on reported levels of physician satisfaction, as measured by the survey HFH/HFMG data collection tool.

*H1*: Socio demographic variables (age group, gender, country of birth, education level, other medical professional degrees, employment, years as a practicing physician) will have a significant influence on reported levels of physician satisfaction, as measured by the survey HFH/HFMG data collection tool.

RQ3: What is the influence of physician specialties on physician satisfaction level related to surgical pathology department services?

*H0*: The specialties of physicians who utilize surgical pathology department services will have no significant influence on physician satisfaction related to surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

*H1*: The specialties of physicians who utilize surgical pathology department services will have a significant influence on physician satisfaction related to surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

Table 1

*Statistical Analyses for Research Questions*

Research Question	Hypothesis	Statistical Procedure
<p>List RQ1</p> <p>Is there a difference in physician satisfaction levels when their hospital has an on-site surgical pathology department services compared to those hospitals that do not have an on-site surgical pathology department services?</p>	<p>Null hypothesis</p> <p>There is no significant difference in physician satisfaction levels between provisions of on-site vs. off-site surgical pathology department services, as measured by the pathology satisfaction survey HFH/HFMG,</p> <p>Alternate Hypothesis</p> <p>There is a significant difference in physician satisfaction levels between provisions of on-</p>	<p>General Linear Regression</p>

	<p>site vs. off-site surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.</p>	
<p>List RQ 2</p> <p>What is the influence of socio-demographic factors (age, gender, specialties, etc) on reported levels of physician satisfaction?</p>	<p>Null Hypothesis</p> <p>Socio-demographic factors have no significant influence on reported levels of physician satisfaction.</p> <p>Alternate Hypothesis</p> <p>Socio-demographic factors have a significant influence on reported levels of physician's satisfaction.</p>	<p>General</p> <p>Linear Model</p> <p>Regression</p>

RQ3	Null Hypothesis	Independent t-test
<p data-bbox="297 321 646 793">What is the influence of physician specialties variables on physician satisfaction level related to surgical pathology department services?</p>	<p data-bbox="690 321 1052 1234">The specialties of physicians utilizing surgical pathology department services population will have no significant influence on physician satisfaction influence on physician satisfaction related to surgical pathology department services as measured by the survey HFH/HFMG data collection tool.</p> <p data-bbox="690 1423 963 1455">Alternate Hypothesis</p> <p data-bbox="690 1497 1052 1892">The specialties of physicians utilizing surgical pathology department services population will have a significant influence on physician satisfaction</p>	

The association being tested is the expression of satisfaction by physicians who have or do not have access to on-site surgical pathology department services. The variables will be measured by a 5-point Likert satisfaction survey. The statistical analysis by SPSS statistical software will include bivariate and multivariate analysis to detect relationships between on-site pathology services and physician satisfaction. The influence of socio-demographic variables will also be determined. Specific statistical tests will include general linear model, ANOVAs, and *t*-tests. The probability level for rejecting the null hypothesis will be set at  $p < 0.05$  “statistically significant difference between the means in two unrelated groups” is used (Green & Salkind, 2011).

### **Research Design**

The research was quantitative cross-sectional study design. The collection of the dependent variable will be a true representative of physician satisfaction at the time the survey is being administered. The cross-sectional is a systematic empirical research design that allows the researcher to compare differences between groups of interest without employing “experimental manipulation or random assignments of subjects” to the research condition because the comparison will be analyzed after the survey has been administered (Creswell, 2009, p.28). This research had two independent variables being represented by hospitals with and without an on-site surgical pathology department. The physicians from these hospitals will be surveyed using the cross-sectional research design; there will be no manipulation of the independent variables (Isaac & Michael,

1995). The dependent variable reported levels of physician satisfaction, and the covariates were the demographic variables.

The cross-sectional research design utilized the hypotheses to determine differences in the variables between or among the groups by utilizing a 5-point Likert satisfaction survey (Likert, 1932). The statistical analysis includes descriptive analysis of demographics to determine age, gender, and years practicing as a physician, physician specialty, and geographic location to allow comparisons between levels of satisfaction to be drawn. Bivariate and multivariate analysis will be conducted to analyze the relationships between on-site pathology services and physician satisfaction as well as the influences of demographic variables. Examples of statistical tests included were general linear model, ANOVAs and *t*-tests. The criteria for rejecting the null hypothesis was set at the probability level  $p < 0.05$ . “Statistically significant difference between the means in two unrelated groups” was used (Green & Salkind, 2011).

The association being tested is the expression of satisfaction by physicians who have or do not have access to surgical pathology department services. The variables were measured by a 5-point Likert satisfaction survey. The statistical analysis included bivariate and multivariate analysis to detect relationships between on-site pathology services and physician satisfaction; the influences of demographic variables were also determined. Additional statistical tests included correlation, regression, ANOVAs, and *t*-tests. The probability level for rejecting the null hypothesis will be set at  $p < 0.05$  “statistically significant difference between the means in two unrelated groups” is used (Green & Salkind, 2011).

### **Threats to Validity**

This study is a quantitative, cross-sectional systematic empirical research design that allowed the researcher to compare differences between groups of interest without employing “experimental manipulation or random assignments of subjects” to the research condition because the comparison were analyzed after the survey has been administered (Creswell, 2009, p.28). This research had two independent variables being represented by hospitals with and without an on-site surgical pathology department services. The independent variables (the hospitals) surveyed in this cross-sectional research design; no manipulations of independent variables were made by researcher (Creswell, 2009; Isaac & Michael, 1995).

The CAP Q-Probe and Q-Tract surveys are Content validity and Face Validity in nature. In use of these surveys since 1989 medical experts agree that the continue measurement of quality by use on these CAP Q-Probe and Q-Tract surveys will be appropriate for the designed survey with the survey contents and the validity measured by inter-rater reliability by continuous monitoring by CAP quality improvement program.

Concurrent validity: results from the test will agree with results of the pre-established test. In the Physician Satisfaction Anatomic Pathology survey, Dr. Richard Zarbo performed the pilot test at Henry Ford Medical Center. After review with Board of Directors and Medical Executive staff at Henry Ford, it was then added to the 2001 CAP Q-Probe 11 quality improvement program (Personal Communication Dr. Richard Zarbo, November, 2013). By using the same Likert scale in the CAP quality improvement program of Q-Probes and Q-Tracks, the reliability of scores remain constant over time.

Retest reliability: allows test to be given to the same individuals time and time again and the scores should correlate strongly throughout the time. Such reliability is part of CAP continuing education ongoing survey to monitor quality laboratory testing.

Test subjects could remember the previous test questions, and this would affect the responses, creating bias. However, with continuous monitoring as part of the CAP quality improvement program, the researchers will be able to determine any improvements or decline in quality of care or expectations by utilizing these tools on a rotating cycle (Trochim, 2006)

Since this research used a survey, it is important to select the correct research tool to measure, which in this research would be physician satisfaction. Likert scale using the 5-point interval measurement scales will be used to measure satisfaction of physicians (Sousa, 2007; Zarbo et al., 2003). The validity of the measurement tool is the most important aspect. The tool provides a valid mean accuracy, correctness, validation of process that includes collection and analyzing data to provide proof of inferences based on instrument as well as published literature providing evidence within the literature to support validity wherein reliability is consistency in the scoring mechanism (Creswell, 2009; Sousa, 2007). There are three ways to test a methodology and establish validity. Content validity is established by an expert judgment and facial validity (Creswell, 2009). The criterion validity determines the consistency between the instrument and concurrent criterion by empirical evidence uses a validity coefficient (Creswell, 2009). Construct validity measured correctly will identify different levels of construct that can be

correlated with empirical evidence (Creswell, 2009). Reliability used to determine the scores are consistent between researches being conducted (Creswell, 2009).

Protecting the research against validity and reliability weaknesses in the quantitative methodology will be accomplished by examining the reliability coefficient to determine reliability of survey tool for satisfaction, including those with face content validity by comparing results with those who have used the survey tool previously (Creswell, 2009).

Another issue to guard against is the similar characteristics and selection bias when the subjects within the study differ in ability. Therefore the survey will also address the different specialties of physicians within the study (Creswell, 2009). This issue also applies to guard against will be data characteristics such as age and gender (Sousa, 2007). Ways to address these issues will be to maintain standardization of conditions, collect and report demographic characteristics of subjects (Creswell, 2009; Sousa, 2007). Using a cross-sectional approach as a snapshot in time will prevent testing fatigue and predicating of questions by subjects (Creswell, 2009). Survey must present a professional appearance, be short, simple, and offer clarity in questions (Jones et al., 2009; Trochim, 2006;). The survey must define the problem in such a way that respondents believe it important to invest their time and efforts to complete it accurately and promptly (Creswell, 2009; Trochim, 2006; Tuckman, 1999). The objectives must be clear and expectations clear to the respondents (Trochim, 2006; Tuckman, 1999).

The researcher must identify the target population and accurately define the sample unit physicians within a hospital setting (Trochim, 2006; Tuckman, 1999). The

research should also identify how survey data will be collected such as direct administration, mail, or email (Creswell, 2009; Trochim, 2006; Tuckman, 1999).

Specific population will be selected rural hospitals with fewer than 100 beds. Therefore, physicians within these organizations will be a convenient population to participate in this research study. The independent variable of rural hospitals fewer than 100 beds is also a convenient population. However to maintain external validity the survey questions will be administered to all physicians regardless of hospital setting, specialty, or gender.

Interaction of Selection and Experimental by using a convenient sampling some groups maybe more affected by the survey questions because of their specialization or interactions with surgical pathology department services.

### **Internal Validity**

Since 1989, CAP has used a Q-Tract, Q-Probe to develop a process that allows on-going monitoring of quality control within a laboratory department from turn-around-times (TATs) to determining whether critical tests should be or need to be re-tested prior to reporting out final results to final synoptic pathology reports. This process has provided face validity and content validity for the instrumentation that has been used since 1989 by CAP. For this particular research, the survey conducted by Dr. Zarbo in CAP Q-Probe 11 and peer-reviewed publication will be used. This survey ongoing and is used in the CAP continuous quality control monitoring process of Q-Probe and Q-Tract. While these questions specifically address anatomical pathology, they can be easily used for surgical pathology since they address TATs .

Since 1989, CAP has used an assortment of statistical analysis including Wilcoxon Rank, ANOVA, and *t*-paired testing to analyze their Q-Probe, and Q-Track data.

The survey conducted by Dr. Sarah Lankshear examines the synoptic reports of pathology and has been part of a 5-year physician satisfaction program conducted in Canada. As of May 26, 2015, the psychometric validation of that particular research has not been published.

### **Ethical Procedures**

The IRB approval (Walden University IRB approval 11-05-14-0266763) was obtained prior to conducting this research study. The confidentiality of each respondent completing the electronic survey was maintained. Only MMS had access to physicians' email and remained confidential within MMS and between MMS and survey participants. After the raw data was coded and tabulated using the SPSS, the survey data remained with the secured researcher electronic research data file for future references in accordance with the IRB requirement of this data storage.

### **Summary**

In summary, this quantitative, cross-sectional research study examined physician satisfaction levels in rural hospitals of fewer than 100 beds with, and without, on-site surgery pathology departments. This chapter presents the proposed research methods for analyzing the possible influences access to surgical pathology department services has on physician satisfaction. A non-randomized sample of between 90 to 148 physicians who practice or have privileges in rural hospitals with fewer than 100 beds was determined by

G Power analysis. Different research questions, what statistical analysis will be applied, and statistical validation will be set for this research study. Chapter four will involve the data and the analysis that is conducted to address the research questions.

## Chapter 4: Results

### **Introduction**

The purpose of this research was to determine the influence of on-site surgical pathology department services on physician satisfaction. Sample population is physicians in the research survey practicing in rural hospitals in Missouri and Kansas.

The research study included a survey that would determine the level of physician satisfaction with those hospitals with an on-site surgical pathology department and those without an on-site surgical pathology department. Data was collected by the on-line service Survey Monkey.

The research survey instruments utilized a self-designed demographic questionnaire and validated research instruments from the Henry Ford Hospital (HFH/HFMG) Survey, PSQ (Standardized (Synoptic) Pathology Reports (PSQ), and PAR Medical Colleague Questionnaire (CPSMPQ). Statistical Package for Social Sciences (SPSS) version 21.0 was employed to analyze data. Analysis of variance (ANOVA), general linear regression, and independent t-test analysis were conducted to address three research questions (RQs) and associated null and alternative hypotheses.

Research Question 1 (RQ1): Is there a difference in physician satisfaction levels when their hospital has an on-site surgical pathology department services compared to those hospitals that do not have an on-site surgical pathology department services?

*Ho*: There is no significant difference in physician satisfaction levels between provisions of on-site versus off-site surgical pathology department services, as measured

by the pathology satisfaction survey Henry Ford Hospital/Henry Ford Medical Group Survey ( HFH/HFMG).

*H1*: There is a significant difference in physician satisfaction levels between provisions of on-site versus off-site surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

RQ2: What is the influence of socio demographic variables (age, gender, etc.) on reported levels of physician satisfaction?

*Ho*: Socio demographic variables (age group, gender, country of birth, education level, other medical professional degrees, employment, years as a practicing physician) will have no significant influence on reported levels of physician satisfaction, as measured by the survey HFH/HFMG data collection tool.

*H1*: Socio demographic variables (age group, gender, country of birth, education level, other medical professional degrees, employment, years as a practicing physician) will have a significant influence on reported levels of physician satisfaction, as measured by the survey HFH/HFMG data collection tool.

RQ3: What is the influence of physician specialties on physician satisfaction level related to surgical pathology department services?

*Ho*: The specialties of physicians :

- Emergency
- General Family D.O,
- General Family M.D.
- Plastic Surgeon

- Radiologist
- Surgeon

who utilize surgical pathology department services will have no significant influence on physician satisfaction related to surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

*H1*: The specialties of physicians:

- Emergency
- General Family D.O,
- General Family M.D.
- Plastic Surgeon
- Radiologist
- Surgeon

who utilize surgical pathology department services will have a significant influence on physician satisfaction related to surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

### **Data Collection Methodology**

The data collection procedures as described in Chapter 3 were changed significantly because of low participation rate and modification of the survey. See Appendix A.

The data collection methodology section includes an outline of the collection process for data, modification of study, and pilot study to conduct research.

The original IRB survey as approved by Walden University Institutional Review Board (IRB Approval # 11-05-14-026676) was sent to providers in Missouri, Kansas, and Arkansas rural hospitals. The initial fax/email contact included an invitation letter to introduce the study. The letter asked how to begin the process to gain administration agreement so that physicians affiliated with the hospital might be asked to participate in a satisfaction survey and requested the name of the appropriate contact person. A follow-up letter was sent requesting information regarding any hospital internal IRB requirements. No hospital responding required an internal IRB compliance. After contact was made with hospital administration, an invitation letter was sent to the contact person.

The invitation letter provided the internet link to Survey Monkey's page containing the researcher's survey. The survey had a built-in consent form. The original survey was sent to 123 rural hospitals derived from a list provided by each state rural hospital association. The survey was initially sent out November 11, 2014. After fourteen days an email/fax was forwarded as a reminder to the contact person to elicit help in encouraging participants to complete the survey. Due to low response, the survey was left open until December 6, 2014. Only 11%, ( $n = 14$ ) participants agreed to participate in the survey of which only 50% ( $n = 7$ ) completed the entire survey. The final number of participants for the original survey was ( $n = 7$ ).

Due to the low participant response, the survey was first modified to include data from urban hospitals. The second modification was to limit survey to Medical Doctors (M.D.) and Doctors of Osteopathic Medicine (D.O). The third modification specialist

group was reduced to seven. The fourth modification was to identify what state physicians practiced in Missouri, Kansas or Arkansas.

I contracted a marketing firm, Medical Marketing Services, Inc. (MMS), for an expanded survey. A modified pilot test survey sent to four individuals who agreed to participate. That pilot survey had one participant eliminated because of practice in an urban hospital setting resulting in a completion of 75% ( $n = 3$ ). The request for change in the survey was made to Walden IRB January 7, 2015 and final approval was received January 16, 2015. The IRB number assigned remained the same. The MMS survey targeted only practicing Medical Doctors (MDs) in Missouri, Kansas, and Arkansas. The modified survey was sent to those MDs registered with the American Medical Association (AMA).

Therefore, the modified research final survey was sent by MMS by email to 5,733 registered AMA MDs in Missouri, Kansas, and Arkansas. MMS reported 5,615 targeted participants received the link to the survey. MMS showed that of the 5,615 surveys sent, 18% ( $n = 1,026$ ) physicians opened the survey, after which only 0.2% ( $n = 15$ ) agreed to participate in the survey. Since the response rate was low, the survey was left open an additional week. The survey was closed February 20, 2015 with total participants of ( $n = 15$ ). The combined surveys (original, pilot, and modified) resulted in a total number of participants who agreed to participate at ( $n = 33$ ). Responses missing data were excluded from those agreeing to participate. Only ( $n = 3$ ) of the 5,615 completed the entire modified survey. Of the three willing to participate, one was excluded for being an urban hospital MD ( $n = 1$ ) leaving researcher with two participants from the modified survey.

The two participants were from Missouri and MDs. Educational and specialty and age were compared to the original survey to explore any duplication in participants in the survey. It was determined that two who had responded in the modified survey had not participated in the original survey, and thus were included in the overall research study. The researcher had ( $n=12$ ) total participants who completed the entire research survey. There was only ( $n = 1$ ), participant from Kansas, that participant was excluded because of the lack of other responses rate from that state. With those changes, the researcher had ( $N = 11$ ) total participants for the data analysis. The overall response rate was 0.002%. However, the total 11 participants did not meet the previously calculated G-Power analysis (Green & Salkind, 2011).

### **Pilot Test**

The modified test survey was sent to four individuals to assure the survey was correct and met the criteria of MMS and AMA. No changes were needed. While the pilot test was sent to four participants with a 100% response, one was eliminated due to being an urban hospital physician. The researcher thus secured ( $N = 3$ ) total participants for the survey.

### **Representativeness of the Sample**

This research sample population was not representative of the population of interest. The final study targeted rural hospitals in Missouri, Kansas, and Arkansas with fewer than 100 beds. With a response rate of less than 1% (11 out of the targeted 5,792 physicians), the external validity presented as very low.

## Results

Data was collected by the on-line service Survey Monkey and downloaded into Excel. The Excel database combined the three surveys: original, pilot, and modified. . The combined data was verified, crosschecked, coded, a codebook created, and then downloaded into SPSS software for statistical analysis. The demographic data were analyzed using bivariate procedures and reported as a frequency distribution. The statistical analysis general linear regression was used to address Research Question (RQ1):

Is there a difference in physician satisfaction levels when their hospital has an on-site surgical pathology department services compared to those hospitals that do not have an on-site surgical pathology department services?

The general linear regression statistical analysis determines if an interaction between the two independent variables (hospitals with and without surgical pathology department services) influences the dependent variable (physician satisfaction).

Variables were measured by a 5-point Likert satisfaction scale. Statistical analysis tests included general linear regression, ANOVAs, and independent t-tests. The probability level for rejecting the null hypothesis will be set at  $p < 0.05$  when “statistically significant difference between the means in two unrelated groups” is used (Green & Salkind, 2011).

### Descriptive Statistics

**Age.** Study participant ages ranged from 25 to older than 75 years of age. The age range with the highest number of study participants was 45-54 with 45.5.0 % ( $n = 5$ ). The

age range with the lower number of participants was 75 and older 89.1 % ( $n = 1$ ). The age group range 35-44, 27.3% ( $n = 2$ ) and 55-64, 18.2% ( $n = 2$ ). There were no participants in age groups 25-34 or 65-74.

**Gender.** Fifty-four percent ( $n = 6$ ) of the study participants completing the survey were male and 45.5% ( $n = 5$ ) were female.

**Education.** The highest educational level or degree completed by study participants was Medical doctor 81.3% ( $n = 9$ ), followed by Doctor of Osteopathic Medicine (DO) 18.2% ( $n = 2$ ).

**Other professional degrees or certification.** Twenty-seven percent of the study participants did not have an additional professional degrees or certification ( $n = 3$ ). Nine percent of the study participants had a professional degree as a Registered Nurse ( $n = 1$ ), Medical Technologist/scientist/Medical Laboratory Technician (MT/MLS/MLT) 27.3 % ( $n = 3$ ), Pathologist Assistant, Nurse Practitioner, Laboratory Assistant, DDS, and EMT all were 9.1 % ( $n = 1$ ).

**Specialties.** General Family MD/Family Practice 45.5% ( $n = 5$ ), General Family DO 16.7 % ( $n = 2$ ), General Surgery as well as the following Diagnostic Radiology, Emergency, Plastic surgeon, 8.3% ( $n = 1$ ), for each specialization.

**Type of hospital.** Rural hospitals with fewer than 100 beds in Missouri, 100.0% ( $N = 11$ ).

**State.** Missouri had 91.7% ( $n = 11$ ) participants, Kansas 8.3% ( $n = 1$ ), and Arkansas 0%. Due to lack of response from Arkansas and low response, with one participant in Kansas, both Arkansas and Kansas were not included in the data analysis

for states.

**Country of birth.** American born participants made up 81.8% ( $n = 9$ ) and foreign born made up 18.2% ( $n = 2$ ).

**Employment type.** Participants who were employed as hospital employees made up 72.7% ( $n = 8$ ) where the private practice 18.2% ( $n = 2$ ), and contracted 9.1% ( $n = 1$ ).

**Years as a physician.** Twenty-seven percent of physicians indicated that they were physicians 1-5 years, 6-10 years and 16-20 years for each group respectively ( $n = 3$ ), 11-15 years 9.1% ( $n = 1$ ), and >25 years 9.1% ( $n = 1$ ).

**Pathologist on site.** Ninety percent ( $n = 10$ ) of the participants did not have a pathologist on-site at their facility, while 9.1% did have a pathologist on site ( $n = 1$ ).

**Pathology services.** Twenty-seven percent ( $n = 3$ ) participants of the pathology services were available 1-2 days a week, 4.5% ( $n = 5$ ) 4-5 days a week, 27.3% ( $n = 3$ ) pathologist on demand.

### **Descriptive Inferential Statistical Procedures**

In addition to the descriptive statistical procedures, several inferential statistical procedures were performed including, general linear regression and an independent t-test analysis. Assumptions relevant to these statistical procedures were evaluated and are in direct alignment with each of the study's research questions in the following section.

RQ1: Is there a difference in physician satisfaction levels when their hospital has an on-site surgical pathology department services compared to those hospitals that do not have an on-site surgical pathology department services?

The independent variable physician satisfaction were statistically analyzed as the overall satisfaction with pathology services employing surveys validated by Henry Ford Hospital (HFH/HFM), PAR Medical Colleague Questionnaire (CSPMPQ), and PSQ Standardized (Synoptic) Pathology Reporting survey. Calculations were the sum of the study participants' responses. The dependent variable regarding access to an on-site surgical pathology compared to those physicians who do not have access to on-site surgical pathologies services were statistically analyzed as overall satisfaction of those services.

### **Univariate Linear Regression Analysis for RQ1**

Is there a difference in physician satisfaction levels when their hospital has an on-site surgical pathology department services compared to those hospitals that do not have an on-site surgical pathology department services?

An independent t-test analysis was performed to analyze the relationship between presence or absence of on-site surgical pathology services to overall physician satisfaction. In these scores for IV, there was a notable difference (on-site surgical pathology department services) ( $M = 5.0$ ) and IV level 2 (absence of an on-site surgical pathology department services) ( $M = 3.50$ ,  $SD = .527$ ) with conditions:  $t(9) = -2.714$ ,  $p = .024$ . Therefore, the conclusion is independent t-test results indicate a significant difference between the presence (or absence) of on-site surgical pathology services with overall satisfaction with pathology services. We reject null hypothesis. We reject the alternative hypothesis that there is notable difference in physician satisfaction levels relating to a surgical pathology department service being on-or-off-site.

Table 2

*Independent t-Test Analysis Predicting Physician Satisfaction (PS) With On-Site Surgical Pathology Department Services (OSSPDS) and Those Without Access To On-Site Surgical Pathology Department Services (OSSPDS).*

Variable	N	M	SD
On-Site Pathology department	1	5.0	.000
No On-Site Pathology Department	10	3.5	.527

Table 3

*Independent t-Test Analysis Summary for OSSPDS and Those Without Access To An OSSPDS Predicting PS.*

	OSSPDS			not access to OSSPDS			95% CI for Mean Difference	t	df
	MD	SE	n	MD	SE	n			
Physician Satisfaction	-1.500	.000	1	-1.500	.167	10	-2.750 ,-.250	2.714*	9

\* $p=.024$

RQ2: What is the influence of demographic variables (age, gender, country of birth, education level, other medical professional degrees, employment, years as a practicing physician) on reported levels of physician satisfaction?

Multiple linear regression analysis and a *t*-test were implemented to evaluate the influence of demographic variables on overall physician satisfaction. The first model (model 1) examined gender with overall satisfaction. The second model (model 2)

examined type of employment and years as a practicing physician. The third model (model 3) examined the overall satisfaction and specialties. A significant level of 0.05 was used for the regression coefficients. ANOVA analysis was performed to test the fit of regression models.

The Pearson Correlation for overall satisfaction with pathology services equaled 0.671. The Pearson Correlation indicates a strong linear relationship (Green and Salkind, 2011).

The overall satisfaction summary score was used to examine the independent variable's demographics. The overall satisfaction summary score served to operationalize the dependent variable overall satisfaction for physicians with surgical pathology department services. The demographic variables were examined with the overall satisfaction scorings that were numerically coded to enable parametric statistical analysis to be applied (Green and Salkind, 2011).

Tables 4 through 7 display the results of multiple linear regression, ANOVA, independent *t*-test, and general linear model for what is the influence of demographic variables (age, gender, etc.) on reported levels of physician satisfaction. Due to low response rate with only 1 participant from Kansas, no analyses were conducted comparing states.

### **Null and Alternative Hypothesis for RQ2**

Ho: Socio-Demographic variables (age group, gender, country of birth, education level, other medical professional degrees, employment, years as a practicing physician)

will have no significant influence on reported levels of physician satisfaction, as measured by the survey HFH/HFMG data collection tool.

H1: Socio-Demographic variables (age group, gender, country of birth, education level, other medical professional degrees, employment, years as a practicing physician) will have a significant influence on reported levels of physician satisfaction, as measured by the survey HFH/HFMG data collection tool.

### **Overall Physician Satisfaction on Gender**

An independent *t*-test was conducted to compare overall physician satisfaction on gender. There were slight difference in the scores for males ( $M = 3.67$ ,  $SD = .516$ ) and females ( $M = 3.60$ ,  $SD = .894$ ) conditions;  $t(9) = .155$ ,  $p = .880$ . These results suggest that male physicians had a slightly higher overall satisfaction. Specifically, the results show that male physicians have a slightly higher overall physician satisfaction score for surgical pathology department services than female physicians.

### **Overall Satisfaction Employment Type and Years as a Physician**

Tables 4, 5, 6 and 7 present the results of the linear regression and ANOVA analyses for estimating overall physician satisfaction with surgical pathology department services and employment type and years as a physician. Table 4 summarizes the descriptive statistics and analysis results. For model 1, employment type did not predict a significant overall satisfaction with surgical pathology department services  $F(1,9) = 1.227$ ,  $p < .292$ . The relationship between employment type and overall physician satisfaction was not significant ( $beta = -.346$ ,  $p < .297$ ). The standard error of the estimate (standard error of the regression) for model 1 was .667. For model 2, employment type

and years as a physician did not predict a significant overall satisfaction with surgical pathology department services  $F(1,8) = 1.073, p < .386$ . The relationship between employment type and overall physician satisfaction was not significant ( $beta = -.293, p < .385$ ) and the relationship between years as a physician and overall physician satisfaction was not significant ( $beta = .307, p < .363$ ). The standard error of the estimate (standard error of the regression) for model 2 was .669. Therefore, the null hypothesis was accepted and alternative hypothesis rejected.

Table 4

*Descriptive Summary For OSSPDS and Those Without Access To An OSSPDS*

*Predicting PS*

Condition*	M	SD
Employment Type	1.45	.934
Years as Physician	2.73	1.618
OS with Patho Services	3.64	.674

\*N=11

Table 5

*Linear Regression Analysis Summary For OSSPDS And Those Without Access To An*

*OSSPDS Predicting PS*

Model	R	R <sup>2</sup>	Adjusted R Squared	SEM		Change Statistics		
				R squared change	F Change	df1	df2	Sig F change
1. Employment Type	.346	.120	.022	.667 .120	1.227	1	9	.297
2. Employment Type, Years as a physician	.460	.212	.014	.669 .092	.929	1	8	.363

Table 6

*ANOVA Analysis Summary for OSSPDS and Those Without Access To OSSPDS*

*Predicting PS*

Model	SS	df	MS	F	P
1. Employment Type	.545	1	.545	1.227	.297
2. Employment Type, Years as a physician	.962	2	.481	1.073	.386

Table 7

*Coefficient Analysis Summary for OSSPDS and Those Without Access To An OSSPDS*

*Predicting PS*

Model	Beta	t	P
1. Employment Type	-.346	-1.308	.297
2. Employment Type, Years as a physician	-.293 (.307)	-.918 (.964)	.385 (.363)

Do physician's specialties influence their overall satisfaction with on-site surgical pathology departments?

Null and alternative hypothesis for RQ3.

Ho: The specialties of physicians

- Emergency

- General Family D.O,
- General Family/Family Practice M.D.
- Plastic Surgeon
- Radiologist
- Surgeon

The following physician specialties: General Family D.O., General Family/Family Practice M.D., Diagnostic Radiology, General Surgery, Emergency and Plastic Surgeon, utilizing surgical pathology department services population that will have no significant influence on physician satisfaction related to surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

All utilizing surgical pathology department services population that will have a significant influence on physician satisfaction related to surgical pathology department services, as measured by the survey HFH/HFMG data collection tool.

The general linear Model (GLM), Univariate and Regression analysis of variance (Table 8) shows the distribution of specialties ( $N=11$ ).

The demographic data were analyzed using bivariate procedures and reported as a frequency distribution. The specialties showed that the Medical Doctor represented the highest group responding to the satisfaction survey.

Table 8

*Demographic Summary for Different Specialties OSSPDS and Those Without Access to an OSSPDS Predicting PS*

Specialties*	Frequency	Percent	Valid	PercentCumulative Percent
General Family DO	2	18.2	18.2	18.2
General Family MD/Family Practice	5	45.5	45.5	63.6
Diagnostic Radiology	1	9.1	9.1	72.7
General Surgery	1	9.1	9.1	81.8
Emergency	1	9.1	9.1	90.9
Plastic Surgeon	1	9.1	9.1	100.0

*N* = 11

#### **Specialties overall satisfaction with surgical pathology department services**

The study participants reported their satisfaction level based upon medical specialty (Table 9). Diagnostic radiology reported a high level of overall physician satisfaction with surgical pathology department services.

Table 9

*Overall Satisfaction Scores with Specialty Group Summary for OSSPDS and Those Without Access to an OSSPDS Predicting PS*

Specialty	M	SE	95% CI	
			LL	UL
General Family DO	3.500	.361	2.573	4.427
General Family MD/Family Practice	3.200	.228	2.614	3.786
Diagnostic Radiology	5.000	.510	3.689	6.311
General Surgery	4.000	.510	2.689	5.311
Emergency	4.000	.510	2.689	5.311
Plastic Surgeon	4.000	.510	2.689	5.311

General linear model (GLM), Univariate shows the main effect of specialty groups  $F(1,9) = .969, p < .351$  (Table 10). When the overall satisfaction was predicted, it was found that specialties ( $beta = .312, p < .351$ ) were not a significant predictor (Table 12). The overall model fit was  $R^2 = .097$  (Table 11). Therefore, the null hypothesis that the specialties of physicians utilizing surgical pathology department services will have no significant influence on physician satisfaction is accepted.

Table 10

*General Linear Model Levene Summary Specialties for OSSPDS and Those Without Access to an OSSPDS Predicting PS*

Variable	F	df1	df2	P
Overall Satisfaction with pathology services	.969	1	9	.351

\*N = 11

Table 11

*Model Summary for Specialties and Overall with OSSPDS and Those Without Access to an OSSPDS Predicting PS*

Model	R	R <sup>2</sup>	Adjusted R squared	SEM		Change Statistics		
				R squared change	F Change	df1	df2	Sig F change
Specialties	.312	.097	-.003	.776	.969	1	9	.351

Table 12

*ANOVA Summary for Specialties on Overall Physician Satisfaction with OSSPDS and Those Without Access to an OSSPDS Predicting PS*

Model	SS	df	MS	F	P
Specialty	.442	1	.442	.969	.351

### **Henry Ford Hospital (HFH/HFM) Survey**

A descriptive analysis was conducted to compare the level of satisfaction between physicians in Missouri (Table 13). The analysis includes Missouri physicians only. Due to the low response rate for Kansas (n=1), it was not included in the overall analysis.

There was a significant difference increase of satisfaction with communication by pathologist ( $M = 3.91, SD = 0.701$ ) while the lowest satisfaction scores were with pathologist accessibility for FS ( $M = 2.55, SD = 1.44$ ). These results suggest that physicians have a higher level of satisfaction regarding communication from pathologist when compared to pathologist accessibility for FS. When using the HFH/HFM survey to determine physician satisfaction, the ranking average for eight of the variables were

slightly over “acceptable average” ranking 3. The remaining four were slightly over “below average” ranking 2. This indicates that overall physicians reported a higher level of satisfaction from below average to acceptable average. The highest level of satisfaction report was with communication from pathologist. The lowest level of satisfaction reported was with pathologist accessibility for frozen sections.

Table 13

*Independent t-Test to Compare Overall Physician Satisfaction between Physicians in Missouri Physicians using HFH/HFM survey to Determine on Overall Physician Satisfaction with OSSPDS and Those Without Access to an OSSPDS Predicting PS*

Variable		N	M	SD	SEM
Diagnostic accuracy	Missouri	11	3.82	.874	.263
Communication by pathologist	Missouri	11	3.91	.701	.211
STAT TAT biopsy <24 hours	Missouri	11	2.73	1.555	.469
Routine biopsy 2 days	Missouri	11	3.55	.688	.207
FN 6-48 hours	Missouri	11	2.82	1.601	.483
FS < 20 minutes	Missouri	11	2.82	1.471	.444
Quality of tumor board	Missouri	11	3.18	1.834	.553
Pathologist accessibility for FS	Missouri	11	2.55	1.440	.434
Pathologist's responsiveness to problems	Missouri	11	3.64	.924	.279
Overall quality interactions	Missouri	11	3.91	.831	.251
Abnormal results notification	Missouri	11	3.36	1.286	.388
Clarity and format of reports	Missouri	11	3.64	.505	.152

### **PSQ Standardized (Synoptic) Pathology Reporting Survey**

A descriptive analysis was conducted to compare the level of satisfaction (Table 14) physicians with overall satisfaction with synoptic reports. The results presented for

overall satisfaction with synoptic reports ( $M = 3.09$ ,  $SD = 1.64$ ). The highest level of satisfaction reported was ease of locating reports ( $M = 3.36$ ,  $SD = 1.362$ ). These results suggest that physicians have a greater level of overall satisfaction with the ease of locating reports reporting when compared to follow up calls or consultations with pathologist ( $M = 2.27$ ,  $SD = 1.902$ ).

Table 14

*Independent t-Test to Compare Overall PS Between Missouri Physicians Using PSQ Survey to Determine on Overall PS with OSSPDS and Those Without Access to an OSSPDS Predicting PS*

State		<i>n</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
Overall satisfaction					
with synoptic pathology reports	Missouri	11	3.09	1.640	.495
Pathologist facilitates interpretation of reports	Missouri	11	3.18	1.722	.519
Ease of locating report	Missouri	11	3.36	1.362	.411
Clinical information to cancer diagnostics	Missouri	11	3.00	1.673	.505
	Missouri	11	2.91	1.578	.476
Follow up calls or consultations with pathologist	Missouri	11	2.27	1.902	.574
Reports complete according to standards	Missouri	11	2.55	1.753	.529

**PAR Medical Colleague Questionnaire (CSPMPQ)**

A descriptive analysis was conducted to compare the level of satisfaction as measured by how pathologists work with physician colleagues (Table 15). There was a significant difference with how well pathologists work with physician colleagues. The results presented as pathologist works well with physician colleagues ( $M = 3.82$ ,  $SD = 1.471$ ) These results suggest that physicians have a higher level of satisfaction regarding pathologists working well with physician colleagues when compared to physician satisfaction regarding pathologist accepts responsibility ( $M = 2.82$ ,  $SD = 1.94$ ).

Table 15

*Independent t-Test to Compare Overall PS between Missouri Physicians using CSPMPQ Survey to Determine on Overall PS with OSSPDS and Those Without Access to an OSSPDS Predicting PS*

	State	<i>n</i>	<i>M</i>	<i>SD</i>	<i>SEM</i>
Pathologist works well with physician colleagues	Missouri	11	3.82	1.471	.444
Communication effectively by pathologist	Missouri	11	3.82	1.471	.444
Pathologist collaborates with medical team	Missouri	11	3.36	1.859	.560
Pathologist involved in professional development	Missouri	11	3.36	1.859	.560
Pathologist accepts responsibility	Missouri	11	2.82	1.940	.585
Pathologist provides timely consultation	Missouri	11	3.00	1.612	.486
Pathologist facilitates learning	Missouri	11	3.00	1.612	.486
Pathologist participates as part of health care team	Missouri	11	3.00	1.673	.505
Pathologist exhibits professional and ethical behaviors	Missouri	11	3.64	1.433	.432

## Summary

This study sought to evaluate the influence on physician satisfaction resulting from the presence or lack of on-site surgical pathology department services in rural hospitals with fewer 100 beds (RQ1). Demographic factors were considered in relation to physician satisfaction (RQ2). Medical specialties were considered in relation to physician satisfaction (RQ3).

Thirty-three physicians agreed to participate in the survey. Twenty-one participants were excluded from the study results because they did not fully complete the online survey or because they did not practice at a rural health hospital with fewer than 100 beds. The final population sample consisted of 11 survey responses. Data secured via the online survey tool Survey Monkey and analyzed with SPSS Version 21.0.

A general linear model using univariate linear regression and Independent t-test analyses were used to predict the relationship between physician satisfactions and the presence of on-site surgical pathology department services (RQ1). The analysis found the regression model for predicting overall physician satisfaction was significant. There was a slight positive slope ( $beta = .071, p < .024$ ) between the independent and dependent variables, indicating that the overall summary score slightly increased. Formulated by the results of the general linear regression analysis, the null hypothesis for RQ1 was accepted and alternative hypothesis rejected.

Next, general linear regression and ANOVA analyses were conducted to predict the relationship between overall physician satisfaction with the presence or lack of surgical pathology department services and demographics (RQ2). The analysis indicated

that gender, employment type, and years as a physician did not account for a significant overall physician satisfaction. Therefore, the null hypothesis for RQ2 stating that socio-demographic variables will have no significant influence on physician satisfaction was accepted.

The general linear regression analyses were conducted to predict the relationship between levels of overall physician satisfaction with or without the surgical pathology department services based on the specialties of physicians. univariate shows the main effect of specialty groups  $F(5,11) = 2.497, p < .169$ . The means for the different specialty groups were slightly different from each other based on the specialty groups. When the overall satisfaction was predicted, it was found that specialties ( $beta = .312, p < .351$ ), was not a significant predictor. The overall model fit was  $R^2 = 0.097$ . Therefore, the null hypothesis for RQ3 stating the specialties of physicians had no significant influence on physician satisfaction was accepted.

The descriptive statistical analysis was conducted to determine the relationship between levels of satisfaction with overall physician satisfaction as related to the influence of demographic factors (RQ3) as follows:

- diagnostic accuracy,
- communication by pathologist,
- STAT biopsy (TAT < 24 hours),
- routine biopsy (TAT 2 days),
- FN 6-48 hours,
- quality of tumor board FS < 20 minutes,

- pathologist responsiveness to problems,
- overall quality of interactions,
- abnormal result notification,
- clarity and format of reports,
- overall satisfaction with synoptic pathology reports,
- pathologist facilitates interpretation of reports,
- ease of locating report,
- clinical information to cancer diagnostics,
- time frame of final reports,
- follow up calls or consultations with pathologist,
- reports complete according to regulatory standards,
- pathologist works well with physician colleagues,
- communication effectively by pathologist,
- pathologist collaborates with medical team,
- pathologist involved in professional development,
- pathologist provides timely consultation,
- pathologist participates as part of health care team,
- pathologist exhibits professional and ethical behaviors,.

The analyses indicated that the variables did not account for a significant overall physician satisfaction with surgical pathology department services. Therefore, based on the results of the analysis, there are no significant variables that would account for the overall physician satisfaction with surgical pathology department.

Chapter 5 summarizes the study's findings and their interpretation, discusses limitations found during execution of the study, and concludes with implications for future social change including recommendations for additional research.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The purpose of this quantitative cross-sectional research study was to examine the influence of physician satisfaction as it relates to on-site surgical pathology department services in rural hospitals in Missouri, Kansas, and Arkansas. Examination of literature indicated that determining influence of this element of physician satisfaction was clearly under-represented at the time of this research. The research was undertaken to add to the information and knowledge base available to hospital administrators about the value, or lack of value, in providing on-site surgical pathology services in order to make affiliated physician practices more efficient and effective, and thus increasing physician job satisfaction.

### **Discussion of Key Findings**

This researcher's study did not find any significant relationship between the presence of on-site pathology services and overall physician satisfaction. There were no responses from Arkansas, and while there was a single response from Kansas, it was not included in the overall statistical analysis.

### **Summary of the Findings**

The findings indicate that the presence of, or absence of, on-site surgical pathology department services did not influence physician satisfaction. There is presently limited research in the area of physician satisfaction as such relates to surgical pathology services. The low response generated by this survey targeting 5,000+ physicians suggests

that physician satisfaction relating to access to or lack of access to surgical pathology services has yet to provoke professional or scholastic interest.

The “paradigmatic resolution,” as in organizational sociology conceptual theory with population ecology, is the basis of this research’s conceptual theory (Scott, 1981, p.53). The resolution association was tied to the rational models based on human dynamics within an organization (Scott, 1981b), which is employed to examine social system models while maintaining a focus on internal organizational model (Scott, 1981b). Human dynamics will impact any organization. It is mandatory to understand how physicians work together within an organization, work within their own peer groups, work within their own specialty groups, and work with other departments and non-affiliated physicians. Those relationships will influence their satisfaction as physicians utilize the services within an organization through the continuum of care for patients (Laegarrd, 2006; Scott, 1981b; Scott, 2004). The research conducted by Hall, 1996, examined the association within a group focusing on culture, education, organization, and occupation. Those results vary in the mechanism from which they attribute to their organizational structure via various mechanisms that exert influence within or between those groups (Hall, 1996). This research also indicated that physician organizational structure had no impact on overall physician satisfaction.

### **Study Limitations**

The sample population of physicians in Missouri, Arkansas, and Kansas rural hospitals was selected as a convenience sample rather than a random sample. Although the intent was to examine influence of on-site surgical pathology department services on

physician satisfaction by seeking an under-sampled population, it was evident that the final sample size differed from the physician population in gender distribution, education, and hospital setting (MMS, 2015). A major limitation for this research was the low participation number of physicians to complete the survey. A total of 5,792 physicians received the survey, and only 11 ( $N=11$ ) completed the entire survey. The validity was maintained by relying on surveys that had been approved, used, and validated by surveys developed by Henry Ford Hospital (HFH/HFM) and PAR Medical Colleague Questionnaire (CSPMPQ) by Lockyer, 2009 and PSQ Standardized (Synoptic Pathology). This supports findings that physicians practicing in affiliation with rural hospitals are underrepresented.

### **Recommendations**

The strengths and limitations of this study provide ample motivation for future research. Although this study did not show a significant relationship between overall physician satisfaction with on-site surgical pathology department services, it is evident that both additional studies involving rural hospitals and the demand for on-site pathology services are certainly required, would be profoundly useful, and would extend knowledge on the complex relationships in the subject area.

Researchers attempting to review and compare studies would benefit greatly if a focus on surgical pathology services within rural hospitals were addressed in a fashion that would compel responses from a broad spectrum of physicians. Alternate approaches to the voluntary data collection methodologies should be employed. For example, a study recruiting through corporate medical data services or regulating agency such as College

of American Pathologists (CAP) would be more productive if such a survey offered material compensation for participation or employed trained, in-person interviewers (Crosby et al., 2006).

### **Implications for Social Change**

Physician satisfaction surveys can be used internally within a medical practice or in a hospital as well as externally by national organizations to address specific issues. This research added to the totality of knowledge because the minimal response reflects the widespread and general lack of relevant knowledge among the practicing physician population regarding the value of on-site pathology services and its ability to improve patient care. It is hoped that minimal response to this study will prod administrators and physicians to work for positive change in rural hospitals. Implications of a methodological, theoretical, and empirical are also not to be found because of the minimal response to the survey.

The results of this study will be shared with interested medical and healthcare groups. More importantly, these findings should be communicated broadly to upper level management in healthcare organizations to encourage physicians to participate in similar surveys. There is no better mechanism to develop further comprehension of the dynamics of the pathologist-physician relationships and to establish criteria and expectations for better patient care.

All health practitioners should share responsibility for promoting social change in this area. This issue, and other similar issues, will be important enough that hospital administrators should make survey participation a requirement of employment. Success

of compulsory participation is demonstrated in Canada where physicians are required to respond to legitimate scholarly surveys that will have a possible positive influence on improved patient care. In fact, similar surveys would be excellent tools for CAP to incorporate into the CAP Q-Probe surveillance program. Through the CAP Q-Probe program, the focus could be narrowed to the rural hospital level addressing the physician-pathologist professional relationships and expectations. The CAP Q-Probe could also narrow the focus of the influence of physician satisfaction to rural hospitals with fewer than 100-beds.

The implication for social change, therefore, is the development and implementation of physician satisfaction surveys that will target rural hospitals across the nation. Providing these resources to physicians will be beneficial for the overall operations within a hospital and eventually patient care, but even more so for engaging physicians to set expectations for pathologist involvement.

### **Conclusion**

Research question one (RQ1) evaluated overall physician satisfaction rural hospitals with on-site surgical pathology department services. General linear regression and analysis of variance (ANOVA) procedures predicted a significant relationship between overall physician satisfaction and the presence of on-site surgical pathology department services ( $p < .024$ ). The null hypothesis was rejected and indicates there is significant difference in physician satisfaction level between provisions of on-site vs. off-site surgical pathology department services. The results for RQ1 are consistent with the lack of research as represented by an examination of literature and with the low

participant pool. For example, Jones et al., (2009) examined hospital-affiliated physicians as they dealt with anatomical and clinical pathology TATs. CAP also utilized a customer satisfaction survey to assess quality within pathology and laboratory testing (Howanitz & Steindle, 1991; Jones et al., 2009; Zarbo et al., 2003, 2006). Also, a PSQ Standardized (Synoptic) Pathology Reporting survey examined comparison between narrative and synoptic pathology reporting (Howanitz & Steindel, 1991; Novis et al., 2004; Lankshear, 2013; Zarbo et al., 2003).

Therefore, the type of specialty of a physician utilizing surgical pathology department services has no significant influence on physician satisfaction. The researched showed the main effect of satisfaction with specialty groups as  $p < .351$ .

Lankshear (2013) evaluated the relationships between some physician specialties and overall physician satisfaction with synoptic pathology reports. That study employed a dependent  $t$ -test to illustrate a statistically significant difference in the satisfaction scores of such profession as pathologists and oncologists ( $t_{169} = 3.044, p = .003$ ). The qualitative remarks in the Lankshear (2013) study exposed technology-related issues as the most commonly cited.

It is difficult to compare this study's findings with those reported in literature. As observed in these study results, the issue is fundamentally important because it supports and upholds Zarbo's (2009) determination that there is a need for more research to determine physician satisfaction with pathology services.

Other referenced studies differ in data collection, analysis methodologies, and sample populations. For instance, two studies Jones et al., (2009) and Zarbo (2006) based

physician satisfaction on TAT of pathology services. That approach likely underestimated the impact of rural physician satisfaction with an on-site surgical pathology department. The study conducted by Zarbo et al., (2003), as well as this study, relied on self-reported satisfaction levels validated surveys developed by Henry Ford Hospital (HFH/HFM) and PAR Medical Colleague Questionnaire (CSPMPQ) by Lockyer, 2009 and PSQ Standardized (Synoptic Pathology).

Data analysis results are not directly comparable across all of the studies. The study conducted by Zarbo et al., (2003) used an overall satisfaction score that was calculated for the primary performance indicator. It was the only study that analyzed the relationship between overall satisfaction and the ranking number of the scale. Alternately, this research used the general linear regression to determine the overall physician satisfaction level. Lankshear (2013) utilized descriptive, correlation analysis and *t*-test statistical analysis to report positive relationships between the participant's perceptions of overall satisfaction while Lockyer (2009) used factor analysis to determine the level of satisfaction with the interaction between the medical colleagues.

This research's study population selection is one factor that may have affected results. The studies conducted by Zarbo et al., (2003), Lankshear (2013), and Lockyer (2009) contained a larger participant pool because of accessibility of the CAP and the Ontario Cancer Registry specifically and because survey participation in Canada is required. This survey sought data from rural hospital associations for Missouri, Kansas, and Arkansas and later from a commissioned medical marketing service. A very low number of study participants responded. This study was based on a multidimensional

concept of overall physician satisfaction. The study sought to examine the influence on-site surgical pathology department services would have on physician satisfaction. The study also sought to address inconsistencies in instrumentation and controls for rural health hospital and demographic factors reported in past studies.

The researcher must speculate that the 5,623 physicians who received this survey were simply too busy or did not feel that their voices are being heard when they participate in these types of surveys.

During recruitment of participants, I received telephone calls from two different hospital administrators, each telling me that they presented the survey request to their medical staff team. The response was that the physicians did not feel that survey was worth their efforts. Note too that Arkansas had no participants, and only one physician responded from Kansas. I also feel many physicians are so caught up in the stress of daily patient care that they feel they have no time to consider theoretical issues like the availability of an on-site pathology service for the improvement of patient care.

In conclusion, I would hope future physician satisfaction surveys are conveyed to participants in a manner that data received would be returned in amounts adequate to form an accurate picture of information gathered and therefore would be valuable to the improved practice of medicine and to better patient care.

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## Appendix A: Operationalization of Variables and Coding

Variable Category	Variable	Level of Measurement	Description	Code
Independent	Hospitals Rural 100 beds Urban 100- 200 Urban 201- 400 Urban 401 – 600 Urban >601	Nominal 1 = Rural hospitals fewer than 100 beds 2 = urban hospitals 100 – 200 3 = Urban Hospitals 201-400 4 = Urban Hospitals 401-600 5 = Urban hospitals >601	Binary Code  1 = Hospitals without an on-site surgical pathology department. 2 = Hospital with an on- site surgical pathology department.	Example: Path_Serv 1 (1=no and 2=yes))
Dependent	Physician Satisfaction	Interval	0= Not applicable 1= Poor; 2 = Below Average; 3 = Acceptable Average; 4 = Good; 5 = Excellent	Example: OVERSAT
Covariates/Demo graphics	Level of Education	Ordinal	1= DO 2= MD 3=NP 4=PA	EDUC
	Gender	Nominal	1 = Male; 2 = Female	GEND
	Specialty	Nominal	1 General Family DO 2 General Family MD/Family Practice 3 Diagnostic Radiology 4 General Surgery 5 Internal Medicine 6 Gastroenterology 7 General Family NP 8 General Family PA 9 Otolaryngologist 10 Cardiologist 11 Endocrinologist 12 GYN/OB 13 Pediatrician 14 Infection Control 15 Wound and Hyperbaric 16 Rheumatologist 17 Neurologist 18 Oncology 19 Hospitalist 20 Emergency 21 Dermatology 22 Plastic Surgeon	SPC

			23 Ophthalmic 24 Orthopedic 25 Urologist 26 Pulmonologist 27 Other	
Employment		Nominal	1 = Hospital Employee; 2 = Private Practice 3 = Physician Group 4 = Contracted	EMP



## Appendix C: PAR Medical Colleague Questionnaire



21829

### Medical Colleague Questionnaire



#### Questionnaire Instructions

Using the scale on the right-hand side, indicate how much you agree with the statements on the left side of the page.

Please indicate your answer by filling in the bubbles like this ●, not like ⊗ or ↗.

Note: Many physicians' colleagues use this questionnaire. Therefore, you may not be able to assess all of the following items. If you feel you do not have enough information to fairly assess an item, please mark it as **"Unable to Assess". This is very important.** Please do not leave any question blank. Thank you!

Assessed Physician's Name: Dr. \_\_\_\_\_

Your Name: Dr. \_\_\_\_\_

**How would you describe your professional relationship to this physician (select one)?**

- Peer (similar practice)
- Consultant
- Referring Physician

**How well do you know this physician (select one)?**

- Not at All
- Not Well
- Somewhat
- Well
- Very Well

	Strongly Disagree 1	2	3	4	Strongly Agree 5	Unable to Assess UA
<b>This physician:</b>						
1. Works well with physician colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Speaks respectfully of physician colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Communicates effectively with other health care professionals (i.e., non-physicians)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Respects the rights of patients (e.g., right to choice, privacy, refusal of treatment)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Maintains confidentiality of patients and their families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Appears to communicate effectively with patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Appears to communicate effectively with patients' families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Communicates purpose and results of consultations to patients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Documents findings and care appropriately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Refers patients appropriately	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Assumes appropriate responsibility for transfer of care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Provides a clear understanding about who is responsible for the continuing care of the patient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Coordinates patient care effectively with physicians and other health care professionals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Makes arrangements for care outside of office hours (e.g., after hours, on weekends, and vacation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Shows compassion for patients and their families	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please turn over

6243453939

Compared to other physicians I know, this one is:

	Among the Worst	Bottom Half	Average	Top Half	Among the Best	Unable to Assess
	1	2	3	4	5	UA
16. Co-ordinates the management of care for patients with complex problems	<input type="radio"/>					
17. Respects the rights of patients	<input type="radio"/>					
18. Collaborates with medical colleagues	<input type="radio"/>					
19. Is involved with professional development	<input type="radio"/>					
20. Accepts responsibility for own professional actions	<input type="radio"/>					
21. Manages health care resources efficiently	<input type="radio"/>					
22. Manages stress effectively	<input type="radio"/>					
23. Participates in a system of call to provide care for his/her patients when unavailable	<input type="radio"/>					
24. Recognizes his/her own surgical limitations	<input type="radio"/>					
25. Handles requests for consultation in a timely manner	<input type="radio"/>					
26. Advises referring physician if referral request is outside of scope of practice	<input type="radio"/>					
27. Assumes appropriate responsibility for patients	<input type="radio"/>					
28. Provides timely information to referring physicians about mutual patients	<input type="radio"/>					
29. Critically evaluates the medical literature to optimize clinical decision making	<input type="radio"/>					
30. Facilitates the learning of medical colleagues and co-workers	<input type="radio"/>					
31. Contributes to quality improvement programs and practice guidelines	<input type="radio"/>					
32. Participates effectively as a member of the health care team	<input type="radio"/>					
33. Exhibits professional and ethical behavior towards physician colleagues	<input type="radio"/>					
34. Shows compassion for patients and their families	<input type="radio"/>					

## Appendix D: PSQ Standardized (Synoptic) Pathology Reporting Survey

### Copy Evaluation of Standardized (Synoptic) Pathology Reports:

#### 1. Introduction

You are being invited to complete a short survey asking for your perceptions regarding the introduction of standardized (synoptic) pathology reports in Ontario and the impact of these reports on clinicians. You are being invited to participate because of your role in the generation of pathology reports as an important part of the treatment plan for cancer patients.

The results of the survey will be used to determine overall clinician and pathologists' perceptions of standardized pathology reporting when compared to narrative reports.

As part of the process, you will be asked to complete a short survey consisting of 11 items. The survey will take no more than 5 minutes of your time.

All responses to the survey will be kept confidential. At the end of the survey, you will be asked to provide your name for tracking purposes only. Providing your name will ensure that you do not receive future reminder notices regarding the survey. At no point will personal identifiers be connected to individual survey responses.

In appreciation of your participation, should you complete and return the survey, your name will be entered in a draw for one of four \$1000.00 cash prizes.

Thank you for agreeing to complete this short survey. Completion of this survey will be considered an indication that you freely consent to participate in this process.

Please submit the completed survey by May 28, 2010.

Should you have any questions regarding this, please feel free to contact me directly:  
john.srigley@cancercares.on.ca

Thank you,  
John Srigley, MD; FRCPC  
Provincial Head, Pathology and Laboratory Medicine Program  
Cancer Care Ontario

#### 2. Evaluation of Synoptic Pathology Reporting

Instructions : Please answer the questions below based on your experience with synoptic pathology reporting as it compares to your previous experience using a narrative process for pathology reporting.

##### 1. Reports are complete as compared to accepted content standards ( e.g. CAP checklist).

- Significantly less than narrative reports    
  Slightly less than narrative reports    
  Same as narrative reports    
  Slightly better than narrative reports    
  Significantly better than narrative reports    
  Not applicable

### Copy Evaluation of Standardized (Synoptic) Pathology Reports:

**2. The need for follow-up calls / consultation with surgeon for clarification of information and/or concerns re: missing information.**

- Significantly less than narrative reports   
  Slightly less than narrative reports   
  Same as narrative reports   
  Slightly more than narrative reports   
  Significantly more than narrative reports   
  Not applicable

**3. Describes clinical information relevant to specific cancer diagnostic group.**

- Significantly less than narrative reports   
  Slightly less than narrative reports   
  Same as narrative reports   
  Slightly better than narrative reports   
  Significantly better than narrative reports   
  Not applicable

**4. The amount of time to produce the final pathology report.**

- Significantly less than narrative reports   
  Slightly less than narrative reports   
  Same as narrative reports   
  Slightly more than narrative reports   
  Significantly more than narrative reports   
  Not applicable

**5. If you answered either "more" or "less" to the question above, please indicate your estimate of how much more/less time ( e.g. 25%; 50%, 10%, .....)**

**6. Ease of finding information required for clinical decision making**

- Significantly less than narrative reports   
  Slightly less than narrative reports   
  Same as narrative reports   
  Slightly better than narrative reports   
  Significantly better than narrative reports   
  Not applicable

**7. When asked to provide a secondary review of pathology reports : The ease of finding information required / requested.**

- Significantly less than narrative reports   
  Slightly less than narrative reports   
  Same as narrative reports   
  Slightly better than narrative reports   
  Significantly better than narrative reports   
  Not applicable

**8. Facilitates consistent approach to the interpretation of diagnostic and prognostic factors.**

- Significantly less than narrative reports   
  Slightly less than narrative reports   
  Same as narrative reports   
  Slightly better than narrative reports   
  Significantly better than narrative reports   
  Not applicable

**9. Your overall satisfaction with synoptic pathology reporting process**

- Significantly less than narrative reports   
  Slightly less than narrative reports   
  Same as narrative reports   
  Slightly better than narrative reports   
  Significantly better than narrative reports   
  Not applicable

### Copy Evaluation of Standardized (Synoptic) Pathology Reports:

#### 10. Your overall satisfaction level with the information provided by synoptic reports.

- Significantly less than narrative reports  
  Slightly less than narrative reports  
  Same as narrative reports  
  Slightly better than narrative reports  
  Significantly better than narrative reports  
  Not applicable

#### 11. Your opportunity to provide your feedback, observations re: synoptic reporting and impact on practice.

### 3. Demographics

#### 1. Please describe your current LIS system

#### 2. Prior to synoptic pathology reporting what was the primary method for pathology reporting:

- Narrative - hand written, or dictated  
 Electronic entry ( free text)  
 Other

Other (please specify)

#### 3. What is the average number of pathology reports (cancer resections only) completed per month

#### 4. Number of years of experience.

**Copy Evaluation of Standardized (Synoptic) Pathology Reports:****5. Of the options below, which best describes your primary practice setting**

- Teaching hospital
- Teaching hospital / affiliated with a Cancer Centre
- Community hospital
- Community hospital / affiliated with a Cancer Centre
- Other

Other (please specify)

**6. Optional: Please provide your name so that you will no longer receive reminder notices once the survey is returned. At no point will personal identifiers be connected to survey responses.**

Name

Hospital

**7. In appreciation of your participation, should you complete and return the survey, your name will be entered in a draw for one of four \$1000.00 cash prizes. If you would like your name included in the draw, please indicate here.**

- Yes Please
- No Thanks

## Appendix E: Communication

From: Lankshear, Sara [mailto:Sara.Lankshear@cancercare.on.ca]  
Sent: Thursday, March 28, 2013 10:49 AM  
To: Belinda Presley  
Subject: RE: Early Release of Publication

Belinda,

Thanks for your message and interest in the physician satisfaction survey developed for the Synoptic Pathology Reporting project. I have attached the surveys here...one for surgeons and one for the pathologists. I did conduct psychometric testing on them..but have not published the results. They were psychometrically sound; all items were retained.

You can use this email as evidence of permission to use / refer to the tool in your dissertation – with the associated reference of the source of course.

I would be interested in what your topic is....

Best of luck with your studies and dissertation research.

Sara Lankshear RN PhD  
Manager, Knowledge Transfer and Evaluation ; Cancer Information Program

From: Belinda Presley  
Sent: Wednesday, November 28, 2012 5:23 PM

Hello Chris:

I understand and I do not want them to do anything for me other than get the information on how the reliability and or validation was done for the Q-probe method?

It may take me a few months or more to combined the Q-probe surveys and make a few changes to have reviewed by the CAP committee. I have to run it all by my research committee, chair committee and methodology committee, before I can even have CAP look at it. So, I am still in the infant stages.. of developing my survey..

I am very excited. Do I contact you for those surveys that I need to purchase?

Thank you so much!  
Belinda

From: Christine Bashleben  
Sent: Wednesday, November 28, 2012 1:57 PM  
To: Belinda Presley  
Subject: RE: Q-probe survey

Hi Belinda,  
Molly Walsh no longer works for the College. We do have a statistically department, but they only have resources for CAP-related work.

Sorry!  
Chris

From: Belinda Presley  
Sent: Wednesday, November 28, 2012 12:56 PM  
To: Christine Bashleben  
Subject: RE: Q-probe survey

Good afternoon:

I am going to pester you and if you get tired of me just say so ☐

I noticed on the 2002 Q Probes that CAP has a CAP statistician.... Ms. Molly Walsh. Is she still with CAP and would it be possible for me to contact her regarding these Q-Probes for validity and reliability validations?

Thank you,  
Belinda

Good morning Belinda,  
The link to the QP11 2001 Q-PROBES study is below. The data was published in Archives; the paper can be downloaded from the link.  
[http://www.cap.org/apps/cap.portal?\\_nfpb=true&cntvwrPtlActionOverride=%2Fportlet%2FcontentViewer%2Fshow&\\_windowLabel=cntvwrPtl&cntvwrPtl%7BactionForm.contentReference%7D=q\\_probes%2F2001.html&\\_state=maximized&\\_pageLabel=cntvwr](http://www.cap.org/apps/cap.portal?_nfpb=true&cntvwrPtlActionOverride=%2Fportlet%2FcontentViewer%2Fshow&_windowLabel=cntvwrPtl&cntvwrPtl%7BactionForm.contentReference%7D=q_probes%2F2001.html&_state=maximized&_pageLabel=cntvwr)

I think you should request permission to combine the studies into a new study. This isn't a difficult process. You would just send the request (and specifics) to me and I would forward it on for approval.

I hope you have a wonderful Thanksgiving!  
Chris

From: Belinda Presley  
 Sent: Friday, November 16, 2012 8:30 AM  
 To: Christine Bashleben (s)  
 Cc:  
 Subject: RE: Q-probe survey

Miss Christine:

THANK YOU!

I have singled out three surveys to forward to my dissertation chair for review.

I did have one question: the QP11 for 2001, Customer Satisfaction in Anatomic Pathology, did it have a data analysis and critique process? If so, may I get a copy of it as well.

Do you know what the process would be if two surveys were combined to make one? Would that need permission and any change in format?

Once I find out from my chair if the Q-probe surveys are applicable and acceptable then I will contact you again for assistance.

Again, Thank you so much.  
 Belinda

From: Christine Bashleben (s)  
 Sent: Thursday, November 15, 2012 2:53 PM  
 To: Belinda Presley  
 Subject: RE: Q-probe survey

Dear Belinda Presley,

The Archives article your reference below was based on a 2007 Q-PROBES study, QP17. This study was a repeat of a study performed in 2002. The 2007 study included some additional questions on the physician survey. You can easily access the 2002 study (instructions, result forms, and critique) from the CAP website, to get an idea if it will help you with your dissertation. The data from the 2002 study was not published in Archives. The link is below.

2002 Q-PROBES study, QP17:

[http://www.cap.org/apps/cap.portal?\\_nfpb=true&cntvwrPtlActionOverride=%2Fportlet%2FcontentViewer%2Fshow&\\_windowLabel=cntvwrPtl&cntvwrPtl%7BactionForm.contentReference%7D=q\\_probes%2F2002.html&\\_state=maximized&\\_pageLabel=cntvwr](http://www.cap.org/apps/cap.portal?_nfpb=true&cntvwrPtlActionOverride=%2Fportlet%2FcontentViewer%2Fshow&_windowLabel=cntvwrPtl&cntvwrPtl%7BactionForm.contentReference%7D=q_probes%2F2002.html&_state=maximized&_pageLabel=cntvwr)

If after reviewing the 2002 Q-PROBES materials, you want the instructions, result forms and critique for the 2007 Q-PROBES study, the charge would be \$20. (The 2002 materials are provided free of charge because the study is older than 7 years.)

If you decide to use any of the materials or data, it should be referenced.

Please let me know if you need any further assistance.

Sincerely,  
Chris

From: Belinda Presley  
Sent: Thursday, November 15, 2012 2:25 PM  
To: Christine Bashleben (s)  
Cc: Belinda Presley  
Subject: Q-probe survey

Ms. Christine:

I spoke with a very nice young lady today [forgive me, I forgot her name], when I call in regards to asking about the Q-probe survey questioner. I am a second year Ph.D. student at Walden University, in Minnesota.

My research topic involves physician satisfaction and laboratory/pathology departments. The article of interest is located below.

May I see the survey question and design? I would like to determine if it is applicable to my research hypothesis and could be used in my dissertation.

How was the survey validated and tested for reliability to meet the Ph.D. criteria to be used as an instrument tool?

If there are any modification of the questions, would it alter the validity or reliability – who would give permission to do so?

I know the young lady said to be specific, but I am not sure what to ask beyond the initial questions above.

Thank you,  
Belinda Presley

Physician Satisfaction With Clinical Laboratory Services  
A College of American Pathologists Q-Probes Study of 138 Institutions

Bruce A. Jones, MD; Leonas G. Bekeris, MD; Raouf E. Nakhleh, MD; Molly K. Walsh, PhD; Paul N. Valenstein, MD

From: Christine Bashleben (s)  
 Sent: Thursday, January 03, 2013 9:43 AM  
 To: Belinda Presley  
 Cc: Christine Bashleben (s)  
 Subject: FW: Q-probe survey request

Happy New Year Belinda!

The CAP biostatistician reviewed this study and provided the following statement:  
 I am not aware of any reliability studies that were done. For validity, the tool was pilot tested with the committee members to ensure the clarity, order, and content.

I hope this helps.

Have a great day,  
 Chris

From: Christine Bashleben (s)  
 Sent: Thursday, May 09, 2013 7:27 AM  
 To: Belinda Presley  
 Cc: Christine Bashleben (s)  
 Subject: RE: QP 11

Hi Belinda,  
 I have attached the Archives paper for the QP11 study. This study has not been repeated. The survey respondents rated anatomic laboratory services on a scale from 1 (poor) to 5 (excellent).  
 An overall satisfaction score was calculated for the primary performance indicator. Also calculated were the percentage of excellent/good ratings and the percentage of below average/poor ratings.

Overall satisfaction score =	$(\# \text{ excellent ratings} \times 5) + (\# \text{ good ratings} \times 4) + (\# \text{ average ratings} \times 3) + (\# \text{ below average ratings} \times 2) + (\# \text{ poor ratings} \times 1)$
	Total number of ratings (1-5) for overall satisfaction level
Percentage of excellent/good ratings =	$\frac{\# \text{ excellent/good ratings for specific lab service category}}{\text{Total number of ratings (1-5) for specific lab service category}}$
	Total number of ratings (1-5) for specific lab service category

Percentage of below average/poor ratings =	# below average/poor ratings for specific lab service category
	Total number of ratings (1-5) for specific lab service category

Hope this helps!  
Chris

From: Belinda Presley  
Sent: Wednesday, May 08, 2013 3:19 PM  
To: Christine Bashleben (s)  
Subject: QP 11

Miss Christine,

Hello – I have returned from my second Ph.D. residency – OH my...

I have some more questions

I cannot for the life of me find the data analysis and critique on the 2001 QP 11 Anatomic Pathology Customer Satisfaction survey. Would you point me in the right direction please – I must be blind as a bat.

Also, during this residency the head of the Ph.D. Health Science program asked me a couple of questions I did not know.

1. How was this survey scored?
  2. How was this survey scaled?
- And has this been used before? Is so when and where.

I know there were more questions, but I left them at home. So, sorry.

Thank you so much for all your help.  
Belinda

Original E-mail  
>From :  
Belinda Presley

Date :  
03/26/2013 07:44 PM

To :  
ArchivesOfPathology Belinda Presley

Subject :

Re: FW: Archives of Pathology & Laboratory Medicine Online feedback

Dr. Cagle,

Thank you for letting me use this for my Ph.D. research.

I have the survey from the "Determining Customer Satisfaction in Anatomic Pathology" by R.J. Zarbo. However, when I went to the link below for the article by Lankshear S, Srigley J, McGowan T, Yurcan M and Sawka C. Standardized Synoptic Cancer Pathology Reports: So What and Who Cares? A Population-Based Satisfaction Survey of 970 Pathologists, Surgeons, and Oncologists, I could not find the survey. Is there somewhere else I need to look.

Again thank you very much.

Belinda Presley

Original E-mail

>From :

ArchivesOfPathology

Date :

03/26/2013 08:25 AM

To :

Belinda Presley

Subject :

RE: FW: Archives of Pathology & Laboratory Medicine Online feedback

March 25, 2013

Belinda Presley  
Walden University  
Belinda

Dear Ms. Presley,

We grant you permission to use the study information contained in the following two articles in your PhD research and dissertation for Walden University:

1. Zarbo RJ, Determining Customer Satisfaction in Anatomic Pathology (Arch Pathol Lab Med. 2006;130(5):645-649).

Full credit to the Archives of Pathology & Laboratory Medicine must be given in the reprinted material. Add the following permission note: "Reprinted from [Author(s), Article title. Arch Pathol Lab Med. Year;vol(issue no.): inclusive pages] with permission from Archives of Pathology & Laboratory Medicine. Copyright 2006 College of American Pathologists."

2. Lankshear S, Srigley J, McGowan T, Yurcan M and Sawka C. Standardized Synoptic Cancer Pathology Reports: So What and Who Cares? A Population-Based Satisfaction Survey of 970 Pathologists, Surgeons, and Oncologists (Arch Pathol Lab Med. 2013; doi: <http://dx.doi.org/10.5858/arpa.2012-0656-OA>[Epub ahead of print].

Full credit to the Archives of Pathology & Laboratory Medicine must be given in the reprinted material. Add the following permission note: "Reprinted from [Author(s), Article title. Arch Pathol Lab Med. Year;vol(issue no.): inclusive pages] with permission from Archives of Pathology & Laboratory Medicine. Copyright 2013 College of American Pathologists."

This permission is exclusive to this request regarding your PhD research. Additional usage of any printed or electronic material for which the Archives of Pathology & Laboratory Medicine owns the copyright would require permission from the editorial office.

Sincerely,

Philip T. Cagle, MD  
Editor in Chief  
Archives of Pathology & Laboratory Medicine

From: Belinda Presley  
Sent: Sunday, March 24, 2013 8:40 AM  
To: ArchivesOfPathology; Belinda Presley  
Subject: Re: FW: Archives of Pathology & Laboratory Medicine Online feedback

Miss Katie:

What a wonderful surprise I found last night. I found a recently published article;

Lankshear, S. PhD.; J. Srigley. Md.; T. McGowean, MD.; M. Yurcan; and C. Sawka.M.D. (2012). Standardized Synoptic Cancer Pathology Reports: So What and Who Cares? A Population-Based Satisfaction Survey of 970 Pathologists, Surgeons, and Oncologists. Early online release. Arch Pathol Lab Med. doi: 10.5858/arpa.2012-0656-OA)

Would it be possible to get permission for this survey as well. I am so excited to find this validated/reliable tool very close to what I am interested in doing.

Thank you.

Belinda

Original E-mail

>From :

ArchivesOfPathology

Date :

03/18/2013 09:02 AM

To :

Belinda

Subject :

RE: FW: Archives of Pathology & Laboratory Medicine Online feedback

Hello Belinda,  
Thank you for your email. I will process your request and get back to you this week.  
With best regards,  
Katie

Katie Giesen, Editorial Assistant  
Archives of Pathology & Laboratory Medicine  
College of American Pathologists

From: Belinda Presley [mailto:  
Sent: Monday, March 18, 2013 7:06 AM  
To: ArchivesOfPathology;  
Subject: Re: FW: Archives of Pathology & Laboratory Medicine Online feedback

Dear Katie:

Sorry for the delay in response.

Yes, I would like to use the survey model in the article cited and make some changes to the questions and will cite it as a modified survey of such.

I would like to request any information of validation or reliability regarding this survey.

Thank you,

Belinda

Original E-mail

>From :

ArchivesOfPathology [

Date :

02/25/2013 09:26 AM

To :

"

Subject :

FW: Archives of Pathology & Laboratory Medicine Online feedback

User feedback

Hello Ms. Presley,

Your email was just forwarded on to me. I'm not sure I understand exactly what you are asking.

First of all, we house all published articles (from 1999 to present) on our open-source website. Here is a link to the table of contents for the May 2006 issue: <http://www.archivesofpathology.org/toc/arpa/130/5>. You should be able to access Dr. Zarbo's article easily from there.

If you are only asking to use information from his article, then you certainly may. And like Dr. Zarbo said, you will just need to cite the article appropriately (Zarbo RJ. Determining Customer Satisfaction in Anatomic Pathology. Arch Pathol Lab Med. 2006;130 (6):645-649.).

If you would like to reprint the figure or include an entire section or something, then you will need formal reprint permission statement from us. If this is the case, please reply

and let me know exactly what you are asking to reprint and I can grant the permission.

Please feel free to contact me if you have any questions or if I may be of any assistance.

With best regards,  
Katie

Katie Giesen, Editorial Assistant  
Archives of Pathology & Laboratory Medicine  
College of American Pathologists

From: Belinda Presley [mailto:  
Sent: Thursday, February 21, 2013 2:25 PM  
To:  
Subject: Archives of Pathology & Laboratory Medicine Online feedback

System information:

User: not logged in

Institution(s): Archives of Pathology & Laboratory Medicine,

Date/time: Thu Feb 21 12:25:05 PST 2013

Previous page:

Browser/OS: Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_8\_2) AppleWebKit/537.17  
(KHTML, like Gecko) Chrome/24.0.1312.57 Safari/537.17

IP Address: 075.088.044.136

User entered information:

Name: Belinda Presley

Institution/affiliation:

Department:

City/town:

Country:

ZIP/postal code:

Customer number:

E-mail:

Question regarding:

Journal:  
Question:

Hello: I am a second year Ph.D. student and just had a conversation with Dr. Zarbo at the Henry Ford pathology department. In the Arch Pathol Lab Med Vol 130, May 2006 publication is a survey in the "Customer Satisfaction in Anatomic Pathology" that I am interested in utilizing in my Ph.D. research. Is there a formal process to go through to gain permission to use this survey? Dr. Zarbo, suggested I contact Pathology & Laboratory Medicine, and all he asked was that I reference any of his works I used in my Ph.D. studies appropriately as they apply. Thank you, Belinda Presley

Send copy: no

Belinda Presley <

Jun 12

to Karen.Mazurek, Erin, Jocelyn, me, belinda.presley

Dr. Mazurek and Ms. Anderson

I am requesting permission to use your published survey for my Ph.D. research. My proposal is to use your GP2 Medical Colleague survey for my Ph.D. research which is to investigate physician satisfaction influencing surgical pathology department services in rural Missouri hospitals less than 100 beds.

Again thank you so much for your assistance and guidance.

Belinda Presley

-----Original Message-----

From: Jocelyn Lockyer [

Sent: Thursday, June 12, 2014 12:07 PM

To: Belinda Presley

Cc:

Belinda

Permission to use the College of Physicians and Surgeons of Canada PAR survey has to be obtained from Dr Karen Mazurek and Erin Anderson as the questionnaires are under their copyright.

I would recommend that you send a note directly to Dr Mazurek and Ms Anderson with an outline of your proposal so that they can review it. Copies of the instrument(s) you want to use should be posted at [www.par-program.org](http://www.par-program.org). [Just to make sure that Karen knows which documents you are using.] I hope this is helpful and will move your work along.

Jocelyn Lockyer

> On Jun 12, 2014, at 10:07 AM, "Belinda Presley" < wrote:  
 >  
 > Dr. Lockyer,  
 >  
 > I wanted to update you on my Ph.D. process. And for the life of me I cannot find the original email of our conversation that includes you providing me the above attachments. With your permission I would like to use your GP2 Medical Colleague survey in my Ph.D. research study. Since this is going to be a different Likert scale response – my understanding is that I would have to do a re-coding method when I put data into my SPSS format.  
 > This is all new to me so please excuse my ignorance.  
 >  
 > Again, thank you for all your assistance, Belinda Presley  
 >  
 > From: B Presley [mailto:  
 > Sent: Wednesday, June 11, 2014 2:54 PM  
 > To: Belinda Presley  
 > Subject: Lockyer  
 >  
 > PAR\_Lab\_Report\_June\_11\_08.Technical\_Report.Final\_Copy (3)b  
 >

---

Attachments area

Preview attachment Lockyer GP2\_Medical\_Colleague survey .pdf



Lockyer GP2\_Medical\_Colleague survey .pdf



Karen Mazurek <

Jun 13

to Belinda, Erin, Jocelyn, me, belinda.presley

Hello Ms. Presley

I give you permission to use the PAR survey tools as described in your email below with the following with the following standard caveats and conditions:

- 1) the tools were developed to provide physicians feedback about their practice performance, and are considered to be valid and reliable instruments for quality improvement purposes. We do not endorse their use for summative purposes.
- 2) the process for applying the PAR tools is as important as the tools themselves. We caution their use with smaller numbers of respondents than required by the PAR Program (e.g. 25 patients, 8 co-workers, 8 colleagues).
- 3) any publication or presentation about your use of the PAR tools must give attribution to the PAR Program and the College of Physicians and Surgeons of Alberta as the source.
- 4) Any expansion or extension of your local use of the PAR tools must not occur without further discussion with this College.
- 5) Modifications are permissible but may alter the performance characteristics, and does not change a user's responsibilities for the above.

Karen Mazurek

\_\*\*\*\*\*\*\_

Dr. Karen Mazurek  
Deputy Registrar  
College of Physicians & Surgeons of Alberta  
#



Belinda Presley <

Jun 13

to Karen, Erin, Jocelyn, me, belinda.presley

Dr. Mazurek,

Thank you very much. I will pass this onto my chair to ensure I am adhering to the "standard caveats and conditions" and will continue to keep you posted if I may on my progress.

Again, thank you,  
Belinda Presley

-----Original Message-----

From: Karen Mazurek [

---



Belinda Presley <

Jun 13

to jeff.snodgrass, me, belinda.presley

FYI

I found another survey that may be better suited for my research. So if Dr. Lankshear does get her psychometric tools validated then I would have maybe three surveys to select from or to combind.

Belinda

-----Original Message-----

From: Karen Mazurek [

Sent: Friday, June 13, 2014 3:51 PM

To: Belinda Presley; Erin Anderson

Cc: Jocelyn Lockyer;

---



## Appendix F: Original Survey

Reprinted from Zarbo, Article Determining customer satisfaction in anatomic pathology. Arch Pathol Lab Med. 2006;(Electronic version)130:645-649 with permission from Archives of Pathology & Laboratory Medicine. Copyright 2013 College of American Pathologists.”

Reprinted from Lockyer, J.M., Violato, C., Fidler, H. & Alkkija, P., The Assessment of Pathologists/Laboratory Medicine Physicians Through a Multisource Feedback Tool. Arch Pathol Lab Med. 2009; 122:1301-1308 with permission from Archives of Pathology & Laboratory Medicine. Copyright 2013 College of American Pathologists.”

Reprinted from Lankshear, S.L., Srigley, J., McGowan. T., Yurcan, M., & Sawka, C., Article title. Arch Pathol Lab Med. 2013; [Electronic version]: with permission from Archives of Pathology & Laboratory Medicine. Copyright 2013 College of American Pathologists.”

## The Influence of On-Site Surgical Pathology Department Services in Rural Hospitals on Physician Satisfaction

### 1. CONSENT FORM

You are invited to take part in a voluntary research study titled "The influence of on-site surgical pathology department services in rural hospitals on physician satisfaction." The researcher is inviting physician/provider participation in this research study.

This study is being conducted by a researcher named Belinda Presley who is a doctoral student at Walden University. Citizens Memorial Hospital (CMH) physicians/providers may already know the researcher as the CMH Laboratory Director. This study is separate from that role.

#### Background Information:

The purpose of this study is to measure physician satisfaction in regard to on-site surgical pathology department services.

#### Procedures:

If you agree to be in this study, you will be asked to complete the survey which consists of 45 questions. The survey will take approximately 10-15 minutes to complete

Here are some sample questions:

\_\_\_\_ What is your gender?

\_\_\_\_ What best describes your specialization?

\_\_\_\_ What best describes the surgical pathology department services at your facility.

#### Voluntary Nature of the Study:

This study is voluntary. The researcher will respect your decision of whether or not you choose to be in the study. If you decide to join the study now, you can still change your mind later. You may stop at any time.

#### Risks and Benefits of Being in the Study:

Being in this study would not pose risk to your safety or wellbeing.

Being in the study will allow information to be gathered and evaluated on the for the determination of physician satisfaction regarding surgical pathology department services, to allow rural hospitals an insight to the needs of physicians that have access and those who do not have access to an onsite surgical pathology department service.

#### Payment:

There is no payment for participating in this research.

#### Privacy:

Any information you provide will be kept anonymous. The researcher will not have access to your name or email addresses. Data will be kept secure by password protected computer. Data will be kept for a period of

at least 5 years, as required by the university.

**Contacts and Questions:**

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone number 1417-850-0808 or email Belinda.presley@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-612-312-1210 Walden University's approval number for this study is IRB will enter approval number here and it expires on IRB will enter expiration date.

Please print or save this consent form for your records.

**Statement of Consent:**

I have read the above information and I feel I understand the study well enough to make a decision about my involvement by clicking the appropriate button below you are consenting to participate in this research study.

- You agree to the terms and consent to the research survey
- You do not agree to the terms and do not consent to the research study

## The Influence of On-Site Surgical Pathology Department Services in Rural Hospitals on Physician Satisfaction

### Influence of On-Site Surgical Pathology Department Services on Physician Satisfaction

**Begin Survey**

**Survey will take approximately 10-15 minutes**

**Thank you for participating in this research survey.**

\* 2. Please identify your hospital or organization. This information will generate an unique identification code that will allow researcher to track those hospitals with access and those hospitals without access to an on-site surgical pathology department services.

- Lincoln County Medical Center
- Washington County Memorial Hospital
- Barton County Memorial Hospital
- Bates County Memorial Hospital
- Belton Regional Medical Center
- Golden Valley Memorial Hospital
- Pershing Memorial Hospital
- Citizens Memorial Hospital
- Cox Health Medical Centers
- Herman Area District Hospital
- Hannible Regional Hospital

- Kindred Hospital – St. Louis (system)
- Lafayette Regional Health Center
- Lee's Summit Medical Center
- Nevada Regional Medical Center
- Northwest Medical Center
- Pike County Memorial Hospital
- Salem Memorial District Hospital
- Ellett Memorial Hospital
- Perry County Memorial Hospital
- Cameron Regional Medical Center
- Golden Valley Memorial Hospital
- Texas County Memorial Hospital
- Mercy Hospital Aurora and Cassville
- Saint Lukes Nothrland Hospital
- Fitzgibbon Hospital
- Baptist Health Medical Center
- Saint Mary's Regional Medical Center
- Ouachita County Medical Center
- Mena Regional Health System
- Medical Center of South Arkansas
- Magnolia Regional Medical Center
- Johnson Regional Medical Center
- Baptist Health Medical Center
- Helena Regional Medical Center
- Hariis Hospital
- Great River Medical Center
- Forrest City Medical Center
- Five Rivers Medical Center
- Drew Memorial Hospital
- Chambers Memorial Hospital
- Arkansas Methodist Medical Center
- Memorial Health System
- Anthony Medical Center
- Ashland Health Center

- Atchison Hospital
- Rawlins County Health Center
- Republic County Hospital
- Mitchell County HospitalHealth Systems
- Sumner County Dist. #1Hospital
- Neosho Memorial RMC
- Clay County Medical Center
- Citizens Medical Center
- Comanche CountyHospital
- Mercy Hospital Columbus
- Cloud County Health Center
- Morris County Hospital
- Lane County Hospital
- Ellinwood District Hospital
- Ellsworth County MedicalCenter
- Newman Regional Health
- Greenwood CountyHospital
- Fredonia Regional Hospital
- Anderson County Hospital
- Girard Medical Center
- Goodland Regional Medical Center
- Kiowa County Memorial Hospital
- Hanover Hospital
- Harper Hospital District#5
- Herington MunicipalHospital
- Hiawatha CommunityHospital
- Graham County Hospital
- Hillsboro Community Hospital
- Clara Barton Hospital
- Holton Community Hospital
- Horton Community Hospital
- Sheridan County HealthComplex
- Stevens County Hospital
- Allen County RegionalHospital

- Sabetha Community Hospital
- Cheyenne County Hospital
- Satanta District Hospital, Clinics & LTCU
- Scott County Hospital
- Sedan City Hospital
- Nemaha Valley Comm. Hospital
- Smith Co. Memorial Hospital
- Stafford County Hospital
- Hamilton County Hospital
- Greeley County HealthServices
- Trego Co.-Lemke Mem.Hospital
- Wamego Health Center
- Washington CountyHospital
- William Newton Hospital

3. What is your age?

- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 to 74
- 75 or older

4. What is your gender?

- Female
- Male

5. What is the highest level of education you have completed?

- Doctor of Osteopathic Medicine (DO)
- Medical Doctor (MD)
- Nurse Practitioner (NP)
- Physician Assistant (PA)

6. Do you or have you held another medical professional degree or certification? If so, please select one or more of the following.

- Licensed Practical Nurse (LPN)
- Registered Nurse (RN)
- Medical Technologist/Scientist or Medical Laboratory Technician (MT/MLS/MLT)
- Physician Assistant (PA)
- Pathologist Assistant (PA)
- Nurse Practitioner (NP)
- Certified Nurse Assistant (CNA)
- Phlebotomist
- Laboratory Assistant

Other (please specify)

7. What best describes your specialization.

- General Family DO
- General Family MD
- General Family NP
- General Family PA
- Surgeon
- Otolaryngologist
- Cardiologist
- Endocrinologist
- GYN/OB
- Pediatrician
- Radiologist
- Infection Control
- Wound and Hyperbaric
- Gastrointestinal
- Rheumatologist
- Neurologist
- Oncology
- Hospitalist
- Emergency
- Dermatology
- Plastic Surgeon
- Ophthalmic
- Orthopedic
- Urologist
- Pulmonologist

Other (please specify)

8. Which one best describes your country of birth.

- American Born
- Foreign Born

9. What best describes your employment.

- Hospital employee
- Private Practice
- Physician group
- Contracted

Other (please specify)

10. Number of years as a physician or healthcare provider.

- 1 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- 21 - 25 years
- >25 years

11. Select the pathology department that best describes your facility.

Full time pathologist with an on-site surgical pathology department services (defined as a tissue processor is on-site to process samples).

- Yes
- No

12. If No, select one of the following that best describes your pathology services in your facility

- 1 - 2 days a week pathologist coverage for frozen sections.
- 2 - 3 days a week pathologist coverage for frozen sections.
- 3 - 4 days a week pathologist coverage for frozen sections.
- 4 - 5 days a week pathologist coverage for frozen sections.
- Pathologist on demand when needed for frozen sections.

13. What best describes the surgical pathology department services at your facility.

- I have access to an on-site surgical pathology department services
- I do not have access to an on-site surgical pathology department services

**The Influence of On-Site Surgical Pathology Department Services in Rural Hospitals on Physician Satisfaction**

Henry Ford Hospital (HFH/HFMG) Survey



\* 14. Overall satisfaction level with surgical pathology department services.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 15. Diagnostic accuracy of interpretation.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 16. Communication of relevant information by pathologist.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 17. Timeliness of reporting: Stat biopsy < 24 hours.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 18. Timeliness of reporting: Routine biopsy 2 days.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 19. Timeliness of reporting: Fine Needle aspirates 6-48 hours

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 20. Timeliness of reporting: Frozen Sections < 20 minutes.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 21. Quality of tumor board presentations.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 22. Pathologist's accessibility for Frozen Sections.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 23. Pathologists' responsiveness to problems.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 24. Overall quality of pathologist professional interactions.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 25. Notification of significant abnormal pathology results.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 26. Clarity and format of paper and electronic pathology reports.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## The Influence of On-Site Surgical Pathology Department Services in Rural Hospitals on Physician Satisfaction

### PAR Medical Colleague Questionnaire (CPSMPQ)

\* 27. Pathologist works well with physician colleagues

1 = Strongly Disagrees	2	3	4	5 = Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 28. Pathologist communicates effectively with other healthcare professionals.

1 = Strongly Disagrees	2	3	4	5 = Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 29. Pathologist collaborates with medical colleagues.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 30. Pathologist is involved in professional development.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 31. Pathologist accepts responsibility for own professional actions.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 32. Pathologist handles request for consultation in a timely manner.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 33. Pathologist facilitates the learning of medical colleagues and co-workers.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 34. Pathologist participates effectively as a member of the health care team.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 35. Pathologist exhibits professional and ethical behavior towards physician colleagues.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### The Influence of On-Site Surgical Pathology Department Services in Rural Hospitals on Physician Satisfaction

Standardized (Synoptic) Pathology Reports (PSQ)

36. Where is the histology processing performed in relation to the main hospital laboratory?

- On site with pathologist on site
- Off site remote from pathologist sign out
- Off site with pathologist sign out
- Off site with pathologist sign out on site

37. Where is the pathologist sign-out location in relation to main hospital laboratory?

- No pathologist on site
- Pathologist time is scheduled on site as needed
- Pathologist (s) on site (at least one pathologist spending more than 50% of time on site)

\* 38. Reports are complete as compared to accepted content standards (e.g. CAP checklist, Joint Commission).

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 39. The need for follow-up calls/consultation with pathologist for clarification of information and/or concerns re: missing information.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 40. The amount of time to produce the final pathology report.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 41. Describes clinical information relative to specific cancer diagnostic group.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 42. Ease of finding information required for clinical decision making in the final report.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 43. Pathologist facilitates consistent approach to interpretation of diagnostic and prognostic factors.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 44. Your overall satisfaction with synoptic pathology reporting process.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

45. Prior to synoptic pathology reporting what was the primary method for pathology reporting?

- Narrative - hand written or dictated
- Electronic entry (free text)

Other (please specify)

**The Influence of On-Site Surgical Pathology Department Services in Rural Hospitals on Physician Satisfaction**

End of Survey

**Thank you for participating in this research survey.**

Appendix G: Pilot and Modified Survey

Top of Form

at least 5 years, as required by the university.

**Contacts and Questions:**

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone number 1417-850-0808 or email Belinda.presley@waldenu.edu. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-612-312-1210 Walden University's approval number for this study is IRB will enter approval number here and it expires on IRB will enter expiration date.

Please print or save this consent form for your records.

**Statement of Consent:**

I have read the above information and I feel I understand the study well enough to make a decision about my involvement by clicking the appropriate button below you are consenting to participate in this research study.

- You agree to the terms and consent to the research survey
- You do not agree to the terms and do not consent to the research study

## The Influence of On-Site Surgical Pathology Department Services in Hospitals on Physician Satisfaction

### Influence of On-Site Surgical Pathology Department Services on Physician Satisfaction

**Begin Survey**

**Survey will take approximately 10-15 minutes**

**Thank you for participating in this research survey.**

\* 2. Are you affiliated with a

- Rural Hospital with fewer than 100 beds
- Urban hospital 100-200 beds,
- Urban hospital 200-400 beds
- Urban hospital 401-600 beds
- Urban hospital > 601 beds

\* 3. What state is your hospital?

- Missouri
- Kansas
- Arkansas

## The Influence of On-Site Surgical Pathology Department Services in Hospitals on Physician Satisfaction

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\* 4. What is your age?

- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 to 74
- 75 or older

\* 5. What is your gender?

- Female
- Male

\* 6. What is the highest level of education you have completed?

- Doctor of Osteopathic Medicine (DO)
- Medical Doctor (MD)

\* 7. Do you or have you held another medical professional degree or certification? If so, please select one or more of the following.

- Licensed Practical Nurse (LPN)
- Registered Nurse (RN)
- Medical Technologist/Scientist or Medical Laboratory Technician (MT/MLS/MLT)
- Physician Assistant (PA)
- Pathologist Assistant (PA)
- Nurse Practitioner (NP)
- Certified Nurse Assistant (CNA)
- Phlebotomist
- Laboratory Assistant

Other (please specify)

\* 8. What best describes your specialization.

- General Family MD
- Diagnostic radiology
- Family practice
- General surgery
- Internal medicine
- Gastroenterology

Other (please specify)

\* 9. Which one best describes your country of birth.

- American Born
- Foreign Born

\* 10. What best describes your employment.

- Hospital employee
- Private Practice
- Physician group
- Contracted

Other (please specify)

\* 11. Number of years as a physician or healthcare provider.

- 1 - 5 years
- 6 - 10 years
- 11 - 15 years
- 16 - 20 years
- 21 - 25 years
- >25 years

\* 12. Select the pathology department that best describes your facility.

Full time pathologist with an on-site surgical pathology department services (defined as a tissue processor is on-site to process samples).

- Yes
- No

\* 13. If No, select one of the following that best describes your pathology services in your facility

- 1 - 2 days a week pathologist coverage for frozen sections.
- 2 - 3 days a week pathologist coverage for frozen sections.
- 3 - 4 days a week pathologist coverage for frozen sections.
- 4 - 5 days a week pathologist coverage for frozen sections.
- 5 - Pathologist on demand when needed for frozen sections.

\* 14. What best describes the surgical pathology department services at your facility.

- I have access to an on-site surgical pathology department services
- I do not have access to an on-site surgical pathology department services

**The Influence of On-Site Surgical Pathology Department Services in Hospitals on Physician Satisfaction**  
 Henry Ford Hospital (HFH/HFMG) Survey

\* 15. Overall satisfaction level with surgical pathology department services.

1 = Poor	2 = Below Average	3 = Acceptable Average	4 = Good	5 = Excellent	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 16. Diagnostic accuracy of interpretation.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 17. Communication of relevant information by pathologist.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 18. Timeliness of reporting: Stat biopsy < 24 hours.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 19. Timeliness of reporting: Routine biopsy 2 days.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 20. Timeliness of reporting: Fine Needle aspirates 6-48 hours

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 21. Timeliness of reporting: Frozen Sections < 20 minutes.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 22. Quality of tumor board presentations.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 23. Pathologist's accessibility for Frozen Sections.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 24. Pathologists' responsiveness to problems.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 25. Overall quality of pathologist professional interactions.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 26. Notification of significant abnormal pathology results.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 27. Clarity and format of paper and electronic pathology reports.

5 = Excellent	4 = Good	3 = Acceptable Average	2 = Below Average	1 = Poor	0 = Not Applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### The Influence of On-Site Surgical Pathology Department Services in Hospitals on Physician Satisfaction

#### PAR Medical Colleague Questionnaire (CPSMPQ)

\* 28. Pathologist works well with physician colleagues

1 = Strongly Disagrees	2	3	4	5 = Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 29. Pathologist communicates effectively with other healthcare professionals.

1 = Strongly Disagrees	2	3	4	5 = Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 30. Pathologist collaborates with medical colleagues.

1 = Strongly Disagrees	2	3	4	5 = Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 31. Pathologist is involved in professional development.

1 = Strongly Disagrees	2	3	4	5 = Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 32. Pathologist accepts responsibility for own professional actions.

1 = Strongly Disagrees	2	3	4	5 = Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 33. Pathologist handles request for consultation in a timely manner.

1 = Strongly Disagrees	2	3	4	5 = Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 34. Pathologist facilitates the learning of medical colleagues and co-workers.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 35. Pathologist participates effectively as a member of the health care team.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0 = Unable to Assess
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 36. Pathologist exhibits professional and ethical behavior towards physician colleagues.

1 = Strongly Disagrees	2	3	4	5= Strongly Agrees	0
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## The Influence of On-Site Surgical Pathology Department Services in Hospitals on Physician Satisfaction

### Standardized (Synoptic) Pathology Reports (PSQ)

\* 37. Where is the histology processing performed in relation to the main hospital laboratory?

- On site with pathologist on site
- Off site remote from pathologist sign out
- Off site with pathologist sign out
- Off site with pathologist sign out on site

\* 38. Where is the pathologist sign-out location in relation to main hospital laboratory?

- No pathologist on site
- Pathologist time is scheduled on site as needed
- Pathologist (s) on site (at least one pathologist spending more than 50% of time on site)

\* 39. Reports are complete as compared to accepted content standards (e.g. CAP checklist, Joint Commission).

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 40. The need for follow-up calls/consultation with pathologist for clarification of information and/or concerns re: missing information.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 41. The amount of time to produce the final pathology report.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 42. Describes clinical information relative to specific cancer diagnostic group.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 43. Ease of finding information required for clinical decision making in the final report.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 44. Pathologist facilitates consistent approach to interpretation of diagnostic and prognostic factors.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 45. Your overall satisfaction with synoptic pathology reporting process.

1 = Significantly less than narrative reports	2 = Slightly less than narrative reports	3 = Same as narrative reports	4 = Slightly better than narrative reports	5 = Significantly better than narrative reports	Not applicable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 46. Prior to synoptic pathology reporting what was the primary method for pathology reporting?

- Narrative - hand written or dictated
- Electronic entry (free text)

Other (please specify)

**The Influence of On-Site Surgical Pathology Department Services in Hospitals on Physician Satisfaction**

End of Survey

**Thank you for participating in this research survey.**