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Meaningfulness and job satisfaction for health care technology workers

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TABLE OF CONTENTS

LIST OF TABLES vi

ACKNOWLEDGMENTS vii

VITA viii

ABSTRACT ix

Chapter 1. Overview of the Topic 1

- Introduction 1
- Statement of Purpose 4
- Research Questions 4
- Statement of the Problem 5
- Importance of the Study 6
- Theoretical and Conceptual Frameworks 8
- Definition of Key Conceptual Terms 12
- Delimitations of the Research 14
- Organization of the Study 15

Chapter 2. Review of Literature 16

- Job Meaning 23
- Mission Valence and Task Significance 26
- The United States Health Care Industry 28
- The Evolving Importance of Information Technology in Health Care 37
- Applying the Theoretical Frameworks to Job Roles Included in this Study 40
- Perceptions of Job Satisfaction in the Studied Populations 45
- Perceptions of the Meaning of Work in the Studied Populations 50
- Perceptions of Mission Valence and Task Significance in the Studied Populations 52
- Summation 56

Chapter 3. Research Methods 57

- Research questions 57
- Methodology Overview 57
- Immersion Phase 58
- Acquisition Phase 60
- Data Collection 66
- Human Subjects Considerations and Institutional Review Board Review 68
- Realization Phase 69

Study Validity 71

Chapter 4. Results 72

Study Participants and Represented Organizations 72
Summary of Thematic Analysis 77
Perceptions of the Organization's Culture 78
Perceptions of the Organization's Mission 82
Perceptions of the Interactions with Clinicians 85
Perceptions of Contribution 92
Chapter Summary 97

Chapter 5. The Study and Its Implications 98

Theoretical Frameworks 100
Data Collection and Analysis 101
Key Findings and Discussion 102
Conclusions and Discussion 108
Study Validity 112
Limitations of the Study 112
Closing Thoughts 113

REFERENCES 115

APPENDIX A Interview Prompts 140

APPENDIX B IRB Approval Notice 141

LIST OF TABLES

Table 1. Provisions of the Patient Protection and Affordable Care Act Which Increase Access to Health Insurance and Health Care 35

Table 2. Research Participant Job Titles 74

Table 3. Research Participant Tenure and Experience 74

Table 4. Research Participant Work Experience 75

Table 5. Research Participant Managerial Responsibility 76

Table 6. Demographics of Care Provider Organizations Represented 77

Table 7. Categories and Associated Emergent Themes 78

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VITA

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ABSTRACT

Health care technology workers play an increasingly important role in meeting regulatory requirements, improving patient care and containing health care costs. However, their perceptions of work and job satisfaction are lightly studied in comparison to other health care workers such as physicians or nurses. This exploratory study used heuristic inquiry to investigate the perceptions of health care technology workers with regard to their feelings of task significance, mission valence, work meaning, and job satisfaction.

Nine research participants representing three not-for-profit, secular hospital systems which were selected to have variation in geographic scope and organization size were interviewed. All participants were full-time, senior professional, non-executive, employees with a minimum of five years of experience in health care technology and three years with their current employer.

Thematic analysis revealed themes within four categories: organization culture, organization mission, interactions with clinicians and perceived contribution. These organizations have strong cultures in which staff members police the cultural norms. The inculcation to the culture includes helping health care technology workers connect to the organization's mission of patient care, and these employees perceive the mission to have high valence. While these employees feel that the mission of patient care is important and valuable, they have a conflicted relationship with physicians who they perceive as resistant to the adoption of new technology. Finally, health care technology workers recognized that their work tasks may not directly impact patient care; however, they felt their contribution was meaningful, in particular when they were able to contribute their unique talents.

Study conclusions and recommendations included how job rotations allowing health care technology workers to work at a care provider site provides an opportunity for health care companies to increase workers' feelings of task significance and task identity, and therefore, job satisfaction. Contributing one's unique gift is perceived as meaningful, and workers seek opportunities to do so. Recognizing the importance of these workers and facilitating improved interactions between health care technology workers and physicians particularly with regard to adoption of new technology is seen as critical for ensuring effective and efficient health care delivery.

Chapter 1. Overview of the Topic

Introduction

Providing accessible, affordable health care is one of the fundamental challenges of modern governments. Governments seek to provide access to health through different levels of funding and regulation. These government interactions range from single payer systems such as the United Kingdom and Canada to fully out-of-pocket models in countries such as Cambodia and Mozambique. The challenges of containing health care costs while ensuring ready access to high quality patient care is an issue that challenges governments around the globe (Armstrong, 2011; Loewy & Loewy, 2002; Thai, Wimberley, & McManus, 2002).

Health care is a significant cost in the industrialized world. Anderson, Hussey, Frogner, and Waters (2005) assert that in the United States, in particular, health care costs have risen rapidly in comparison to other industrialized nations. This increase exists in both actual dollars and as a percentage of the Gross Domestic Product. In 2000, health care spending was 13% of the United States Gross Domestic Product. By 2011, health care costs had grown to more than 17% of the Gross Domestic National Product (Centers for Medicare & Medicaid Services, n.d.).

Over the same period, the practice of medicine and the processing of medical back office functions have increased their reliance on technology and technology workers. Health care technology workers are a specific subset of knowledge workers whose domain of expertise spans the information technology of patient care, hospital administration, and health insurance. Health care technology workers support the technology of patient care, but may not have any direct patient interaction.

In the United States, there is an increasing focus on health care technology due to both regulatory changes and efforts to contain health care costs. Examples of regulatory changes, which are driving technology changes in health care, include the incentives to implement electronic health records in the Health Information Technology for Economic and Clinical Health Act, the technical specifications of Medicare processing defined by the Center for Medicare and Medicaid Services, and the health care exchange marketplace defined in the Patient Protection and Affordable Care Act (Bhaskar & Vo, 2012b)

In addition to responding to regulatory changes, the technology of health care continues to rapidly evolve, and technology workers play an increasing role in patient outcomes. Health care technology workers deliver care devices such as patient monitoring, home health equipment, and minimally invasive treatment tools (Barr, McElnay, & Hughes, 2012; Feldman, Murtaugh, Pezzin, McDonald, & Peng, 2005: Kropf & Grigsby, 1999). Technology is also shaping patient care in less direct ways through the use of electronic medical records and the mining of big data to conduct research (Mathar, 2011; Neville, Greene, & Lewis, 2006). Finally, technology is now a key driver of medical back office functions such as procedure coding, insurance claims, patient billing, and regulatory reporting and compliance (Trotter & Uhlman, 2011).

The general public believes that the increased use of health care technology will lower heath care costs while simultaneously improving patient outcomes. In research into Americans' attitudes concerning health information technology, which was conducted by Gaylin, Moiduddin, Mohamoud, Lundeen, and Kelly (2011), respondents strongly favored the implementation of

electronic medical records and the sharing of patient data across care organizations believing these technology advances would benefit patients.

Regulatory reforms in the United States place an increasing emphasis on the importance of technology workers. Danzon and Pauly (2001) noted that both Medicare and Medicaid require detailed reporting to the Centers for Medicare & Medicaid Services using specific technical requirements for the exchange of data among providers, insurers and regulators. These requirements are updated frequently requiring consistent technology development and maintenance. Bhaskar and Vo (2012b) noted that with the implementation Patient Protection and Affordable Care Act health care organizations need to respond quickly to technology requirements spawned in the regulation. For many care provider organizations, health care reforms will require a complete rethinking of their technology strategy.

Based on this research spanning sixteen years of literature, it is established that health care technology workers play an increasing role in meeting regulatory requirements, improving patient care and containing health care costs. However, their perceptions of their work, its meaning, and their job satisfaction are lightly studied in comparison to other health care workers such as clinicians or physicians. In the existing peer reviewed literature, there are several thousand journal articles regarding the job satisfaction of physicians and a similarly large number of articles about the job satisfaction of nurses, home health workers, pharmacists, and other allied care providers. In contrast, studies into the perceptions of health care technology workers regarding the interplay of job meaning, task significance, mission valence and job satisfaction are relatively meager. This study addresses that gap in the existing literature.

Statement of Purpose

The purpose of this exploratory study was to identify the perceptions and experiences of health care technology workers with regard to their feelings of task significance, mission valence, the meaning they find in their work and their feelings of job satisfaction. The study followed a heuristic inquiry process and used non-structured phenomenological interview techniques to understand the subject's perceptions and experiences. While task significance is well understood as predictor of job satisfaction, the influence of mission valence and the meaning that one finds in his work is less researched. This study sought to explore and describe the interplay of these four concepts.

Research Questions

This research study sought answers to two questions.

RQ1: What are the perceptions of health care technology workers with regard to their feelings toward their organization's mission valence and the significance of the work tasks that they perform?

RQ2: What are the perceptions of health care technology workers with regard to the meaning of their work and their overall job satisfaction?

To explore these research questions, a qualitative approach was used and followed the heuristic inquiry method established by Clark Moustakas and Bruce Douglass (1985). This research method allows a deep exploration of the research subject's thoughts and experiences; however, it also places the researcher intimately in the subject studied. Patton (2002) notes that in qualitative study the researcher's skills, experiences, competence, and rigor affect the outcomes of the research.

The process of heuristic inquiry allows the researcher a passionate, personal involvement in a problem by exploring the research questions through the internal pathways of the self (Douglass & Moustakas, 1985). In this study, the researcher is not a health care technology worker, but has over a decade of experience working closely with the health care technology workers. The researcher also has experience as a clinician. In the epoché stage of the heuristic inquiry process, the researcher will reflect and explore this experience and search for any potential biases that may incorrectly shape the research outcomes.

Statement of the Problem

By 2011, health care spending in the United States had grown to reach $2.7 trillion dollars (Centers for Medicare & Medicaid Services, n.d.). Recent legislation places an increasing demand on health care technology though specification of systems implementations such as electronic medical records, electronic reporting such as Healthcare Effectiveness Data and Information Set (HEDIS) and Centers for Medicare Mandatory Insurer Reporting (United States Department of Health and Human Services, 2012). As requirements for health care technology evolve, health care technology workers shape both the quality and cost of health care in the United States.

While the importance of health care technology workers has increased, their perceptions of their job satisfaction and meaning have not been sufficiently explored. An employee's perception that his work is meaningful is at least as important to his level of job satisfaction as are his compensation and perceived job security (O'Brien, 1992). Pratt and Ashforth (2003) note that workers can cultivate feelings of meaningfulness both by membership in an organization and by one's specific job function. Mission valence measures the employee's perceptions of the

attractiveness of the organization's purpose (Wright & Pandey, 2011). Task significance reflects the employees' perception of the importance of the specific tasks he performs (Hackman & Oldham, 1976). This study looks at how health care technology workers regard both the significance of the health care provider's mission and the significance of their own tasks.

Mission valence and task significance are cited as positively correlated to the meaning employees find in their work in both for-profit and non-for-profit organizations (Hackman & Oldham, 1976; Pandey & Stazyk, 2008; Pratt & Ashforth, 2003). Task significance is accepted as a variable in quantitative measures of job satisfaction (Hackman & Oldham, 1976). However, the influence of mission valence on staff members who do not perceive their roles to have task significance is not clearly understood. Many of the writings on organizational mission valence and the meaning of work focus on employees with occupational tasks that are directly related to the organization's mission, for example, physicians, nurses, and other clinicians working in hospitals (Dik & Duffy, 2009; Duffy, Manuel, Borges, & Bott, 2011; Forehand, 2000; Whorley, 1992). Research is needed to determine how health care technology employees view their individual task significance and the care provider organization's mission valence. It is unclear if these employees find meaning in their work due to their perception of the organization's mission valence when their feelings of task significance are low.

Importance of the Study

Employees who perceive their work to be meaningful have been shown to exhibit higher levels of job satisfaction which in turn leads to higher organizational commitment, improved job performance, and increased prosocial behaviors (Wright & Pandey, 2011). Support staff employees, the job category, which includes health care technology workers, comprise over half

the employees in healthcare organizations (U.S. Department of Labor, 2012). Understanding how these employees' perceptions of task significance and mission valence influence both their feeling of job meaning and satisfaction may allow hospitals to deliver higher performance in this large segment of employees. Creating opportunities to allow individuals to find more meaning in their work has potential benefits of increased productivity in staff, reduced employee absenteeism (Roberson, 1990) These improvements could lead to lower overhead costs for care provider organizations and to improved service and care to patients.

This research used phenomenological interviews to allow research subjects to fully articulate their perceptions of the interplay of task significance, mission valence, work meaning, and job satisfaction. The interview method of data collection was selected because the theories of job meaning and mission valence are emergent and not fully defined. Statistically valid quantitative tools exist to measure job satisfaction and task significance including the Job Diagnostic Survey (Hackman & Oldham, 1974), the Job Characteristics Inventory (Simes, Szilagyi, & Keller, 1976) and the Yale Job Inventory (Hackman & Lawler, 1971). However, there is not a similar validated quantitative tool to measure the employee's perceptions of mission valence.

Task significance and mission valence both address the perceptions that workers have of the importance of the work they perform. However, task significance looks at the work of the individual and mission valence looks at the collective work of the organization. Task significance has been extensively studied following Hackman and Oldham (1976) writings in the 1970s; however, mission valence has only been studied lightly. The term *mission valence* first appeared in the academic literature in 1999 (Rainey and Steinbauer, 1999) and has occurred

sporadically. Considering the relatively late differentiation of mission valence from task significance, it is unclear how much of the research on task significance comingles feelings about the attractiveness of individual tasks and collective actions.

The relationship of both task significance and mission valence to job satisfaction has been studied in hospital clinician staff members (Forehand, 2000; Whorley, 1992). However, little research has been published regarding how hospital support employees including health care technology workers perceive the meaningfulness of their work or the valence of their company's mission. As such, it is proposed to use phenomenological interviews to gather richer data to explore the research subject's perceptions of the interrelationships of task significance, mission valence, work meaning, and job satisfaction. This research contributes to theoretical knowledge of these four concepts. Understanding the attitudes of these staff members will provide future researchers with a richer framework to understand employee attitudes, behaviors and motivations.

Theoretical and Conceptual Frameworks

This study explored employee perceptions of task significance, mission valence, work meaning, and job satisfaction. To explore these four concepts two theoretical frameworks were used: job meaning from the emerging framework of positive organizational scholarship and job satisfaction theory. The concept of task significance exists within both of these frameworks, while job meaning is conceptually within positive organizational scholarship.

Job satisfaction is a well-established framework. Judge and Church (2000) note that job satisfaction is one of the most widely researched topics in organizational psychology. The long path of satisfaction theories begins in the 1940s with Maslow's (1943) Hierarchy of Needs. The

concept of task significance emerged as a component of job satisfaction in Hackman and Oldham's (1976) Job Characteristics Model which identifies five core job characteristics: skill variety, task significance, task identity, autonomy and feedback. The relationship of job satisfaction to employee behaviors and work outcomes has been frequently studied. Landy (1978) notes that job satisfaction has been linked to an employee's productivity, his work motivation, the frequency of absenteeism, the frequency and severity of workplace accidents, employee turnover intention, the emotional and physical health of workers, and the overall satisfaction which a worker has with his life.

Positive organizational scholarship is a more recent framework, which followed the emergence of positive psychology. Over the past decade, Dutton, Quinn and Cameron's research and writing work spearheaded the development of a positive organizational framework. Positive psychology theorizes that individuals pursue meaningfulness in their lives and positive organization theories posit that individuals seek to find meaning in their work. Finding a sense of meaning – whether in work or in life – provides individuals with both satisfaction and intrinsic motivation (Frankl, 1962; Seligman & Csikszentmihalyi, 2000). Both individuals and organizations benefit when employees perceive their work to be to have meaning. One of the most common outcomes linked to meaningful work is increased satisfaction with one's job (Pratt & Ashforth, 2003). Employees find their work meaningful exhibit higher levels of higher organizational commitment, improved job performance, and increased prosocial behaviors (Roberson, 1990; Wright & Pandey, 2011).

Job meaning and positive organizational scholarship as a theoretical framework. In comparison to the rich history of job satisfaction theory, positive organizational scholarship is a

young theoretical framework evolving in the last decade. Dutton, Quinn, and Cameron (2003) identify an antecedent of positive organizational scholarship as the emergence of positive psychology as a field of study.

In his President's Address to the American Psychological Association, Seligman (1999) put forth the concept of positive psychology. He noted that traditional psychology focuses on human pathology to identify what is flawed or deficient in individual human subjects. Based on this assumption of pathology, treatments to address diseases and weaknesses have been developed. He proposed that positive psychology should address a separate, complimentary field of research. Instead of focusing on problems and pathology, its focus is on human strengths, goodness, and excellence. Positive psychology investigates pleasurable experiences, healthy individual character traits, and functional, supportive relationships (Dutton et al., 2003; Seligman, 2002; Snyder & Lopez, 2002).

Similarly, positive organizational theories focus on what is positive and correct in organizations instead of what is wrong, weak, or broken. Dutton, Quinn, & Cameron (2003) state that positive organization scholarship examines organizational appreciation, virtue, collaboration and meaning. It seeks to identify the causes on positive organization characteristics such as resilience, wisdom, and humility. It also explores positive social relationships based in respect, compassion, forgiveness, and loyalty. By studying and increasing the causes of positive social relationships and organizational characteristics, positive organizational scholarship seeks to increase attributes such as positive deviance, organizational excellence, positive emotional spirals, and transcendence (Dutton, Quinn, & Cameron, 2003).

This study focused on the concept of job meaning. The researcher sought to explore how health care technology workers cultivate feelings of job meaning through their perceptions of task significance and mission valence.

Job satisfaction as a theoretical framework. Job satisfaction theories can be divided into three primary categories: affective job satisfaction models, dispositional job satisfaction models, and cognitive job satisfaction models. Affective job satisfaction refers to as the extent to which individuals hold pleasurable feelings, attitudes or perceptions about their job overall (Locke, 1976). Dispositional models posit that an individual's innate disposition predisposes the person's degree of satisfaction (Judge, Locke, & Durham, 1997). Cognitive job satisfaction refers to the employee's perception of specific attributes of their work such as the amount of compensation, level of authority, degree of prestige or the attractiveness of the working conditions (Thompson & Phua, 2012).

This research study draws on one component of Hackman and Oldham's Job Characteristics Model to explore job satisfaction. The Job Characteristics Model is a cognitive model that utilizes the worker's perception of five core components: skill variety, task significance, task identity, autonomy, and feedback. The perception of the individual job characteristics varies from employee to employee as does the importance an employee assigns to each of the specific components of his work (Hackman & Oldham, 1976). This study looks specifically at the worker's feelings of task significance.

This study seeks to understand the interplay of task significance, mission valence, job meaning, and job satisfaction in the perceptions and experiences of health care technology workers. While the importance of task significance exists in both positive organizational

scholarship and in job satisfaction theories, the concept of mission valence is part of the body of positive organizational theory.

Definition of Key Conceptual Terms

Care provider organizations. A care provider organization is defined as an organization with a primary mission to deliver direct patient care (Benson, Weech-Maldonado, & Gamm, 2003) Secondary missions such as teaching or research may also exist in these organizations. Examples of care provider organizations include hospitals, pharmacies, clinics, and doctors' offices. For this study, care provider organizations are defined as hospitals, or hospital systems.

Clinicians. Clinicians are defined as all health care professionals whose assigned tasks include direct patient care responsibilities (Australian Institute of Health and Welfare, 2015). Example occupations of clinicians include: physicians, registered nurses, occupational therapists, and pharmacists. For this study, the term clinician encompasses all licensed care providers including physicians and nurses.

Care provider organization support staff. Support staff are defined as hospital employees whose assigned tasks do not include medical care of patients (Zullo & Ness, 2009). While support staff members do not have patient care responsibilities, these employees may have patient contact. For this study, support staff are defined as all care provider organization employees who are not licensed care providers. Examples of support staff employees include housekeepers, billing clerks, receptionists, and security workers.

Health care technology workers. The term technology worker can refer to a wide range of occupations. In this study, health care technology workers are defined as skilled workers who performs any function related to information technology including the "study, design,

development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware (Information Technology Association of America, 1997). Health care technology workers are further defined as the care provider organization staff members who report to the company's most senior technology officer directly or through varying levels of intermediary managers. Health care technology workers are subset of support staff. Examples of common job titles for these employees include: programmer, analyst, application developer, tester, systems architect, and managerial job title such as manager or director.

Other technology workers. These staff members develop, implement and support technology in industries other than health care. Technology workers are generally defined as employees who perform information systems functions and include programmers, systems analysts, network and database administrators, and webmasters (Rainer, Turban, & Potter, 2007). In this study, other technology workers defined as the staff members who report to the company's most senior technology officer directly or through varying levels of intermediary managers. Common job titles for other technology workers are similar to the titles of technology workers in health care organizations and include: programmer, analyst, application developer, tester, systems architect, and managerial job title such as manager or director.

Work site. This the location in which an employee conducts his job functions and responsibilities (Walters, 2008). For this study, there are two types of work sites, care delivery work sites and administrative work sites. A care delivery work site is a work location where the care of patients is conducted including hospitals and clinics. Technology workers may have a care delivery work site as their primary work site. An administrative work site is defined as a job

location that is remote from a patient care venue. Administrative work sites for technology workers may include data centers, office facilities or telecommuting locations.

Mission valence. Mission valence describes an employee's perceptions of the salience or attractiveness of the organization's purpose or contribution (Wright & Pandey, 2011). In this study, mission valence is defined to mean the employee's self-reported perceptions of the value of his employing organization's mission. This is not the organization's mission statement, but rather what the employee perceives the mission to be.

Task significance. Task significance is the employee's perception of the impact that his or her work has on others (Hackman & Oldham, 1976). In this study, task significance is defined to mean the employee's self-reported perceptions of the direct impact and value of his specific work tasks.

Job meaning. Work meaning is defined as employees' perception that his or her work is valuable to himself or to others. It is the importance that the employee attributes to their work (Wrzesniewski, Dutton, & Debebe, 2003). In this study, job meaning is defined as the employee's self-reported perceptions of the value and importance of their work.

Job satisfaction. Job satisfaction is defined as "pleasurable or positive emotional state resulting from the appraisal of one's job or job experience" (Locke, 1976, p. 1300). In this study, job satisfaction is defined as employee's self-reported feeling of overall, affective response to work.

Delimitations of the Research

In this study, the researcher sought to explore and describe the perceptions and experiences of heath care technology workers using a heuristic inquiry model. This research was

conducted through phenomenological interviews with a limited number of health care technology workers. While the study had maximum variation sampling strategy, it does not address all health care technology job functions or all work site settings. The sample of this study included a subset of health care technology employees with specifically defined minimums of tenure and experience. Furthermore, the sampling criteria specifically exclude health care technology executives, current clinicians, and contractor employees. The outcomes and findings of this study may not be generalizable to other industries or employee populations.

Organization of the Study

This research study is presented in five chapters. Chapter 1 provides an introduction to the area of research. This first chapter also establishes the purpose of the study, its research questions, the relevant theoretical frameworks, and the key terms used throughout this study. Chapter 2 presents a review of the relevant literature. This chapter examines the history of the health care industry in the United States and evolving role of health care technology workers. After setting the growing importance of health care technology workers in this historical, regulatory and economic context, the chapter goes on to explore the theoretical frameworks in depth. Chapter 2 also looks at the relevant studies of clinician, support workers, health care technology workers, and other technology workers. Chapter 3 describes the research methodology and rationale. Chapter 4 presents the research findings and Chapter 5 discusses the conclusions and provides suggestions for future research.

Chapter 2. Review of Literature

This study focuses on the perceptions of health care technology workers regarding task significance, mission valence, work meaning, and job satisfaction. The literature review presented begins with an overview of the theories of job satisfaction and job meaning. Associated concepts including task significance and emerging theory regarding mission valence are also explored. The health care marketplace in the United States is discussed to provide contextual understanding of the financial and regulatory changes driving this industry. The importance of health care technology is examined including the role of technology in meeting with rapidly emerging regulatory requirements, improving the quality of patient outcomes and containing health care costs.

There is limited research focusing specifically on health care technology workers; therefore, the academic literature available for related populations is also explored. The related populations selected for inclusion in the literature review are clinicians, health care provider organization support staff, and other technology workers. Clinicians and health care support staff employees were selected because they work in support of the same organizational mission as health care information technology workers. The perceptions of mission valence and job meaning of these other health care provider organization employees may be especially relatable to the perceptions of health care technology workers.

Research regarding technology workers in other industries was also selected for inclusion in this review of the academic literature due to the similarity of their tasks to the tasks of health care technology workers. Technology workers, whether in health care or other industries, may have similar work, technical challenges, organizational reporting structures, and employment

opportunities. The perception of other technology workers regarding their feelings of task significance and job satisfaction may be similar or relevant to the perceptions of health care technology workers.

This literature review spans two theoretical frameworks. The first area of theory is job satisfaction.

Job Satisfaction Literature

Job satisfaction has a long legacy of academic study and has a cadre of theories. Job satisfaction is one of the most comprehensively researched subjects in organizational psychology (Judge & Church, 2000). There are several important theoretical models put forth by scholars to explain employee job satisfaction. Judge and Church (2000) noted that job satisfaction is widely studied and researched across many types of employees and organizations. An employee's feelings of job satisfaction manifest in a wide range of workplace behaviors. Job satisfaction has been linked to an employee's productivity, an employee's work motivation, the frequency of absenteeism, the frequency and severity of workplace accidents, employee turnover intention, the emotional and physical health of workers, and the overall satisfaction that a worker has with his or her life (Landy, 1978). Studies of both job satisfaction and job satisfaction models have occurred across various vocations, educational backgrounds, economic classes, genders, and many other employee attributes.

Theories to explain job satisfaction and its impact on the worker's motivation have evolved starting in the 1940s with Maslow's hierarchy of needs (1943). Following the hierarchy of needs, scholars have put forth competing and ameliorating theories to explain employee job satisfaction. These theories seek to expand the understanding of worker satisfaction by

expanding the range of cognitive components, addressing the workers overall affective state or examining the worker's innate disposition.

One cognitive theory of job satisfaction is *equity theory* (Adams, 1965). Cognitive job satisfaction looks at the employee's perception of specific attributes of their work. Cognitive job satisfaction can be measured as the satisfaction with specific aspects such as the amount of compensation, level of authority, degree of prestige, or the attractiveness of the working conditions (Thompson & Phua, 2012). Equity theory looks at the fairness of social relationships. Equity theory sets forth the hypothesis that workers measure their effort, treatment, and compensation against those of their peers. If the employee perceives inequities or unfairness to exist, he will feel distressed and therefore he will feel dissatisfied. Later in the 1960s, Hertzberg's two-factor (Motivator-Hygiene) theory emerged. This theory looks at the employee's perceptions of motivators and de-motivators. Motivators include work variety, recognition, and the worker's sense of achievement. De-motivators encompass hygiene factors such as remuneration, supervisory policies and behaviors, and the work environment (Herzberg, 1968). Following Hertzberg, Locke (1976) put forth two theories of job satisfaction that looked at emotional or affective response.

While cognitive job satisfaction theories examine the specific attributes of one's work, affective job satisfaction is measured as the extent to which individuals hold pleasurable emotions, attitudes or perceptions about their job overall. Locke put forth two affective theories, *discrepancy theory* (Locke, 1969) and the *range of affect theory* (Locke, 1976). Discrepancy theory maintains that job satisfaction is determined by the level of discrepancy that an individual feels exists between his responsibilities and his performance. Individuals who fail to meet their

obligations will feel anxiety and stress (Locke, 1969). The range of affect theory states that job satisfaction is determined by a distance between what a worker desires in his work versus the actual conditions of his job (Locke, 1976). When the desired state is distant to the perceived conditions, the worker will feel dissatisfied.

While both cognitive and affective theories contributed to the understanding of job satisfaction, they were found to be insufficient in understanding how an individual's innate attitudes influenced his feelings of job satisfaction. Dispositional models of job satisfaction address this gap. Dispositional theories suggest an individual's innate disposition predisposes the person's degree of satisfaction. Furthermore, one's disposition toward feelings of satisfaction will exist across any job. The *core self-evaluations model* is a dispositional model of job satisfaction. This model looks at an individual's self-reported data on four components: self-esteem, self-efficacy, locus of control, and neuroticism. Feelings of high self-esteem, a high sense of self-efficacy, low levels of neuroticism, and having an internal locus of control all will increase an individual's disposition toward feelings of satisfaction (Judge, Locke, & Durham, 1997).

Cognitive theories continued to emerge in parallel with dispositional models. Hackman and Oldham's (1976) *job characteristics model* (JCM) is a cognitive model to explain job satisfaction and the interplay of job design, job attitude, and job performance. The job characteristics model identifies five core job characteristics that are components of all jobs. These five core components are skill variety, task significance, task identity, autonomy, and feedback. Each of these components is measured as it is perceived by the worker and not by the manager or job designer.

According to the job characteristics model, the worker's perception of the five core characteristics impacts the worker's overall psychological state. In turn, this influences the worker's perception and experience of the job itself, his feelings of personal accountability and the results of the work performed. The worker's psychological experience of meaning, accountability and work results subsequently influences his work outcomes including job satisfaction, employee motivation, absenteeism and work effectiveness (Hackman & Oldham, 1976).

In the job characteristics model, the five core job characteristics can be quantitatively measured. The first assessment tool developed by Hackman and Oldham (1976) to measure these job characteristics is the Job Diagnostic Survey (JDI). The JDI is a self-assessment tool using Likert scales. The survey measures the individual employee's perceptions of the five core job characteristics, along with the three identified psychological states and specific work outcomes. The JDI also measures employee perceptions of two moderator variables (Hackman & Oldham, 1974). The perception of job characteristics varies from employee to employee as does the importance an employee assigns to specific components of his work.

In addition to the JDI, there are several other assessment tools that seek to measure the employee's cogitative perceptions of the characteristics of the job. These alternative assessments include the Job Characteristics Inventory (Simes, Szilagyi, & Keller, 1976) and the Yale Job Inventory (Hackman & Lawler, 1971).

Multiple studies have validated the job characteristics model (Fried & Ferris, 1987; Lambert, Hogan, Dial, Jiang, & Khondaker, 2012). A meta-analysis of the correlational results of 76 studies conducted using the Hackman and Oldham's Job Characteristics Model concluded

that the model is reasonably valid once statistical artifacts are removed. The results of multiple studies have demonstrated that employee perceptions of the characteristics of his job are multidimensional and are related to employees' psychological and behavioral outcomes (Fried & Ferris, 1987).

Job satisfaction continues to be widely studied, in part due its demonstrated correlation to employee behaviors and attitudes. Job satisfaction's relationship to an employee's productivity, turnover intention, and occupational commitment make it of interest to both academic researchers and to business leaders.

Job satisfaction's correlation to turnover intention and occupational commitment. Job satisfaction has a negative correlation to turnover intention with turnover intention defined as the individual's desire to leave his current employer (Shaw, 1999). Job satisfaction is also a determinant of occupational commitment that can be defined as the individual's desire to continue in his current career path or occupation. Kidd (2006) noted that turnover intention and occupational commitment are crucially important to health care provider organizations because these organizations frequently experience high turnover in excess of twenty percent of staff annually. This high rate of employee turnover is especially problematic when considered in light of the growing shortage of trained and licensed health care provider staff in many job categories and geographic locations. In addition to the difficulties and costs of recruiting care delivery staff, hospitals incur the high costs for training and orientating new employees in all job categories.

Both turnover intention and occupational commitment are a frequent focus of academic studies of clinician staff members. This research focus may be due to a much-publicized, sustained shortage of nurses and of clinicians in some medical specialties and in rural areas

(Grunfeld, et al., 2000; Schiestel, 2007). It is less publicized, but health care provider organizations have similar difficulties in attracting and retaining information technology talent (Asplund, 2002).

While occupational commitment and turnover intention are less widely researched in health care information technology employees, the shortage of information technology workers in care provider organizations is similar to the shortage of nurses and other clinician staff (Grunfeld et al., 2000). However, health care information technology workers have greater organizational flexibility. Health care technology workers with high occupational commitment and high low organizational commitment can continue working in information technology in other health care provider organizations or have the option to migrate to many other industries since technology skills are largely transferrable. Tu, Raghunathan, and Raghunathan (2002) asserted that unlike many other professions, information technology professionals historically displayed a much higher rate of turnover due to emerging employment opportunities, rapid technological changes, and job stress. In contrast, clinicians with high occupational commitment have fewer options to continue practicing their vocation if they choose to leave the health care industry.

Job satisfaction and productivity. It is sometimes assumed that happy employees are inherently more productive than unhappy employees. The research demonstrates that this assumption is not consistently accurate (Syptak, Marsland, & Ulmer, 1999). While it is often asserted that job satisfaction influences job performance, empirical studies show only a weak to moderate strength correlation (Iaffaldano & Muchinsky, 1985; Judge & Church, 2000). However, Crede, Chernyshenko, Stark, Dalal, and Bashshur (2007) asserted that this weak to

moderate determinant is due to studies that use a narrow view of job performance. A differing view of the relationship between job satisfaction and worker productivity is that job satisfaction stems from being a productive worker. This view is posited, in opposition to the tradition viewpoint, that the causation flows from job satisfaction to increased worker productivity (Bassett, 1994). In looking across multiple studies of job satisfaction and productivity, it can be summarized that there is some amount of positive correlation between job satisfaction and work productivity but the relationship is not conclusively understood.

Job Meaning

Both positive psychology and positive organizational scholarship theorize that individuals pursue meaningfulness in their lives and in their work. Seligman coined the term positive psychology in 1999. Positive psychology breaks with traditional psychology's focus on diagnosis and pathology. It looks at building fulfilling lives for healthy people instead of healing the disease of the unhealthy. It focuses on human strengths and positive experiences (Seligman, 2002; Seligman & Csikszentmihalyi, 2000). Similarly, positive organization scholarship focuses on positive organizational traits such as appreciation, collaboration, virtuousness, positive deviance, extraordinary performance, and meaningfulness (Peterson & Seligman, 2007)

Finding a sense of meaning provides individuals with both satisfaction and intrinsic motivation (Frankl, 1962; Seligman & Csikszentmihalyi, 2000). The meaning one finds in one's work influences many attributes of the person's life. Looking across multiple studies and vocations it can be summarized that finding meaning in work improves both an individuals' mental health and his or her overall sense of well-being (Dik & Duffy, 2009). An employee's

perception that his or her work is meaningful is at least as important to the employees' level of job satisfaction as are compensation and job security (O'Brien, 1992).

In his seminal work on meaning, Frankl (1962) asserted that man's search for meaning is the single most driving motivation of human beings. Frankl's writing continues to shape the literature and more recent researchers reiterate his thinking regarding man's enduring search for meaning. Baumeister (1991) and Emmons (1991), both asserted that the pursuit of meaning along with the pursuit of meaningful goals are unique to the human species and that these pursuits are essential to the human experience. Research by Steger, Kashdan, Sullivan, and Lorentz (2008) looked across multiple quantitative studies of the search for meaning by research subjects who had different cognitive processing styles and personality types. Their research found that individuals whose life experience lacks meaning would continue to search for it, but that searching for meaning did not consistently result in finding meaning.

The search for meaning and the presence of meaning are separate experiences that are perceived differently. In research conducted by Park, Park, and Peterson (2010), 731 adults completed the Meaning in Life Questionnaire, which assesses the presence of meaning, the search for meaning, and the subject's sense of well-being. The presence of meaning was positively correlated to the research subject's overall life satisfaction and happiness, and it was negatively correlated with depression and negative affect. However, the search for meaning showed the opposite correlations to satisfaction, happiness, depression, and negative affect. The study also found that for subjects who already had substantial meaning in their lives, continuing the search for meaning was positively associated with greater well-being including improved life satisfaction, greater happiness, and less incidence of depression. The researchers concluded that,

when successful, the search for meaning is eventually satisfying. Strong feelings of meaning contribute to one's sense of eudemonic happiness and well-being rather than one's hedonistic happiness (Waterman, 1993)

Seligman (2002) expressed the range of hedonic to eudemonic happiness as having three steps: a pleasant life, a good life, and a meaningful life. In Seligman's hierarchy, a pleasant life is the lowest state of hedonic happiness and it is characterized by sensual pleasures. The second level of happiness is a good life that is typified by the experience of enjoying tasks that one is skilled to perform. The highest level of happiness is a meaningful life that is one enduring eudemonic happiness. Seligman (2002) described a meaningful life as one in which the individual perceives intrinsic merit. This merit is based on the individual's specific values and beliefs.

Baumeister and Vohs (2002) wrote that the crux of finding meaning in life is finding connection. Work meaning is similarly finding a connection with one's work. Work meaning can be defined as the employee's understanding of the tasks that they perform and the importance that the employee attributes to his or her work (Wrzesniewski, et al., 2003). Pratt and Ashforth (2003) found the employee's perception of the meaningfulness of his work can be cultivated both by the employee's beliefs about his specific job functions and by his beliefs about the organization. Guevara and Ord (1996) theorized that individuals perceive job meaning through organizing their experience of three attributes: their contribution, their relationships, and their presence and belonging.

Understanding and supporting the employee's search for meaning in his work is essential to retain and motivate key staff members. Both individuals and organizations benefit when

employees perceive their work to be meaningful. Employees who perceive their work to be meaningful have been shown to exhibit higher levels of job satisfaction. In turn, these employees also demonstrate a higher level of organizational commitment and increased prosocial behaviors (Wright & Pandey, 2011). Chalofsky (2003) focused on meaning of work as a motivational construct and identified three themes, the employee's sense of self, the work itself and sense of balance

While the most common organizational outcome linked to meaningful work is increased satisfaction with one's job, it is certainly not the only one (Pratt & Ashforth, 2003). In addition to increased job satisfaction, the perceived meaning of work has been assumed improve the organization by decreasing employee absenteeism, positively influencing organizational attitudes including employee engagement, increasing employee motivation and improving job performance (Holbeche & Springett, 2004; Milliman, Czaplewski, & Ferguson, 2003; Roberson, 1990). Conversely, the inability of employees to find meaning in their work has been linked to negative organizational performance and employee cynicism (Andersson, 1996; Andersson & Bateman, 1997; Cartwright & Holmes, 2006)

Mission Valence and Task Significance

Task significance and mission valence both address the perceptions that workers have of the importance of the work they perform. The key difference is that task significance looks at the work of the individual and mission valence looks at the collective work of the organization. Task significance is the employee's perception of the impact that their individual work contribution has on others (Hackman & Oldham, 1976). Mission valence measures the

employee's perceptions of the salience of the organization's collective purpose (Wright & Pandey, 2011).

Task significance underpins both job satisfaction (Hackman & Oldham, 1976) and work meaning (Pratt & Ashforth, 2003). When the worker perceives his or her individual tasks to impact positively the lives of others, it drives feelings of job satisfaction. Similarly, when an employee feels that his work has a positive impact, the employee feels that the work has substance and that it matters to others. This perception of making a positive impact drives a sense of meaningfulness (Morgeson & Campion, 2003).

Task significance has been extensively studied following Hackman and Oldham writings in the 1970s. Hackman and Oldham (1976) identified task significance as a component of cognitive job satisfaction. It is one of five job characteristics quantitatively measured in the Job Diagnostic Survey. The other job characteristics are skill variety, task identity, autonomy, and feedback. Hackman and Oldham theorized that by quantitatively measuring an employee's perceptions of these five job characteristics it is possible to calculate his motivational potential score or satisfaction.

In comparison to task significance, mission valence is lightly studied. The term mission valence first appeared in the academic literature in an article by Rainey and Steinbauer (1999) about the factors that underpin effective government organizations. The second appearance in the academic literature occurs in 2002 in a single article by Frederickson and LaPorte (2002), which examined the reliability and performance of airport security organizations. The term mission valence does not appear again in the academic literature for the following 6 years. In

2008, a study by Pandey, Wright, and Moynihan explored mission valence as a component of public service motivation and interpersonal citizenship behavior.

Considering the relatively late differentiation of mission valence from task significance, it is unclear how much of the research on task significance comingles feelings about the attractiveness of individual tasks and collective actions. It is known that both mission valence and task significance are both cited as positively correlated to the meaning employees find in their work in both for-profit and non-for-profit organizations (Hackman & Oldham, 1976; Pandey & Stazyk, 2008; Pratt & Ashworth, 2003). However, much of the research on mission valence and task significance has been conducted in populations whose work is directly related to the organization's mission. The influence of mission valence on organization staff members who do not perceive their roles to impact the organization's mission is not widely studied or clearly understood.

The United States Health Care Industry

In 2011, health care spending in the United States reached $2.7 trillion dollars. That equates to a per capita expenditure of $8,680 per citizen. In 2011, the expenditure for health care was 17.9% of the United States' gross domestic product (GDP). As a percentage of the GDP, the expenditure for health care has remained consistent since 2009. However, taking a slightly longer view does show the growth of health care spending as a percent of the GDP. In 2000, health care spending was only 13% of the United States' GDP (Centers for Medicare & Medicaid Services, n.d.). In total dollars, the health care expenditure of the United States has increased to 115 times what is was in 1960 (Altarum Institute, 2015).

Set in an international context, the United States spends far more per capita than other industrialized nations. The patient outcomes for this investment show mixed results. Despite having the most costly health system in the world, the United States consistently ranks below other developed nations in terms of quality of care, access to care, efficiency, equity and healthy citizens (Davis, Stremikis, Schoen, & Squires, 2014). Research by Organisation for Economic Co-Operation and Development ([OECD], 2013) found that health outcomes in the United States are generally no better and are frequently worse than in other developed countries with patient outcomes in the United States for common indicators such as heart attack mortality, unmanaged asthma and diabetes being below the average. Life expectancy for babies born in the United States in 2012 is 78.8 years. This ranks the United States among the bottom 10 OECD countries in terms of life expectancy and is below the OECD median of 80.2 years.

Porter, Teisberg, and Brown (1994) summarized the problems confronting the costs of the health care industry in the United States. They asserted that attempts at cost reductions have not resulted in lower total costs. Instead, these attempts have resulted in shifting costs between patients, care providers and insurers. They further declared that health insurance companies, or payers, focus on attracting healthy subscribers while attempting to shift the costs of care for the unhealthy. Finally, Porter et al. maintained that competition in local health care markets has not yielded higher quality care because providers are focused on meeting the service levels of local, and not national, competitors

Multiple authors have noted that health care in the United States has a complex business environment with patients, care providers, and payers all seeking to maximize value and minimize cost (Benson, Weech-Maldonado, & Gamm, 2003; Chavanu et al., 2006; Forrest, Shi,

Von, & Ng, 2002; Gordon, 2004; Porter et al., 1994). Each of these three groups has its own goals that can be contradictory to the goals others. While each group seeks to find value in health care, they define value differently.

Patients, payers, and providers in the United States. In the United States, health care is defined through three primary groups: patients, providers, and payers. The patient is the ultimate consumer of health care services and seeks high quality, accessible care at an acceptable cost (Benson et al., 2003).

Patient care is delivered by the provider group. The health care provider grouping includes not only physicians and other allied medical care providers. The provider grouping also includes the care provider organizations such as hospitals, pharmacies, skilled nursing facilities, home health care services, clinics, and hospices. Providers seek to be both fiscally sensible and clinically accountable partners in patient care (Bard, 1998; Benson et al., 2003; Fries & Schmitz, 1996).

The final health care grouping is the payer. In the United States, the payer grouping consists of a complex web of different types of entities including both group payers and individual payers. The largest group payer for hospital services in the United States is the federal government that reimburses providers through the Medicare program. In addition to Medicare, which is available for older Americans, federal and state programs are available for low income individuals and families who are unable to afford private insurance. Examples of these federal and state aid programs are Medicaid, TennCare, or Medi-Cal. After state and federal payers, employers groups are the next largest payer entity. Group payers, whether government or employer, want their covered beneficiaries to receive quality health care services.

However, they also seek value by limiting costs, curbing excess demand and reducing unnecessary medical tests and procedures which are unlikely to improve the health of their beneficiaries (Bard, 1998; Fries & Schmitz, 1996)

The individual payer group includes both insured and uninsured persons. Insurance for individuals and families is often provided as a benefit of employment and is fully paid or subsidized by the employer. Individuals and families can also purchase private insurance without affiliation to an employer group. The final payer group entity is the uninsured. Individuals and families with no government subsidized or private insurance pay their health care costs out of pocket. Individual payers are patients themselves or they are paying for the care of a dependent. They seek to health care that is accessible, high quality, cost efficient (Benson et al., 2003).

With patients, payers and providers seeking different and sometimes contradictory goals, the business environment of health care is complex. Increasing its overall complexity is a rapidly evolving regulatory and market demands.

The business environment of modern health care. The business environment of health care in the United States is evolving more rapidly than perhaps at any time in the industry's history. The history of modern health care provider organizations in the United States can be defined into three distinct phases based on the level of centralization.

The first period of modern health care organizations spanned from 1945 to 1965. During this period, physicians dominated both the delivery and coordination of care. Health care was a decentralized industry and the patient relied on his individual doctor and on local community hospitals (Barnes, 2007).

The second period of modern health care organizations spanned from 1966 through 1982. During this time, the health care industry became more centralized (Barnes, 2007). This period began with the enactment of the Social Security Amendments of 1965, which created the Medicare and Medicaid programs. As a result of Medicare and Medicaid, the United States federal government became an important payer of health care costs (Peters, 2004). The shift from a model of many small payers to a large consolidated federal payer drove increases in health care consolidation and standardization. As regulation increased during this time period, the cost drivers encouraged further consolidation of solo practitioners into group practices and of single hospitals into hospital networks.

The third period of modern health care started in 1983. This period has also been shaped by the federal Medicare program. In 1983, Medicare shifted to a prospective payment system (Barnes, 2007). The Medicare prospective payment system predefines a fixed amount of reimbursement to the provider based on the patient's diagnosis group, procedure, or ambulatory status. Distinct prospective payment systems are defined for specific heath care delivery types such as inpatient hospitals, skilled nursing facilities, hospices, and home health care providers (Centers for Medicare & Medicaid Services, n.d.).

Implementation of the prospective or fixed payment system has had a range of intended and unintended impacts. As intended, the fixed payment system eliminated incentives for care providers to shift costs to Medicare patients (Porter et al., 1994). Trogen and Yavas (2002) asserted that this change has resulted in a reduced number of inpatient admissions and decreased length of hospital stays for Medicare patients. An unintended consequence of the prospective payment system is the elimination or reduction of reimbursements to providers for care provided

to patients as part of clinical trials. The change in reimbursements has reduced the care options available to patients (Antman, 1993). Overall, the prospective payment system drove even greater consolidation of health care provider organizations. During this time period, independent hospitals merged to create much larger hospital systems and purchasing cooperatives formed (Barnes, 2007).

Barnes' (2007) definition of the history of health care organizations predates the industry changes underway to respond to health care reform. Modern health care organizations are now entering a fourth phase driven by changes mandated by the Patient Protection and Affordable Care Act commonly called the Affordable Care Act. The Affordable Care Act legislation is aimed at reducing the number of uninsured American citizens. The legislation increases access to health insurance and, as a result, is expected to broaden access to health care services. The act outlines a system of mandates, subsidies, and tax credits to allow all Americans to have access to affordable health insurance. The act also changes Medicare reimbursement from the prospective payment system to a single bundled payment for an episode of care (Patient Protection and Affordable Care Act, 2009). Responding to these regulatory changes requires that health care provider organizations invest in heavily in information technology changes to quickly meet new federal and state coverage regulations, billing structures, and reporting requirements (Bhaskar & Vo, 2012a; Buntin, Jain, & Blumenthal, 2010; Encinosa & Bae, 2011).

While the implementation of the Affordable Care Act is in its infancy, it is anticipated that the key provisions of the act will shape the evolution of health care provider and payer organizations by increasing the total number of people with insurance and increasing overall health care expenditures. The Centers for Medicare Services predicted that United States

healthcare expenditures will escalate to reach $5.2 trillion in 2023. This growth represents a 5.9% annual growth rate from 2013 to 2023 with increasing participation in government subsidized programs driving that growth. This projected growth comes in two forms: baby boomers aging into Medicare and the Affordable Care Act expanding Medicaid coverage to almost every citizen whose income falls under 133% of the federal poverty line.

Provisions of the Accountable Care Act that have increased the number of insured individuals include: the guaranteed issue of insurance to all Americans without regard to preexisting conditions, the individual mandate to secure insurance, the creation of health insurance exchanges and low income subsidies to purchase insurance (Patient Protection and Affordable Care Act, 2009). This legislation is in turn reshaping the business environment of delivering health care in ways that are continuing to evolve. In addition to increasing the number of insured individuals, the Accountable Care Act's provisions may reshape public health in the United States through expanding access to care and increasing the focus on prevention and overall wellness (Majette, 2011).

Table 1

Provisions of the Patient Protection and Affordable Care Act Which Increase Access to Health Insurance and Health Care

Provision	Impact to Accessibility of Health Care
Guaranteed Issue	Health insurance policies must be available for issue to all citizens. These policies must be available without discrimination or pricing variances for pre-existing medical conditions. Increase insurance rate are permissible only for individuals who make the behavior choice to use tobacco.
Elimination of Coverage Limits	Coverage caps, both lifetime and per annum, are no longer permissible.
Expansion of Medicaid	Medicaid will be expanded to be available to individuals and families with incomes up to the 133% of the poverty level. Individual states may elect to set their own Medicaid requirements.
Individual Mandate	With some exceptions, individuals who do not have health insurance coverage from a government or employer sponsored health plan must secure private insurance or pay a penalty
Health Insurance Exchanges	Federal and State exchange marketplaces will exist to allow citizens to shop and compare available health plans.
Low Income Subsidies	Low income families and individuals can receive federal subsidies to purchase private insurance via the Health Insurance Exchanges.
Preventive Care Coverage	An essential benefits package is defined to provide preventative care. There cannot be deductibles and copayments for the care

Adapted from Patient Protection and Affordable Care Act, 2009.

In its first year of implementation, 14.1 million Americans gained health insurance through the Affordable Care Act. From the start of the open enrollment period in October 2013

to March 2015, the rate of uninsured American adults dropped from 20.3% to 13.2% (United States Department of Health and Human Services, 2015). However, the increase in insured Americans has not improved the overall profit margin of health insurers. This is particularly true for not-for-profit insurance companies. As an example, the overall net margin of the Blue Cross plans continues to decline. The aggregate margin result for 30 Blue Cross plans is now 0.4% (Goldman Sachs, 2015). Public financial documents show that in aggregate profit and not-for-profit insurers after tax profit margins are less than 5%. Financial analysts do not predict that the overall profit margin payers will significantly improve in the next five years (Goldman Sachs, 2014).

The increase in insured American citizens has disproportionately impacted populations that have been underserved historically. These individuals have traditionally not had consistent access to routine or preventative health care and have frequently relied on emergency room services as the primary source of care. As a result health care for these populations has been episodic instead of holistic (Kuramoto, 2014; Liebert & Ameringer, 2013; Lightfoot, De, Dendas, Jackson, & Meehan, 2014).

One outcome of the increase of insured Americans is the rapid proliferation of retail health care options. There are now 1,800 retail health clinics in the United States that provide more the 10 million patient encounters each year. Retail health clinics offer primary care and immunizations often without requiring an appointment and with more convenient hours during the evening and weekend. Many retail clinics are affiliated and housed in pharmacies (e.g., CVS MinuteClinic, Walgreens Health Clinic), supermarkets (e.g., Kroger Little Clinic), or big box retailers (e.g., Target Clinic, Walmart Retail Clinics) creating new venues to receive patient care

(Bachrach, Frohlich, Garcimonde, & Nevitt, 2015). The increase of retail clinics offsets the difficulties may potential patients find in trying to schedule an appointment. A study of physician appointment scheduling in 15 major metropolitan markets found that the average wait time for a new patient to see a physician was 18.5 days (Gold, 2015).

In addition to the increase in retail health care options, it is anticipated that the changes brought on by the Affordable Care Act will drive a reduction in employer sponsored insurance and an increase in individuals purchasing insurance through the state and federal exchanges (Long & Gruber, 2011). This shift to direct-to-consumer marketing will drive changes in how the types of health insurance products offered.

Bhaskar and Vo (2012b) posited that the provisions of the Affordable Care Act drive increasing focus and investment in health care information technology. McGraw (2009) stated that nearly every modern health care reform relies on health care information technology. In fact, many authors cited information technology as an essential building block of health care reform (Bhaskar & Vo, 2012a, 2012b; Buntin et al., 2010; Encinosa & Bae, 2011; Kapoor & Kleinbart, 2012).

The Evolving Importance of Information Technology in Health Care

Health care is being reshaped as a technology industry due to both regulatory changes and efforts to contain health care costs. Health care information technology has been championed as a way to transform the delivery of health care by improving patient outcomes while simultaneously reducing the cost of care (Arrow et al., 2009; Goldstein & Blumenthalm, 2009; Lee, McCullough, & Town, 2013; McGraw, 2009; Rai, 1999).

In the United States, the implementation of electronic health records for care provider organizations has been encouraged by the federal government in the Health Information Technology for Economic and Clinical Health Act (HITECH). This legislation is a part of the American Recovery and Reinvestment Act of 2009. The act seeks to foster the meaningful use of health care technologies to reduce health care costs, eliminate paperwork, and ensure improved patient care. The act provides financial incentives and rewards to ensure that every United States citizen has an electronic medical record (United States Department of Health and Human Services, 2012).

Electronic health records provide opportunities to increase cost efficiencies while improving patient care. Benefits attributed to the use of electronic health records include: the ability to rapidly identify and correct gaps in patient care, the improved ability to monitor patient compliance to prescription drug regimens, and the ability to safely redirect patients from the emergency room to suitable, lower cost care environments when appropriate (Hochstadt & Keyt, 2009).

In addition to changing patient care practices, information technology continues to shape the business processes in many segments of the health care industry (Lee, McCullough, & Town, 2013). Technology initiatives impact the full health care value chain from patient outreach (Rai, 1999) to medical office intake through to care delivery (Hochstadt & Keyt, 2009; Trotter & Uhlman, 2011). Technology is also changing revenue cycle functions such as billing and insurance claims (Frisse, 1999).

Frisse (1999) used Porter's model to define the components of the health care value chain, which are being reshaped by implementing evolving technologies. These value chain

impacts span both the payer and provider systems. Provider value chain components, which are affected by information technology, include practice management, patient test results reporting and patient billing. Payer value chain components impacted include the determination of benefit eligibility, care referral and pre-authorizations, actuarial functions including capitation and risk pooling, the submission and payment of reimbursement claims and the management of health insurance plan membership.

Considering the sweeping scope of value chain changes made by implementing information technology, it should be anticipated that technology changes would force both organizational culture changes and employee behavior changes in health care companies. In studies conducted of health care technology implementations, it is clear that not every implementation is warmly welcomed by clinicians or by medical facility support staff. Flawed implementations are not only frustrating to all staff members; they are deleterious to the quality of patient care and may increase patient mortality (Han et al., 2005; Spetz, Burgess, & Phibbs, 2012).

However, research also indicates that health care technology can be smoothly implemented. In studies conducted of multiple health care technology implementations, Spetz et al. (2012) observed that the success of the implementation is determined by four factors. The first factor is the level of support from both leaders and staff. The second factor is the speed and flexibility of the implementation timeline. Allowing sufficient resources for equipment, training, support, work flow changes and additional staff is the third attribute of successful implementations. The final component of successful technology implementations is the team's ability to anticipate and address setbacks.

A successful technology implementation affects many aspects of the health care organization. One study of a patient flow management system implementation was conducted at the University of Pennsylvania Hospital, which is a regional trauma and transplant center. The study noted that as predicted, patient flow was positively impacted. After the implementation, surgical schedules could be rapidly adjusted to accommodate critical care patients, preoperative issues, and operating room delays. In addition to the positive impacts to hospital administrative functions, other key findings of the study noted that the technology implementation increased employee satisfaction, improved the quality of patient care, and increased the hospital's productivity and revenue (McHugh, 2004).

Improved health care technology, particularly technology at the patient bedside, is cited as improving nursing care, patient safely and the retention of nursing staff. Andrews and Dziegielewski (2005) wrote that the shortage of nurses is anticipated to grow due to both declining enrollment in nursing education programs and the retirement of nurses from the Baby Boomer demographic. Effective implementation of bedside and care management technology is cited as an opportunity to optimize nursing care and workflow while reducing medical errors (Meadows, 2002). Kirkley, Johnson, and Anderson (2004) noted that in addition to the retention of nursing staff, improvements in clinical technology systems yield more complete and consistent patient care information and improved patient outcomes.

Applying the Theoretical Frameworks to Job Roles Included in this Study

In the existing academic literature, multiple schemas are used to categorize care provider organization staff members. In each study, the research questions to be investigated influenced the selection of an appropriate classification schema of research subjects. This component of the

Australian Institute of Health and Welfare literature review is structured to examine research conducted in three types of care provider organization employee categories: clinicians, medical facility support staff, and health care information technology workers. This classification schema was selected to identify the individual worker's task proximity to the care provider organization's mission of delivering patient care. The relevant literature regarding information technology workers in other organizations is also included in the review of the literature.

There are other commonly used alternative classification groupings for potential research subjects in care provider organizations. To extract relevant information from the existing literature, it is important to carefully consider the grouping of targeted research subjects. In one common classification schema, physicians are grouped separately from other licensed medical professionals and ancillary care giver staff. Another classification schema in the literature has health care organization staff grouped in accordance with the type of facility at which they work such as an acute care hospital, rehabilitation hospital, family practice clinic or extended care facility. A third common schema groups hospital administrators and executives separately from care delivery personal. For this discussion, the available research was categorized to align to the clinician, care provider support staff and health care information technology worker classifications.

Health care information technology workers. Information technology workers in the health care sector have several attributes that make their role unique among care provider organization staff. Unlike clinicians or other care provider organization support staff members, health care information technology workers are unlikely to have any patient contact as a routine part of their work. While clinicians interact with patients each day (Australian Institute of Health

and Welfare, 2015) information technology staff are unlikely to have consistent patient contact (Bergen, 2001). Frequently, health care information technology workers may work away from the care delivery work site in a separate administrative office space. Due to patient privacy requirements such as Health Insurance Portability and Accountability Act, information technology workers may have no direct knowledge of individual patients, the care delivered or the eventual patient outcome (Bergen, 2001). When their job location is an administrative work site, health care technology workers may also have very little contact with their coworkers who are clinicians and medical facility support staff (Sezgin & Yıldırım, 2014). While the work of health care information technology workers has a measurable impact on patient care, these employees may have relatively little direct knowledge of how their contribution is used or valued. This lack of line of sight to patient outcomes may influence the perception of job satisfaction, mission valence and task significance of health care technology workers.

The role of information technology workers and information technology departments are evolving rapidly (Dimick, 2012). Across organizations job attributes such as amount of compensation, responsibilities, prestige, and working conditions are highly variable (Niederman & Sumner, 2004). Another key variation in job attributes is the attitude that clinicians and medical facility support staff have toward information technology and information technology workers (Morris, 2001; Sezgin & Yıldırım, 2014).

Other information technology workers. According to Csorny (2013) technology workers across different industries share similar tasks to healthcare technology worker including the design, coding, testing, and implementation of software and hardware. Job titles and levels of education attained are similar in health care and in other industries; however, health care

provider organizations have difficulties in attracting and retaining information and technology talent. Asplund (2002) noted that the shortage of health care technology workers is due, in part, to lower salaries paid to information technology professionals working in health care than those working in other industries.

In response to the difficulties in recruiting technology talent, health care companies have aggressively marketed themselves to potential health care technology employees. Efforts to attract and retain health care information technology workers have included increases in remuneration, benefits, and improved working conditions. In 2002, only three health care companies were included in the *Computerworld* annual ranking of the "100 Best Places to Work in Information Technology" (ComputerWorld, 2002). By 2012, the number of health care companies included in the ranking had grown and 16 were included in the top 100 companies (ComputerWorld, 2012).

Clinicians. For the purposes of this literature review clinicians are defined as all licensed, medical practitioners whose assigned tasks include direct patient care responsibilities and who spends most of the total weekly working hours mainly engaged in clinical practice (Australian Institute of Health and Welfare, 2015). In this literature review, the term clinician includes all doctors and surgeons, allied health professionals, and other licensed medical care providers. Example occupations of clinicians include: physicians, registered nurses, occupational therapists, and pharmacists.

The members of the clinicians group share the key job characteristic of direct accountability for patient care. This shared job characteristic exists despite variations in job title, occupational prestige, level of authority and amount of remuneration. Clinicians in this study all

work directly in job tasks that are immediately proximate to the care provider organization's mission to deliver patient care. As this literature review looks at the employee's perceptions of both task significance and mission valence, viewing clinicians as a single category is a logical grouping.

However, grouping clinicians as a single category creates substantial variation in this demographic of this classification. Levels of education attainment, compensation and work autonomy, and authority will vary meaningfully within the clinician category. As an example, both a phlebotomist and a neurologist would fall into this category, but these jobs have significantly different levels of qualification. To become a Certified Phlebotomy Technician in California the applicant does not need to have an associate or undergraduate college degree. The Phlebotomist certification requires less than 100 hours of classroom training and practicum (California State Department of Public Health, 2012). In contrast, physicians will minimally obtain an undergraduate degree, a medical degree, and complete several years of residency (Bureau of Labor Statistics, 2014). Despite these substantial variations in the demographics of this grouping, all clinicians are categorized together due to the job characteristics of direct interaction with patients and the proximity of their tasks to the organization's patient care mission.

Care provider organization support staff. Care provider organization support staff members are defined as employees who work at a care delivery job site, but whose assigned tasks do not include direct patient care responsibilities. While support staff members are not accountable for patient care or patient outcomes, care provider organization support staff employees may have frequent patient contact in their daily job functions. Examples of care

provider organization support staff employees include hospital administration executives, care ward housekeepers, billing clerks, patient intake receptionists, cafeteria staff members, and hospital security workers. Although these employees are not responsible for delivering patient care, they represent a large proportion of the people employed in health care facilities. In total, support staff employees comprise over half the employees in health care provider organizations (U.S. Department of Labor, 2012).

Perceptions of Job Satisfaction in the Studied Populations

Job satisfaction can be defined as the employee's affective reaction to his work or the pleasurable response to the work or work product (Cranny, Smith, & Stone, 1992; Locke, 1969). An employee's feeling of job satisfaction is correlated to several variables including turnover intention and occupational commitment (Messersmith, 2007; Scholarios & Marks, 2004; Shaw, 1999).

On average, the population of clinicians and care provider organization support staff is predominately female. This large proportion of female staff is consistent across all types of care delivery organizations from solo practitioners to large hospital systems. In the United States, women comprise 79% of hospital employees (U.S. Equal Employment Opportunity Commission, 2005). The high proportion of females in both clinicians and medical facility support staff impacts the perceptions of job satisfaction in these care provider organization staff members. Studies investigating structural and social role theories have indicated that women employees have different drivers of job satisfaction than that of their male counterparts (Mason, 1995). Kidder (2002) has noted due to cultural expectations of nurturing behavior; women are

anticipated to exhibit high levels of organizational citizenship behaviors (Chen & Chiu, 2009; Kidder, 2002).

While variations exist, studies of the job satisfaction of clinicians have generally indicated that clinicians experience a high level of job satisfaction. A quantitative study of the job satisfaction of 96 physical therapists revealed that the research subjects found satisfaction in that their work was both interesting and challenging. The subjects also indicated that they experienced work autonomy and sufficient decision making authority which are both job characteristics that are related to overall job satisfaction (Speakman, Pleasant, & Sutton, 1996). Schiestel (2007) studied job satisfaction of 154 adult nurse practitioners. The research was conducted using the Misener Nurse Practitioner Job Satisfaction Scale (MNPJSS). The MNPJSS measures six subscales of job characteristics that are specific to nurse practitioners. The results of the study demonstrated that the nurse practitioner subjects had a high level of overall job satisfaction.

Other studies using different assessment tools reinforce that clinician populations have high levels of job satisfaction despite the stressors of the work performed (Bacharach, Bamberger, & Conley, 1991; DeLoach, 2003; Grunfeld et al., 2000). A study by DeLoach (2003) on the job satisfaction of health care clinicians investigated the perceptions of interdisciplinary team members working in hospice organizations. DeLoach used the Revised Causal Model of Job Satisfaction to measure the interdisciplinary team member's job satisfaction. The Revised Causal Model of Job Satisfaction was originally tested in a Veteran's Administration medical center but has been subsequently validated in other work environments including the military and academia. The study of hospice interdisciplinary team members showed a high level of

overall job satisfaction based on psychological, sociological, physiological, and economic factors. This high level of job satisfaction existed despite the reported stresses of working closely with terminally ill patients and their families (DeLoach, 2003).

Job stress of clinician populations and its impact on satisfaction has been well studied. In an analysis of multiple research studies, Cooper, Clarke, and Rowbottom (1999) found that while physicians experience high levels of occupational stress, they also gain satisfaction from their stressors such as exercising their technical skills and having the responsibility for solving challenging problems. In fact, their overall sense of high job satisfaction may moderate the influence of these stressors in clinician populations. A quantitative study of 882 hospital based consulting physicians found that high levels of job satisfaction protected these physicians from the negative mental health effects of job stress (Ramirez, Graham, Richards, Cull, & Gregory, 1996).

Although clinicians' high level job satisfaction may moderate the effects of stress, these practitioners are vulnerable to job burnout that can diminish satisfaction. In a study of nurse's stress regarding work-life balance, Bacharach et al. (1991) noted that job satisfaction is correlated to worker burnout. The authors found that work role conflict was a significant precursor to work-home conflict and that work-home conflict was a driver of increased work burnout. Another study on the job satisfaction and job burnout was conducted on oncology care provider employees (Grunfeld et al., 2000). The study included 621 clinicians (with clinicians defined as both physicians and allied health professionals) and 28 medical facility support staff. Grunfeld et al. (2000) used the Maslash Burnout Inventory for both clinician and medical facility support staff respondents. Grunfeld et al. found that the clinicians had a significantly higher

level of job satisfaction than medical facility support staff. However, despite having overall lower feelings of job satisfaction the medical facility support staff reported a high level of personal accomplishment.

While patient impact has been shown to be a driver of satisfaction in clinicians, this may not be the case in care provider organization information technology workers. A study of the job satisfaction and turnover intention of health care information technology staff was conducted for the Healthcare Information and Management Systems Society (Greene, 2002). Greene revealed that the perception of patient impact was not a significant driver of either job satisfaction or turnover intention. Instead, the primary drivers of satisfaction for health care information technology workers were: compensation, career growth, work/life balance, relationship with supervisor, autonomy, and corporate culture. The drivers of turnover intention were desires for better compensation, a more suitable corporate culture, a more desirable location, and financial security (Greene, 2002). These findings regarding the drivers of satisfaction of health care technology workers contrast to similar studies of clinical personnel such as nurses and physicians. Studies of clinicians have not found salary to be a strong determinate of either job satisfaction or turnover intention (Anderson, 1996; Hinami, Whelan, Miller, Wolosin, & Wetterneck, 2012; Newman, Maylor, & Chansakar, 2002; Pathman et al., 2002).

Studies of the job satisfaction of other technology workers find that the perceptions of health care technology workers are more similar to these occupational peers than to clinician populations. McMurtrey, Grover, Teng, and Lightner (2002) conducted a quantitative study of the job satisfaction of 226 information technology workers, which found that satisfaction was positively correlated to the subject's technical career orientation, sophistication of technical tools

used to complete their work and by the competence of the employee's manager. A study of 118 programmer/analysts by Goldstein and Rockart (1984) also demonstrated the correlation between the quality of managerial leadership and the information technology workers feelings of job satisfaction. Kamalanabhan, Sai, and Mayuri (2009) studied employee engagement and job satisfaction of 159 information technology workers. A strong correlation was demonstrated between the employee engagement and job satisfaction was noted and that demographic factors such as age, sex, tenure with the company, and marital status did not appear to influence job satisfaction.

Work life balance is frequently identified as a component of other technology workers feeling of job satisfaction. With the increasing emphasis on information technology as a driver of lower costs or competitive advantage, technology workers feel that they are asked to work extended overtime hours and to meet unrealistic project deadlines (Kim & Wright, 2007; Longenecker, Schaffer, & Scazzero, 1999; Moore, 2000). Studies of technology workers across industries cited difficulties in achieving work/life balance as negatively correlated to job satisfaction and positively correlated to turnover intention (Messersmith, 2007; Scholarios & Marks, 2004).

Jourdain and Chênevert (2015) studied the correlations between the workers perceptions of organizational values and absenteeism data for 358 employees of a large, multi-site, public-sector health care provider organization. The study found that both burnout symptoms and voluntary sickness absenteeism has a positive relationship to worker's perceptions of the organizational values of humanity and innovation. However, research by Shih, Jiang, Klein, and Wang (2013) indicated that the relatively high rate of burnout and job dissatisfaction of

information technology workers stems from not only from work exhaustion, but from the technology workers feelings of depersonalization and lessened sense of personal accomplishment.

Perceptions of the Meaning of Work in the Studied Populations

The search for meaning is central to the human experience. Frankl (1962) regarded the need for individuals to seek and pursue meaning as the single most driving motivation of humans. Frankl noted three primary sources which give life its meaning: work, love, and suffering.

Many of the writings on the meaning of work focus on employees with occupational tasks that are directly related to the organization's mission, for example physicians, nurses and other clinicians working in hospitals and other health care facilities (Dik & Duffy, 2009; Duffy et al., 2011; Forehand, 2000; Whorley, 1992). Studies conducted across multiple clinician populations showed that clinicians find a high level of meaning in their work which is similar to their high feelings of job satisfaction.

In a descriptive, qualitative study by Silva et al. (2011) data regarding the meaning of work was collected using semi-structured interviews with 42 night-shift nurses at a teaching hospital. Silva et al. (2011) revealed that the majority of the nurses assigned positive meaning to their work and that these nurses felt professionally satisfied. Beukes and Botha (2013) conducted another study looking at the meaning that nurses found in their work. This study used four quantitative assessment tools: the Organizational Commitment Questionnaire, the Utrecht Work Engagement Scale, the Work-Life Questionnaire, and a biographical questionnaire with 199 nurses. Beukes and Botha found that many subjects found their jobs to have meaning and

viewed nursing as a calling. This view of nursing as calling was a significant predictor of both organizational commitment and work engagement.

Finding meaning in one's work has a direct impact on the worker's performance, behaviors, and attitudes. One longitudinal research study that surveyed nearly 6,000 eldercare workers showed that employee's finding meaning in the work performed significantly reduced both employee turnover and turnover intention (Clausen & Borg, 2010). A second study of 290 staff nurses and nurse leaders found that considering the work meaningful was a primary motivator (Oztürk, Bahcecik, & Baumann, 2006). Secrest, Iorio, and Martz (2005) conducted an existential-phenomenological study of the meaning of work for nursing assistants employed in long-term care facilities. Secrest et al. found that the nursing assistants who chose to stay in that occupation found meaning in their work despite the difficult workplace environment of long term care.

In a study of oncology support staff, Cashavelly et al. (2008) noted that in comparison to the large number of studies conducted in clinician populations, there is little research published regarding how care provider organization support staff perceive their jobs. This disparity in the research leaves a gap in the knowledge of whether these support staff members find meaning in their work. It is also unclear what impact the presence or lack of job meaning has on the attitudes and behaviors of medical facility support staff. Despite the lack of research into the meaning of work of the support staff, these staff members may have frequent patient contact and impact on the quality of care and patient outcomes (Toynbee, 2003).

Perceptions of Mission Valence and Task Significance in the Studied Populations

Task significance and mission valence can be viewed as similar concepts applied at a different scale – one individual and the other collective. Hackman and Oldham (1976) stated that task significance is the employee's perception of the impact that their work has on others. They went on to clarify that the degree of perceived task significance reflects the individual employee's view of their work contribution without regard to other job characteristics such as work environment, complexity, salary, benefits, opportunity for advancement or level of authority. Wright and Pandey (2011) described mission valence as an employee's perceptions of the salience or attractiveness of the overall organization's purpose or its contribution to society. Mission valence focuses on the employee's perception of the collective good delivered by the organization and not specifically on the employee's individual efforts or contributions as does task significance.

Task significance has been widely studied in many clinician populations. In the available studies, it is shown that the employees' perceptions of task significance and mission valence are positively correlated job satisfaction. Research into specific caregiver populations such as substance abuse prevention personnel has indicated a positive association between job satisfaction and the employees' perceived task significance (Whorley, 1992). A study of job satisfaction and job characteristics of occupational therapists employed in hospitals, outpatient clinics and inpatient rehabilitation facilities found that task significance, along with feedback autonomy and skill variety showed the greatest impact on job satisfaction (Smith, 2000). Munro (1983) studied the job satisfaction of 329 employed, recent graduate registered nurses to test the validity of Herzberg's theory dual-factor theory of job satisfaction and dissatisfaction. The study

found that responsibility, defined as the significance and challenge of the task, was the most important determinant of job satisfaction with working conditions as the second most important factor in determining satisfaction. A study by DeLoach (2003) of interdisciplinary teams working in hospices found that task significance was significantly correlated to the employee's job satisfaction. However, the statistical analysis demonstrated that while the correlation existed, task significance was not a significant driver of satisfaction.

There is abundant research into the relationship between task significance and job satisfaction; however, there is limited research that directly measures the relationship of task significance to job performance. The existing studies show a range of results and conclusions. Several studies that measured the employee's perception of task significance fail to isolate it a driver of performance (Dodd & Ganster, 1996; Parker & Wall, 2006); however, a study by Grant (2008) demonstrated that task significance has a causal effect on job performance. Katz (1978) posits that the influence of task significance may diminish over the duration of the employees' organization tenure and that the influence is especially high in employees who are new to the organization.

There is limited research available on the perceptions of task significance by care provider organization support staff or by information technology workers. Tasks performed by medical facility support staff provide essential services for patient care and are drivers of patient satisfaction. As an example, housekeeping tasks are carefully noted by patients and studies have shown the additional ward housekeeping staff increases patient satisfaction (Hurst, 2010). Cashavelly et al. (2008) conducted a study of medical facility support staff in an oncology clinical center using the Maslash Burnout Inventory found that the medical facility support staff

felt their roles had high task significance. However, the respondents indicated that they were often overlooked and undervalued by clinician staff. The respondents also indicated the personal value they felt when receiving praise and recognition from clinicians, administrative supervisors, and patients (Cashavelly et al., 2008).

While their tasks clearly provide contribution, the available research demonstrates that support staff employees may perceive their job's task significance differently than clinician employees. Even when support staff members perceive their role to have high task significance that perception may not lead to job improved performance. A study by Hirschfeld, Schmitt, and Bedeian (2002) of clerical employees found that employees with high feelings of task significance had higher absenteeism than peers with lower feelings of task significance. The authors theorized that the clerical staff with high feeling of task significance may use additional absenteeism to compensate themselves for their perceived lack of extrinsic rewards for their workplace contribution. A quasi-experimental study conducted with hospital cleaning staff looked at ways to reduce absenteeism and found that allowing employees additional control of their work and providing better support for the specific work tasks did reduce absenteeism in the short-term (Michie, Wren, & Williams, 2004).

Mission valence shifts the focus from individual tasks to the organization's collective purposes. Rainey and Steinbauer (1999) postulated the more that people regard the organization's mission as engaging, attractive, and worthwhile to society the greater the support the organization will attract. This support includes prompting people to join the organization as employees or volunteers and motivating them to perform well to deliver the organization's mission.

Working within an organization that holds high mission valence for the employee can sometimes be considered working in one's calling. Working in an organization that the employee regards as having a high mission valence is correlated to his affective feelings of job meaning, job satisfaction, and general life satisfaction (Wright & Pandey, 2011). In a longitudinal study of 110 medical school students, conducted by Duffy et al. (2011), a moderate positive correlation was found between working in what one perceived as their calling and viewing their life as meaningful. A study of 2,000 nurse anesthetists found that when the organization's mission statement reinforced the significance of their work it was a consistent predictor of job satisfaction (Meeusen, van Dam, Brown-Mahoney, van Zundert, & Knape, 2011).

The relationship of employee perceptions of mission valence to organizational performance has been studied in health care provider organizations. Multiple studies of have found that the care provider organization's mission can increase organizational performance through improved employee motivation and performance (Bart, Bontis, & Taggar, 2001; Bart & Hupfer, 2004; Bart & Tabone, 1998; Forehand, 2000). Benson, Weech-Maldonado, and Gamm (2003) wrote that care providers seek to deliver value by lowering cost, improving the quality of care and increasing the worth they provide through increased trustworthiness and knowledge. Aligning the mission to these goals provides an opportunity to inspire employees to achieve these objectives.

However, there is comparatively little research available regarding the perception of mission valence by either medical facility support staff employees or health care information technology workers. A cross-sectional survey of 168 public sector employees found that

understanding the relevance of the employee's work was positively correlated to the employee's perception of the organization's mission valence (Wright & Pandey, 2011). Considering the scarcity of research on the emerging concept of mission valence, its impact is not fully understood.

Summation

Job satisfaction, job meaning, mission valence, and task significance provide a theoretical foundation to understand how workers perceive their work. These four theoretical concepts are related and the interrelationships are not fully understood.

Health care technology and technology workers are increasing in importance due to the demands of cost containment, regulatory reforms, improving the quality of patient care, and meeting market changes. Research comparing the perceptions of health care technology workers to clinicians, health care support staff, and other technology workers demonstrates both differences and similarities in how these four group perceive job satisfaction, job meaning, mission valence and task significance.

Chapter 3. Research Methods

This exploratory study investigated the perceptions and experiences of health care technology workers with regard to their feelings of task significance, mission valence, work meaning, and job satisfaction. A heuristic inquiry research method was selected to allow research participants to discuss their perceptions and experiences. To explore this, topic non-structured phenomenological interviews were conducted with a purposefully selected sample of health care technology workers.

Research questions

This research study sought answers to two questions.

RQ1: What are the perceptions of health care technology workers with regard to their feelings toward their organization's mission valence and the significance of the work tasks that they perform?

RQ2: What are the perceptions of health care technology workers with regard to the meaning of their work and their overall job satisfaction?

Methodology Overview

Qualitative research, which followed a process heuristic inquiry, was selected to explore how research participants working in health care technology roles perceive and experience their work. Patton (2002) wrote that qualitative research is an interpretive inquiry process that allows new patterns to emerge. It allows the researcher to understand both the characteristics of a situation and the meanings ascribed by participants. This research was designed to explore how individual research participants experience and perceive the complex relationship of four concepts: mission valence, task significance, job satisfaction, and job meaning.

This research followed the three-phase framework established by Moustakas and Douglass (1985) for heuristic inquiry. In heuristic inquiry, the first phase is immersion of the researcher followed by the phase of acquisition of data. The final phase is realization, which focuses on the synthesis of the acquired data into new knowledge (Douglass & Moustakas, 1985). Methods are presented organized into these three phases.

Immersion Phase

While the qualitative approach allows for in depth study of the research subject's thoughts and experiences, it also places the researcher intimately in the subject studied. The researcher's skills, experiences, competence, and rigor affect the outcomes of the research (Patton, 2002). Douglass and Moustakas (1985) stated that heuristic inquiry allows a "passionate and discerning personal involvement in problem solving, an effort to know the essence of some aspect of life through the internal pathways of the self" (p. 39).

Heuristic inquiry demands that the researcher be personally engaged in the topic of study. Moustakas (1990) stated,

> Heuristic inquiry is a process that begins with a question or problem which the researcher seeks to illuminate or answer. The question is one that has been a personal challenge and puzzlement in the search to understand one's self and the world in which one lives. The heuristic process is autobiographic, yet with virtually every question that matters personally there is also a social - and perhaps universal – significance. (p. 15)

A researcher explores his personal experiences in the epoché stage. Patton (2002) described epoché as the first step when the researcher seeks to understand his personal bias and preconceptions that may influence his analysis. In epoché, the researcher acknowledges the potential for biases and seeks to address it using a process of reflexivity to explore his own experiences, beliefs and any internal preconceptions (Douglass & Moustakas, 1985). To identify

and remove the researcher's personal judgments, a process of epoché was used throughout the study. The epoché stage was a stage of reflexivity where the researcher explored these potential biases and seeks to actively find any others. Identifying these biases was essential to finding areas where the research was vulnerable to being shaped incorrectly. While epoché began at the outset of the research, it continued throughout the study as the researcher consistently checked for bias and preconception. In this study, the researcher had experience as a clinician and with health care technology workers. The researcher needed to consistently check that preexisting biases were not shaping the analysis process or outcomes.

Epoché and the role of the researcher. The researcher, while not a health care technology worker, has over a decade of experience in health care and has worked extensively with the health care technology workers. The researcher's job experience includes several years planning the technology strategy for one of the nation's largest health care provider organizations. In this role, the researcher uses the overall business strategy to identify and assess health care technology projects that support the business goals. The researcher is accountable for the review, planning, and governance of $200M in technology spending each year. The researcher formerly worked in a clinician role providing trauma counseling services patients in emergency room and clinic settings.

This professional experience, while informative, also came with the potential for assumptions that could incorrectly impact research and conclusions. The researcher's experience is in primarily one health care provider organization. The researcher's experience could not be considered representative of all health care provider organizations or of all health care technology workers.

The researcher started with a search for obvious biases based on her experience. The researcher works for a large employer with over 150,000 employees and more than 600 care delivery work sites. This is not representative of the experiences of all research participants who worked for organizations of varying sizes. The researcher's company invests heavily in internal branding to inform its employees about the company's mission and the quality of its patient care. The researcher cannot assume that all health care employees or health care technology workers are given similar exposure to the mission and quality of their company. It is unknown whether these types of internal branding messages are consistent across many or all care provider organizations. In the researcher's company, nearly all technology employees have completed an undergraduate degree and advanced degrees are very common. This level of educational attainment may not be reflected in other health care technology organizations. Finally, the researcher's primary contacts in the technology organization are executive leaders. The experiences and perceptions of this limited group of executives would not be representative of all healthcare technology employees.

Acquisition Phase

To conduct this exploratory study, a qualitative, phenomenological interviewing technique was selected to allow the participants to share narratives and personal stories, which illuminate their experiences and feelings of task significance, job meaning and job satisfaction, and organizational mission valence. The interviews were non-structured and asked the participants to explore their experiences regarding these concepts. During the interviews, the researcher maintained notes to capture observations of the participant reactions, inflections, and observable emotional responses.

To continue with the reflexive activity of epoché during the acquisition phase, the researcher sought to actively work to bracket her own opinions away from those of the research participants. Moustakas (1990) asked the researcher to clear a space with herself to allow her to see what the research truly reveals. The researcher made use of several techniques outlined by Moustakas including: allowing time for quiet reflection before each interview to clear a space to listen each respondent, the use of a personal journal to identify existing biases, and taking time away from the research for personal reflection to uncover any hidden biases. The combination of these techniques allowed the researcher to find and bracket any personal biases away for the content and analysis of the interviews. This continuing process of self-exploration was used to continually examine the coding and categorization of data and to ensure it was reliably and validly assessed.

Target population and sampling process. The study gathered information through in depth, phenomenological interviews with research participants. The study used a purposeful sampling method. Patton (2002) described purposeful sampling as follows:

> Cases for study (e.g., people, organizations, communities, cultures, events, critical incidences) are selected because they are "information rich" and illuminative, that is, they offer useful manifestations of the phenomenon of interest; sampling, then, is aimed at insight about the phenomenon, not empirical generalization from a sample to a population. (p. 40)

The study participants were identified using a network convenience sample. Bryman (2012) defined a convenience sample as a non-probability sample selected due to its availability to the researcher. Bryman noted that convenience samples may not be generalizable to the full population. However, convenience samples are useful to gather data and that convenience sampling plays a more prominent role in research than is sometimes thought.

For this study, the convenience sample was selected to provide maximum variation. To eliminate possible researcher bias or preconceptions, participants who have been supervised by the researcher were eliminated from the study.

The researcher asked colleagues in three non-profit care provider organizations to recommend suitable participants. The three care provider organizations were selected to provide variation in organization size, location and history of religious affiliation. Organization one is a large non-profit care provider organization with hospitals and clinics nationwide. It has no history of religious affiliation. Organization two is a regional health care provider with care locations in three states. It has a history of religious affiliation, but has reorganized as a secular non-profit. Organization three is a non-profit hospital system serving a single county. Organization three has no current or past religious affiliation.

The researcher shared with the referrers the goals of the study and the research participant criteria. Referrers were informed that not all potential participants would be contacted to participate in the research. The referrers suggested a total of 23 potential participants at three care provider organizations. The researcher contacted 11 potential participants and 9 agreed to join the study and to sit for interviews. After completing the preliminary coding of the 9 interviews it was determined that saturation and redundancy had been reached and no additional research participants were required.

This sample size aligns with Creswell's (2009) suggested range of 6 to 10 sample units for phenomenological research. Lincoln and Guba (1985) recommended sampling until the point of saturation is reached and no additional information is gathered from additional samples.

Each of the study participants met all the following six sampling criteria:

- full-time;
- senior professional;
- non-executive;
- employees of the technology business unit;
- of a non-profit health care provider company;
- work experience includes a minimum of five years in health care technology and a minimum of 3 years with their current health care employer.

Full time. All research participants met the employing company's definition of full-time employment. This sample criterion eliminated contractor and contract-to-hire staff members. Staff members in the contractor classification may have a different perception of the employer than permanent staff members.

Senior professional. To successfully participate in the interviews research participants needed to be able to understand their company's mission and be able clearly articulate their own feeling regarding mission valence and task significance. To ensure fluency in these topics, research participants were limited to senior professional technology workers. Sampling focused on technical and business architects, senior requirements analysts, and project and program managers.

Non-executive. The sample included only employees who were not executives. Executives spend more time on managerial and strategic work and less time on developing and deploying technology. It is assumed that executives would have different perceptions of the organization's mission valence and different drivers of satisfaction.

Information technology business unit. This was defined as the staff members who report to the company's most senior technology officer in the organizational hierarchy. Example titles for this technology officer include Chief Technology Officer or Chief Information Officer. Research participants could report to the most senior technology officer directly or through varying levels of intermediary managers. This sampling criterion eliminated staff members who work primarily in other job functions but support technology initiatives as subject matter experts or user testers. The sampling criterion existed to focus the study on the perceptions of health care technology workers themselves as opposed to the perceptions of all health care employees regarding health care technology.

The participants worked in significantly different work environments. Some research participants worked frequently in a care delivery work site. These participants included those staff members involved in the installation of clinic hardware, the deployment of applications, and the gathering of user requirements from clinicians. Other participants worked in an administrative work site such as a traditional office environment remote from the care delivery setting. Research participants whose health care technology work was remote from patient care would include software coding and testing, data center, and infrastructure employees. The sample sought a variation in this attribute because employees who work at a care delivery work sites versus administrative work sites may have significantly different perceptions of the organization's mission.

Non-profit health care provider companies. Health care provider companies have the care of patients as a primary objective, though they may also have other related objectives such as research and or education. This study focused on non-profit care provider firms, which are

secular, but may have a legacy of religion-affiliation. The non-profit criterion was included because this research focused on mission. For-profit care provider organizations and academic hospitals may have dissimilar missions and were excluded from this study.

Employees of technology companies that provide applications and software to hospitals were excluded from the sample. This included companies such as Epic Systems Corporation, Cerner Corporation, and GE Healthcare. Also excluded are employees of healthcare consulting firms such as Deloitte Consulting, Accenture, and CTG Health Solutions. Consultancies and software companies certainly play an important role in health care technology; however, these companies have a much different mission than a care provider organization. As mission is a key topic of the study, employees of these companies were not suitable research participants.

Work experience. The sampling criteria specified that all research participants have a minimum of 5 years of health care technology experience. Furthermore, it required that all participants have a minimum of 3 years of tenure with their current health care employer. Many of the research participants greatly exceeded these minimums. By limiting the research participants to full-time employees with several years of experience and tenure, this study's participants have had ample time to develop their thoughts and perceptions regarding working in health care technology and the mission of their current company.

Solicitation of research participants. The referrers suggested a total of 23 potential participants and the researcher contacted 11 potential participants. The 11 potential participants contacted were randomly selected from the pool of referred participants using the RAND function in Microsoft Excel.

Potential participants were contacted via email and invited to participate. All emails to potential participants requested their participation and explained the voluntary nature of the request. All emails included the Institutional Review Board required explanation of confidentially and voluntary participation. The solicitation email informed potential participants that the interview would require 45 to 90 minutes and that the researcher might have clarifying questions after the interview.

Seven of the 11 potential research participants responded to the first email request. A second email was sent 7 days later to the 4 non-respondents. Two additional participants responded to the second solicitation email. Both emails included instructions for the recipient to opt out of future emails; however, no potential subject requested to be removed from further contact with the researcher.

Data Collection

Research was conducted in the format of phenomenological interviews. Roulston (2010) noted, the "purpose of this kind of interview is to generate detailed and in-depth descriptions of human experiences" (p. 16). The researcher developed a list of queries to prompt the conversation; however, the interviews were not structured. While the researcher had a set of potential questions and prompts developed, the interviews were conducted to allow the research participants to share their experiences through conversation with minimal guidance. The interview questions and prompts were open-ended and follow up queries were used to allow the research participant to discuss more fully their perceptions or experiences.

Interview prompts were grouped into three categories. The first category was questions about the participant's job history in health care technology. Responses to these questions were

used to uncover the participant's feelings of task significance. Questions in this category included asking the participants to describe their current job and work tasks. The second category was questions about the participant's job satisfaction. Job satisfaction queries included asking about the most and least satisfying aspects of the participant's work in health care technology. The third category of questions asked about the participants understanding and attitudes regarding the company's mission. Participants were asked to describe the mission, their feeling that their job contributes to the mission, and any impact the mission has on their job satisfaction. The interview prompts are included in Appendix A. Validity of the protocol was established through a review by several individuals with content expertise and experience with interview processes. Following validation, a pilot process involving two interviews was conducted to support the reliability of the interview protocol. These pilot interviews allowed the researcher to more accurately estimate the time required for the interview. The pilot interviews also allowed the researcher to continue to practice the heuristic inquiry techniques to identify and bracket internal biases.

Procedures. All interviews were conducted in person in four cities and two states. To provide maximum convenience to research participants, the researcher traveled to the meet the interview participant at a location of their choice. Some interviews occurred at the participant's work location and others were conducted in more neutral locations such as a quiet coffee shop. Interviews conducted at the participant's work location were conducted in a private conference room or office. The interview locations were removed from the participant's peers and supervisor. Before each interview the researcher set aside an hour to clear mental space in

preparation for the meeting. After each interview the researcher continued the process of reflexivity though use of a journal.

Interviews lasted 70 minutes to 90 minutes. All interviews were recorded using two devices: a digital voice recorder and an iPhone. All recordings were transferred and stored on the researcher's computer and protected with the use of passwords and firewalls. After the quality of the transfer of the file to the computer was validated, the recordings were deleted from both the digital voice recorder and iPhone. The audio file was sent to the transcriptionist using a secure, password protected file share location. After the transcript was received, the researcher audited file by reading through the file and listening to any section that was unclear or potentially incorrect. After the transcript was validated, the audio files were deleted from the researcher's computer.

Human Subjects Considerations and Institutional Review Board Review

The research was reviewed by the Institutional Review Board of Pepperdine University to ensure that the Human Subject Protections were appropriately followed. The study qualified as Exempt research as it involves adult participants and posed minimal risks to the individual who agreed to participate (Appendix B).

Each individual invited to participate in the study was informed that their participation was voluntary and that they could withdraw at any time without consequence. Participants were also informed that no remuneration would be provided for their participation. The participants were informed about the information to be collected and that their responses would not be individually identifiable in the final document.

Several safeguards were put into place to maintain the confidentiality of research participants. The individual participants were not identified to their employer organization and the participants name or employers are not identified within the final documents. Both data collection and data reporting maintained the confidentially of the participant's responses beyond the researcher and the transcriber. All data and identifying information was stored in password-protected files. Transmission of files between the researcher and transcriber used appropriate encryption. The contract terms of the transcription service stipulated that information is confidential and cannot be copied, shared, or disclosed. Audio files were deleted from both the recording devices and the computer once they were no longer needed.

These safeguards coupled with the anonymity of responses in all published documents allowed the research participants to answer without concern that honest participation could result in negative consequences.

Realization Phase

The final phase is of heuristic inquiry is the realization phase. In this phase, the researcher takes the data gathered during acquisition phase and analyzes and synthesizes it into new knowledge (Douglass & Moustakas, 1985). During interviews, the researcher maintained notes to capture observations of the participant reactions, inflections, and observable emotional responses. All interviews were recorded and transcribed. Both the interview transcriptions and the researcher's field notes were considered in the analysis process. Throughout this process the researcher continued use of a journal to recognize and explore potentials biases.

Analysis process. This study borrowed from the phenomenological tradition to collect data through in depth interviews. To analyze the data, the researcher used the six-step data analysis process as described by Creswell (2009). Following are the six steps:

1. Prepare and organize the data
2. Read all of the data to get a broad understanding of its meaning
3. Begin a detailed analysis of the coding process
4. Follow the coding process to generate a description
5. Determine how the description and themes will be represented
6. Interpret the data

To prepare the data, all interview recordings were transcribed using a professional transcription service. Next, the interview transcriptions and interview observation notes were read in their entirely to begin to understand the content and meaning of the data collected. After reading all the interview transcripts and notes, the researcher began to develop an a posteriori coding schema based on the initial review of participant interviews. The transcriptions and researcher observational notes were loaded into a qualitative analysis software tool (HyperResearch) and the code book was developed. Coding of passages within the transcripts and notes were conducted multiple times and codes grouped into thematic patterns. In the grouping, codes were modified or eliminated as patterns emerged. As recommended by Patton (2002), the researcher continued epoché throughout the content analysis process searching for any personal biases that may influence categorization and analysis. To assess whether bias was minimized, a peer-reviewer carefully reviewed the code book and coded transcripts to ensure consistency of interpretation.

Study Validity

Creswell and Miller (2000) noted that different terms are used to address qualitative validity, including trustworthiness, authenticity, and credibility. Creswell (2009) posited that qualitative validity is established by the procedures the researcher institutes to check the accuracy of the findings. He outlined eight procedural alternatives to establish validity and suggested selecting among the alternatives to incorporate validity strategies into the research.

For this study, the validity procedures include triangulation, clarification of bias, thick descriptions and peer review. The researcher triangulated data from the interview transcripts, observation notes, and personal reflections on the interviews. To clarify bias, the researcher used the epoché techniques suggested by Moustakas including: quiet reflection and a personal journal to identify existing biases. This process of reflectivity was used throughout the research process to clarify and confront bias. The researcher used a rich, thick description to convey the findings and to assist other researchers. Finally, the coding of the transcripts was reviewed by a peer researcher to identify any inconsistencies in the coding of data.

Summary

This exploratory study used heuristic inquiry to investigate the perceptions and experiences of health care technology workers with regard to their feelings of task significance, mission valence, work meaning, and job satisfaction. In this chapter, the proposed research design and research methods are described including the sampling criteria, the interview protocol, the data collection procedures, and the data analysis process.

Chapter 4. Results

This exploratory study investigated the perceptions and experiences of health care technology workers with regard to their feelings of task significance, mission valence, work meaning, and job satisfaction. This research study sought answers to two research questions.

RQ1: What are the perceptions of health care technology workers with regard to their feelings toward their organization's mission valence and the significance of the work tasks that they perform?

RQ2: What are the perceptions of health care technology workers with regard to the meaning of their work and their overall job satisfaction?

To collect the data for this study, non-structured phenomenological interviews were conducted with health care technology workers. The content of the interviews was developed by asking the nine research participants to describe their perceptions of their work and organization. This allowed the research subjects to articulate their feelings and perceptions of the organization's mission valence, the significance of their work tasks, the meaning of their work and their overall job satisfaction.

Content analysis of the data resulted in to ten emergent themes which were grouped into four categories. First, demographic information is presented about the participants and their organizations. Next the thematic analysis is presented grouped by each category. Narrative about each theme including direct quotes is included.

Study Participants and Represented Organizations

Each of the nine study participants met the specified criteria. They were all full-time, senior professional, non-executive, employees of the technology business unit of a non-profit

health care provider company. All interviews were conducted in person within an eight week time period in January and February, 2016.

The nine non-executive senior professional participants represented three not-for-profit, secular hospital systems. Each were in the most senior role within their job family at their employing organization (Table 2). Table 3 shows the job tenure and technology experience of the research participants. To meet the selection criteria, a participant's work experience was required to include a minimum of five years in health care technology and a minimum of 3 years with their current health care employer.

Some participants had worked for their current employer for their entire professional life and had tenures in excess of 20 years. These long tenure employees transitioned to technology professional roles after working in other job functions within their employing organization.

The study sought maximum variation in the sample the job histories and experiences of the of research subjects. The sample was constructed to include subjects with clinician experience, care provider support staff experience, and no prior experience at a patient care site. Prior clinician roles included: microbiologist, lab worker and medical technician. Prior support staff roles included medical receptionist and cafeteria worker. Research subjects without prior clinician or care site support staff experience has a variety of roles including web developer, teacher and astrologer.

Table 2

Research Participant Job Titles (N=9)

	Number of Participants
Director	6
Principal Program Manager	1
Principal Technical Architect	1
Senior Systems Analyst	1

Table 3

Research Participant Tenure and Experience (N=9)

	Current Organization	Technology Experience (All Organizations)	Current Role
<3 Years			3
3-5 Years			4
5-10 Years	3	1	2
10-20 Years	2	6	
20-30 Years	3	2	
> 30 Years	1		

Other research participants with shorter tenure at their employing organization had variety of job histories. Three had worked as health care providers or health care technology worker in other companies before joining their current employing organization. Table 4 shows the job experience of each research participant.

Table 4

Research Participant Work Experience (N=9)

	Number of Participants
Clinician Experience	2
Care Provider Support Staff Experience	3
Both Clinician and Care Site Support Staff Experience	1
No Clinician or Care Site Support Staff Experience	3

The study also sought maximum variation in the sample with regard to the research participants' staff management responsibilities. The sample includes variation in number of direct reporting staff and total organizational span of control. Two of the participants had no other employees reporting to them. Four of the research participants directly managed staff, but did not have other managers reporting to them. Three of the research participants managed direct reports who managed subordinate staff members. The research participants managed between zero and six direct reports and had a total organization span of control from zero to 100 employees.

Table 5

Research Participant Managerial Responsibility

	Number of Direct Reports	Total Number of Subordinate Employees (Span of Control)
Participant 1	5	5
Participant 2	2	2
Participant 3	4	4
Participant 4	0	0
Participant 5	2	60
Participant 6	4	100
Participant 7	4	90
Participant 8	0	0
Participant 9	6	6

This study was conducted in three not-for-profit, secular hospital systems. The hospital systems were selected to have variation in geographic scope and organization size. The research settings varied both in the number of care delivery locations and in the number of employees and physicians. The variation of organizational size demographics of the three hospital systems is shown in Table 6.

Table 6

Demographics of Care Provider Organizations Represented (N=3)

	County Hospital System	Regional Hospital System	Multi Region Hospital System
Clinics and Hospitals	7	270	660
Employees	17,000	55,000	180,000
Physicians	2,500	10,000	18,000
Research Participants	2	5	2

Summary of Thematic Analysis

Content analysis of the data collected resulted in four broad categories of research participant perceptions. These categories are perceptions of the organization's culture, perceptions of the organization's mission, perceptions of interactions with physicians, perceptions of contribution. Within these categories, eleven themes emerged. Table 7 shows outlines the categories and themes.

In the subsequent sections, each category is discussed, and the thematic analysis is presented. Narrative about each theme is included with including direct quotes from the research participants.

Table 7

Categories and Associated Emergent Themes

Category	Emergent themes
Perceptions of the Organization's Culture	1. Staff members police the cultural norms 2. Culture contributes to employee acquisition and retention 3. The culture fosters warm coworker relationships
Perceptions of the Organization's Mission	4. Positive perceptions of the organization's mission of patient care 5. Onboarding connects employees to the patient care mission 6. Perceptions of proximity to the mission
Perceptions of Interactions with Clinicians	7. Health care technology workers feel excluded by clinicians 8. Physicians are believed to have a negative view of technology 9. Physicians resist adopting new technology
Perceptions of Contribution	10. Contribution was not defined only as patient care 11. Identification and contribution of a unique gift

Perceptions of the Organization's Culture

Three themes emerged in the participants' responses regarding their organization's culture. These themes are, that staff members police the cultural norms, that culture contributes to both employee acquisition and retention, and that the culture fosters warm coworker relationships.

Emergent theme one: Staff members police the cultural norms. All research participants spoke positively about their perceptions of their employing organization's culture and felt it was important to protect and support that culture. One participant stated simply, "This is probably as good as you're going to find in terms of an organization and the way they treat people." Another noted with equal clarity, "This organization is a really good thing."

Several research participants discussed how the culture was maintained through employees monitoring adherence to culture norms. Participants noted that the organizational culture was self-policing and if a colleague displayed behaviors which were outside of the cultural norms, the participant would take ownership of discussing it directly with that person. These research participants noted the importance of assisting both peers and subordinates in aligning behaviors to cultural norms. Policing for adherence to cultural norms was regarded a beneficial to both the employee and the organization.

One research participant described her views on the emphasis she placed of coaching subordinates on the cultural norm of respectful behaviors. She noted that staff members who are unable to comply with the culture may need to look for other employment.

> One of the things that's very important in our culture is to treat people with respect. That something that's valued here in this organization, and so if there is an incident where somebody is being disrespectful somebody usually talks to them, about that because, we all want to think about how I would like to be treated. And that's an important item in this culture….It's not to say, though, that we're a total consensus-driven organization because one of the things that we, as an organization, support is getting people training in the crucial conversations, you know. There's a way to have conversations that can be difficult, and there's a way to do that and still be respectful of other people's dignity and their value. And that's what we want to promote.
>
> I'm serving the person because we want people to grow and mature, and we want to retain people. And if they're not acting in an appropriate way they may not realize or they may not know what they don't know. And I look at it as it's a growth opportunity for a person to have the conversation with them, but there's the other half of it that the conversation is implied, or sometimes you have the conversation that too much more of that behavior is going to be career limiting in our organization. So, you know, there's a couple different sides to that coin. We want to stay within the bounds of our culture. If you continue to act in a way that's outside of that, you could find yourself at some point looking somewhere else.

Coaching on the cultural norms is not limited to the manager/subordinate relationship. Another participant told the story of ongoing coaching she provided to a peer who she regarded

as struggling to fit the organization. Her goal as a peer coach was to assist her coworker in behaving more in accord with the organizational culture.

> If she was in a meeting, and I heard her say something that felt like it was a little off to me, then, I'd talk to her afterward and say, "look, , there might have been a different way to handle that, because people don't really react to that so well. Maybe we could have tried this." And she's like, oh, you know, that is a good idea, and then she would do that. So just a lot of coaching.

Another research participant noted that employees who are initially resistant to the cultural norms can find that they are able to align their behaviors to the norms of the organization. New employees recognize the organizational norms and shift their behaviors to comply.

> We just had a new guy start, a director start and the first thing he said to me is, I'm not warm and fuzzy. And he's probably been on the job two months now. I had a one-on-one with him yesterday and he said, you're all rubbing off on me. I'm getting warm and fuzzy. And, like, you know, I think that it's contagious, right? I think that kindness is contagious.

Emergent theme two: Culture contributes to employee acquisition and retention. Research participants noted that the culture was an important part of employee acquisition and retention. Current employees recruit peers to the organization based in part on its culture and values.

> We get a lot of people that come to us because somebody else is already here and asked them to come. And told them what it's like to work <here>, what's like to work in IT. We get a lot of referrals.

Another research participant noted that he recruited a significant part of the staff members in his organization through employee referrals which centered on the organization's culture. The research subject noted that referrals stems in part from the organization's mission but more significantly from the cultural values of how employees should be treated.

> A bit cheesy, but it really is about the mission and values. I think a lot of folks gravitated. It's kind of a joke because when we formed my environment team, my infrastructure team, one of our first hires was from a healthcare system back on the East Coast. He was looking for something here. He came to us and we had a team of one. We have hired so many people that worked for his former healthcare system because of our mission and values, and the way we treat our employees. They all talk and they know what a great company it is to work for. We poached from them definitely. Not intentionally, but I would say we probably hired at least a dozen of the folks that used to work for them.

Finally, participants observed that the organization had numerous employees with many years of tenure in the organization. The research participants noted that many employees who felt a strong cultural fit decided to stay with the organization for the remainder of their career. Research participants recognized that a cultural fit was essential to an employee's organizational commitment.

> If they come in and they find that they fit with the culture that people tend to want to stay here. I mean the person that I replaced had been here for 30 years. …I think if people are a good fit for the culture they tend to stay a long time.

> People work their way out because they don't fit. Generally that's just a symptom of some other, you know, something else going on with them that's going to eventually make them make a change. Because I think people understand. They don't have to be here very long to understand what's acceptable and what isn't. I think they realize pretty quickly if they're going to go for it or not,

Emergent theme three: The organization values warm coworker relationships. All participants noted that they felt their culture placed importance on the interpersonal relationships of peers and coworkers. In fact, coworker relationships were important to their overall views of their employer and its culture. Many participants felt that having such positive coworker experiences was exceptional in the workplace.

> In the 25 years that I've been here, there's probably two, maybe three people if I never saw again, that would be okay, but that's a pretty darn good ratio when you think about who you've run into in the last 25 years, don't you think?

> I would hate to go to a company where the people were miserable, you know. That's really not the case here, you know. People here are, you know, for the most part they're happy and they're willing. People are willing to help each other.
>
> I love the people I work with. I've always felt respect…. I see it every day, and I see it between our teams and our leaders, and I want to work for an organization where they care about you as a person.
>
> And the work ethic is just unbelievable to me. I mean, I think that's an IT thing. I think we're all overachievers, but honestly. But people work day and night if that's what they need to do to do the right thing. And I love the people. That's one of my favorite things.

Perceptions of the Organization's Mission

Research participant's perceptions of the organization's mission form the second category. Three themes emerged in the participants' responses regarding their organization's mission. These themes are, the positive perceptions of the organization's mission of patient care, that onboarding connects employees to the patient care mission, and perceptions of proximity to the mission**.**

Emergent theme four: Positive perceptions of the organization's mission of patient care. Research participants expressed both an understanding of their employing organization's mission and high feelings of mission valence. Research participants clearly understood the mission as patient care. As one participant explained the organization's mission "the patient is our centerpiece." Another research participant noted, "it always, for me, goes back to the patient and what we're trying to accomplish here."

Research participant's felt that their technology work played a valuable part in the mission to care of patients.

> For me, it's really about the patients. It's really about the patients.… I mean, I've been in the hospital many, many times and, you know, that's a tough enough time in someone's life and to not be bothered with your poor

> clinician that's having a hard time with a computer system … So it's all about the patients for me, it really is.

Several research participants stated that the organization's mission was the determinant of why they chose to stay with their employer.

> I think people are here for the mission. I really don't think people are here for the money. Because you could make more money someplace else, right? I do. I believe that the social mission is awesome. That we're a nonprofit. That we subsidize, you know, healthcare for people that we actually go out and do Health Fairs. You know, I just think that's amazing. I think it's amazingly wonderful, right?

Emergent theme five: Onboarding connects employees to the patient care mission.

Research participants noted that establishing the importance of the mission was part of the employee's cultural inculcation. Participants also noted that reinforcement of the mission's valence was ongoing and important.

> I do think as part of our on-boarding process, we really strive to teach them…the mission and values and we try to draw that parallel all the way down to the patient. I think in our leadership meetings and things of that nature that we have with the staff, we always try to draw parallels to that. I know as a leadership team, we're very focused on, you know, community service and things of that nature. We always try to factor that in, especially when we're together as a group. We try to do, you know, community service type events to really reinforce that. That's what we're all about here.

Managers of staff stated that their organization consistently worked to assist employees in understanding the organization's mission. Care site tours, patient interaction, and speakers were considered important touchstones for staff members whose daily work is removed from the care provider location.

> We're already doing a lot to help people feel connected to our mission. Like we do every month we say anyone in this building can go do a tour next door at the hospital. A lot of people in this (corporate IT) building don't do anything with healthcare really. So every month you can over there and do a tour. This is the ICU. This is what you're processing those invoices for, this is what you're paying for. These incubators right here for these babies …

> We do mission drives and all kinds of things that help people and we do the reflections in front of every meeting. We have people come from the hospitals and speak at different, quarterly meetings or whatever. We really try to integrate IT with our mission.

Emergent theme six: Perceptions of proximity to the mission. Research participants were thoughtful in how they viewed the proximity their tasks to the patient care mission. Many participants viewed their tasks as far removed from the patient. However, even research participants who felt far removed from the care of patients felt their work responsibilities had high task significance. These research participants were able to tie their work tasks to supporting patient care even though they felt their work tasks were actually far removed.

> I feel like I support it. I mean in actuality, I'm really far removed, but I do feel like I support it and I do feel like putting this electronic health record in is going to help our doctors, our nurses, our patients achieve better outcomes. I do feel that and so I feel like oh, we're doing something that's good.

Another research participant also noted that they were far removed from patient care; however, they contextualized their task significance as support of the care site support staff and clinicians. These research subjects saw their tasks as part of the broader concept of providing patient care.

> I'm far removed from the patient. I mean really in terms of how I help patients and how I help our caregivers it's several steps removed in terms of like I helped to bring them up on automation that's going to make their job easier. … These days medicine is so complex that people can't hold everything in their head. I look at it as I'm part of a bigger, you know, organization. I don't directly get involved with patient care. I look at as I helped people that are involved in patient care to make their jobs easier. … The electronic health record impacts probably just about every department in the hospital, except housekeeping. So my clients are the people in the dietary office. Our clients are the people in the lab or the x-ray or pharmacy. They're nurses. They're doctors, surgeons in the OR, all of the people that work in hospitals. Really the EHR, like I said, I think it impacts just about every department in the hospital that I can think of. And come to think of it if we have a bed tracking system, I think it impacts housekeeping, you know, so it's really far reaching.

While all research participants felt the mission of their organization had a high valence, proximity to patient care was noted as driver of how deeply the individual felt the connection of their tasks to the organization's mission.

> Yeah, there's definitely a range and I think a lot of it is how close you are to patient care. Like the closer you are, the more you feel like it's a mission than like folks in maybe in the Finance Department or the Project Management Department are less connected.

While research participants had feelings of task significance from supporting the patient care mission, they also compared their contribution to the contribution of clinicians whose tasks were immediately proximate to patient care. Those comparisons often decreased the health care technology workers feeling of task significance. Health care technology workers viewed their contribution unfavorably when compared with clinicians.

> I remember one time I had to speak after a neurosurgeon. … he gave his presentation, this is what we're going to do for kids with concussions and had this whole big thing with football programs and he gave this big presentation and then I was up next to talk about our EHR (electronic health record) rollout schedule and I was like, I felt totally like mine was so meaningless compared to taking care of those patients.

Perceptions of the Interactions with Clinicians

Three themes emerged in the participants' responses regarding their interactions with clinicians generally and physicians in particular. These themes are, health care technology workers feel excluded by clinicians, physicians are believed to have a negative view of technology, and physicians resist adopting new technology. Interactions with clinicians shaped many of the research participants' feelings of job satisfaction.

Emergent theme seven: Health care technology workers feel excluded by clinicians. Several participants recounted tales of feeling excluded or unappreciated by their clinician partners. Research participates noted that clinician and care provider support staff members have

strong, family-like cultures which may exclude technology worker. Research participants observed the existence of a hierarchical system within hospitals and clinics which did not always readily accept technology workers as peer contributors to the goals of patient care and patient safety.

> I just think that the departments feel like they're family. You know, like all of the pharmacists have lunch together, right? …It's very interesting because, you know, we have hierarchies wherever we go. You see the guy with the suit and the tie on versus the guy with the doctor's shirt on, right? …You go to the hospital, somebody's wearing scrubs, so you know immediately they're in the surgery department, right?

> There is sort of this, I don't want to say class system, but I'm saying class system. There's these pockets of things that define who you are when you're in the hospital and these people hang out together.

These feelings of being excluded existed even in healthcare technology workers who were former clinicians themselves. While they continued to view themselves as having relevant clinician experience, their experience was not consistently deemed relevant by current clinician staff members.

> I mean as an example, you know, my background is laboratory, so I understand what goes on in a hospital. Several years ago, I managed a program where we implemented a surgery system at four of our hospitals. At the end of the project some of the feedback that I got from the OR nurses on the project was that they wished that the person running the project had had a clinical background, you know, and I thought well, I thought I had loads of clinical background. And I realize now they really had wanted somebody, they would have, the perfect person for them would have been an OR nurse who then became a project manager. That would have been the perfect person for them to work with. And that's how they see things.

Some research participants attempted to address exclusion by shadowing clinicians at the care site. These technology workers had more positive perceptions of clinician interactions and expressed a higher feeling of satisfaction with their clinician interactions.

> What I like to do is I like to round with my customers because sometimes there may be an issue. The issue may have started six months ago, but because they've been living with it you don't get those calls. You don't even know it's an issue. I like to round with my customer to find out, you know, what's working good, what's not working so good, let's take a look at your workload, what can we improve, right? Because I'm a big believer that we need to have our applications work for our clinicians, not the clinicians have to work for the applications.
>
> I come second, and I'm okay with that. I let them know who I am. I'm just here to observe. I'll say if you want me to step out because of a patient case, I'm okay with it. If you need to kick me out, kick me out. You know, believe me, I have thick skin, don't worry about that. I say but I really want to know what the pain points are, okay? And if there's anything good you like about the system, you know, please feel free to share it. So that's more or less what the rounding's about.

Research subjects also noted that little interaction with clinicians can indicate that things are going well. Particularly for technology workers who do post-implementation support for applications and systems, a lack of phone calls or support requests is a good thing and a sign of success.

> I like to think of IT as a referee in a ballgame, okay? If everyone knows who the referee is then there's something wrong because they're too involved, whether it's positive or negative. I think, for us, we're an umpire. I think we just need to make sure that our systems are stable so that there's less hands-on with our customers. Yes, we want to make sure that, you know, our system is stable. So the more they call us that's not necessarily a good thing.

Emergent theme eight: Physicians are believed to have a negative view of technology. Clinicians are often viewed as adversarial to technology staff. One subject noted that she felt that clinicians had a negative view of health care information technology departments.

> First of all, I think that's kind of a general perception of IT in healthcare, is that IT just makes things slow. They get in the way, they make you do all these extra steps, they delay, delay, delay, the schedules are long and drawn out and they don't know everything I know about why things have to be drawn

> out. But I think in many ways I think they see me and my team as a barrier to them getting what they need.
>
> As we get higher up the food chain in the lab, the folks like the pathologists and the medical directors and those people, I think they tend to see us a little more as partners because I specifically include them in the strategy piece. … I very much go for the partnership. And I think I've accomplished that to a degree. I have a ways to go.

Several the research participants noted that clinicians had a negative view of their technology workers. However, they noted that physicians made little effort to understand the complexities of their work while technology workers are expected to understand the challenges of the clinician environment.

> There's always those clinical people who think you don't know, you're not in here with me. You're sitting in a cube in IT and how can you know? So you know, we do go to their environment. We do talk to them. We do go through and run their work flows with them so that we get a better understanding. It helps, but I think they honestly hate change control and then there's that code freeze here that I have to wait for and then, you know what I mean? And there's a lot of things that I have to do that they have nothing to do with and they just think that you're just slowing us down.

Emergent theme nine: Physicians resist adopting new technology. Physicians are often seen as an obstacle to adoption which can be deeply dissatisfying for health care technology workers. Research participants frequently noted the clinicians unfailingly showed a strong resistance to adopting new technology. As one participant said, "you know one thing, the physician group, the physicians go in kind of kicking and screaming." One research participant recounted the ongoing battle with clinicians when technology workers tried to implement system improvements.

> They didn't like change. And we brought them across the finish line kicking and screaming. The interesting things was that five years later when we went to go put Cerner in there, they behaved the same way. The system that they hated that I had helped them implement, they were finding avenues to it. So when we came along with the new Cerner system, we were all happy because

> we said oh, that's the way they acted with their last system. And we all just started laughing because it had nothing to do with, you know, what the system was doing. It was the fact that it was new and changing.

Another research participant described the physician group's response to plans to deploy an online scheduling application for patients. Clinicians expressed a clear feeling that the technology solution did not account for the complexities of the patient care environment. While there were a few champions in the clinician community, the majority of physicians resisted the adoption of the online scheduling application even though it had been strongly requested by patients and thoroughly researched by the technology staff.

> Terrified and defensive was the response. …
>
> The doctors don't have a lot of control of everyone's schedules. The particular medical group that they work for, or hospital, particular organization within that healthcare organization itself, really had a lot more control over defining what they do. How many appointments they can get in in a day. The length of the appointments is defined by the type of appointment it is. So they kind of have that pressure on them, which is what really, which is what I believe creates their kind of fear or defensiveness to opening up the schedule. Because they're trying to work within the parameters that they're defined, guided or even forced into I should say.
>
> Now we weren't saying "Oh, well we're just going to throw your schedule up out there and let the patients start booking stuff." And scheduling gets really complicated. It's not as easy as, find an appointment you know, today for just a regular checkup. Or you know, I'm actually making an appointment for you know, coming in for my physical and mammography. There's a lot of rules that make it really complicated well there's always a factor that you consider to whether or not you can have that appointment and do you have an order in the system? If there's no order in the system you can't show up for an appointment because they can't see you without that order. And then so, you can start to imagine the complexity behind that because there's always different systems that are doing it, it's not just one system. So it was really a big thing, and it took a while to convince them.
>
> There were a couple, what helped is we had a couple "champions" in the physician community that helped kind of allay the fears of the others and kept pushing forward because it's a small group subset of them, but there are physicians that are very much, no we need to be online. We need to be

> interconnected with the patients, we need to push technology to help make our job better, make the patients, you know, medical maintenance for themselves better. And so they helped kind of push some of that forward. The other part of it just came with time. … So yeah, in the beginning it was, it was a rough adoption.

One example story was told by a research participant who had worked for nearly a year to implement a safe, regulatory compliant solution for phlebotomists. After development and pilot testing only ten percent of the clinic and hospitals in her organization adopted the new solution. The research subject found that meeting the complex technical challenges of developing the solution temporarily satisfying, but the lack of adoption by clinicians was ultimately deeply dissatisfying.

> I'll give you an example. We had a software in place for phlebotomists to collect specimens from patient's blood. And they were using these little handheld devices and the devices were integrated with our electronic medical record software, but there were problems. … They said one of the problems is you can override positive patient identification. If the number on the wristband doesn't match the number in the system, you can override that and print a label. Well you shouldn't be able to do that. That's not safe. You might mislabel a specimen. It can to lead to a lot of bad things. But here they are overriding it because they're just frustrated because things don't match. So instead of finding the right match, they're overriding and continuing with their blood draws. That was one thing. Another thing was that these little handhelds didn't sync up with the software real time, so if they weren't constantly manually refreshing, they couldn't see everything that was on the list. And in a day, I mean these phlebotomists travel the whole hospital and draw blood for anyone and everyone who requests it and things get added minute by minute by minute. And so if they don't always have a current list in front of them, it's very inefficient. And then he might poke the patient more times than you need to.
>
> So the regulation comes in where the regulation says you must draw the specimen, print the label at the bedside, ID and match the patient at the bedside and label the specimen at the bedside. Well due to a lot of the problems they were having with these little handhelds and the software they ran, they couldn't do that. They couldn't get the labels to print when they wanted and they'd have to run outside, the wireless connectivity wouldn't let their little printers print at the bedside. So there were some regulatory issues there. So we had to go in and do a full assessment and this is many facilities, all of which have different

infrastructure, but one region at a time, go and figure out, okay, what are their infrastructure problems and then to remediate the problems they were having with the handheld stuff we had to develop a whole other technology for them to use that resolved those issues.

I found that very satisfying developing it, but it was very tedious. It took, I don't know, three or four months to develop the new technology and then I ran a six-month pilot to test it. And even after all of that, and this is very typical of healthcare, I resolved every issue they brought me. The technology wouldn't allow them to override, it refreshed real time, it printed at the beside. It had to be deployed in a very different way though. No more handhelds. They had a full laptop and a little phlebotomy cart and they wheeled that into the room. And we had to replace some of their wireless networks and things like that. But even after all that, ran the pilot, got new devices and totally new technology was developed in cooperation with our vendor, vast majority of my hospitals refused to use it because they don't want to change.

They screamed and stomped and yelled that what we have isn't safe and it won't work and it violates regulations, but when I gave them something that did work and resolved everything, the change was too much for them and they wouldn't adopt it. Right now out of my 39 facilities, I have four or five who use it. So the other ones are all out of compliance.

…It's funny too because, you know, despite them not wanting a cart, they actually had a cart. So they have all their phlebotomy supplies, their tubes and their needles. They had two devices. They had a wireless handheld device that they used to figure out where they needed to go to collect and then they had a wireless printer to print the labels. And you can't carry all that in two hands, so they did have little carts. Well with the new process everything got consolidated to one cart. The handheld for the specimen collection list went away and it went to a laptop that was mounted on the cart. Still had the wireless printer. Still have their phlebotomy supplies. I didn't think it was going to be as difficult a change as it turned out to be for most of them.

I was surprised by the lack of adoption. I felt like they screamed so much about patient safety with the old process that when they could see that the new process was completely safe and I did extensive testing on that, like I really had them try to break it. I anticipated that they would go, well, you know, safety is really more important than an extra click for me and that was not the case at all.

…I don't want to say it felt like I failed or I didn't feel respected … but I did feel that… I kind of felt like well, I did all this work and I created something that resolves your issues, that is safe and it saves them time if they

> learn it and implement it the right way and the four hospitals that use it showed that. …
>
> It was disappointing. Yeah, it was disappointing.

Perceptions of Contribution

The final category of research participant perceptions regards their contribution to the organization. Two themes emerged in this category. These themes are contributions which do not directly impact patient care and identification and contribution of a unique gift.

Emergent theme ten: Contribution was not defined only as patient care. Research participants felt that employees could make a valuable contribution even if their work did not directly or indirectly support the patient care mission. In fact, several participants indicated that their contribution has little to do with patient care. For these research subjects, the drivers of their feelings of task significance are found in their ability to perform well in their functional job roles.

> Software development has a creativity side to it. I'm not a creative like design person at all. You know somebody is looking for like you know, really pretty looking application, web based or whatever, I'm not the guy that's going to make it look pretty. If I do it, it's going to look very utilitarian. But it's creative from the standpoint is that you have a particular problem or something that needs to be made more efficient and you have to solve that. So there's a creative side to that, it's not as black and white as oh, I just go flip these ones and zeros and that solves that problem.
>
> Solving the problem, it's there and the other part is that I can, that I know I can sit there and write this particular language out for the computer that's going to take that, compile it down into machine code and I'm going to take what I've written that language that I've written and I'm going to see it turn into an actual user interface and application that has business logic behind it and it solved a business problem or has made the business able to do something it couldn't do before.
>
> Ultimately what I'm really looking for is I know what software can do. I know what technology can do for any industry. …I want to be somewhere where we're developing technology that's going to make a difference and help move

> something forward and change something. I want to see advancements and change on what I'm working on.

One research participant noted that funding for technology investments required deferring clinical improvements. She felt that her contribution was financial stewardship.

> We're corporate IT, but we don't make any money. We spend. Our hospitals make money. We're spending their money. And so we better be doing a good job of it, you know.
>
> If we're spending their money that these people are, you know, toiling over patient care and everything else, we better do it wisely. You don't want to be throwing money away because, for one thing, there's always more need in health organization than you have money, you know, because if we do an IT project it might mean that they don't get a new CT scan across the street.
>
> That's how you have to look at it. There's one big pot for the organization, and they have to figure out how to divvy up the money so that one year they don't get a CT scan, but maybe we get a new computer system for some other hospital, you know. And we've got to balance that out because, you know, when we go into our capital plan meetings there's always 10 times more money than people want than we have to actually spend, and we have to prioritize things.…
>
> It's important, at the peer level, to have your peers understand, just as important as it is for my vice president to know that we just saved her four million dollars.

Emergent theme eleven: Identification and contribution of a unique gift. In all nine interviews, the subject volunteered that they had a special skill or talent that contributed to their work successes. Most of the research participants volunteered information about their special skill without any prompting from the interviewer. These skills were not always directly related to their work, but in each case, the research subject "lit up" to describe their unique gift. Each participant shared that they found meaning in applying their unique gift and that they actively looked for opportunities to share their gift.

One participant identified her unique skill as mothering. While this skill was unusual, she felt it uniquely contributed to both her success in her job and overall perception of the meaning of her work.

> I believe that I am everybody's mother and the role really is mothering everyone. I'm the one that walks around and makes sure that you're doing all your compliance training, that you're doing all of the compliance things that we need, and the timesheets and all of that stuff. That is really a big part of what I do in my role.
>
> I saw a gap that I could fill and that I was comfortable filling. I have lots of brothers and sisters and, you know, I was the surrogate mom, right? So I like telling people what to do and so this gives me the authority to kind of walk around and tell you what to do, you know, and be nice about it, of course.

While this participant enjoyed contributing her unique gift, she also felt she applied it in a way that was personally meaningful and added value to the organization. She found that others also recognized her unique gift and contribution.

> One of my fellow peers moved over to a different organization and three days in she said this place is a mess, this place is a mess. And I said, what do you mean? And she said, they don't have one of you.
>
> …so I believe that it's a very valuable service. … You know, you're kind of like the psychologist, you're the fixer, you're the mom, you know, all of that, right? Yeah. I have like a big band aid for feelings, if you get your feelings hurt. One of the things that people say about me is that I make everybody feel like they're the only person in the world when they're in my office talking to me. I think that's probably a gift. I mean, I'm not just, you know, playing that part. I think that that's who I am. I do care about this.

Another research participant found his special gift in his deep empathy and compassion. He too felt that his unique gift allowed him to be successful in his role.

> I'm a people person. I can pretty much talk to anybody. Very compassionate. I think one of the things that my leaders and the staff that report up to me, they know they can come and talk to me about anything. I've always been an open-door type leader, and so, you know, I've had some of my staff that have gone through very challenging times, and we could be sitting in here and crying about what's going on in their life.

As with other research participants, he felt that he was able to contribute his unique gift in a way that benefited his organization. He found meaning in applying his gift to connect with other employees.

> I feel I have that special bond to my staff. I also feel like I have that special bond with, you know, the facilities that we support. I have a great rapport with our clinical users, our clinical informatics folks, our site directors and senior leaders within the organization. And I think it comes down to my compassion.

Another participant identified his unique gift as teaching others. He had taught junior high school previously but left teaching for a higher paying job in health care technology. Still he felt that teaching was his gift and looked for opportunities to contribute it in service to the organization.

> It was more of a financial decision than anything else. I was teaching it wasn't paying a lot, unfortunately, but I really enjoyed it. I got a lot of satisfaction out of that and I realize now that things that I like the most are when I'm teaching here. When I have the opportunity to teach this or do a seminar on this or facilitate this meeting or that meeting. So I still really enjoy that aspect.

While he continued to offer and apply his teaching gift in his employing organization, he had returned to school to secure a Master's degree that would allow him to teach at the university level. He described the meaning he finds in connecting with others through utilizing his teaching gift.

> I think it's helping people achieve the most that they can achieve, I guess. You know, it's like if you can turn on that light bulb for someone either at the kid's level and they're like, "Ah, I get it now." Or an adult to say, "Oh, yeah, thank you for this. I'm glad I attended this."

The subject noted that while his employer did not ask him to teach he continued to offer his unique gift due to the meaning he found in teaching. Even if it would not yield career progression, he felt driven to contribute his gift.

> I feel like when I'm most productive or most satisfied is when I'm teaching something. I need to be working towards that; working to have the opportunity to teach a class here or there. Here or elsewhere after I finish my degree, you know. I feel like I'm working towards that now…it was more of an internal, I would like to do this and it could allow me to teach, you know at a college level part-time or eventually I see that as a job you could kind of do in retirement. You could teach, you know. There's a lot of older people that they're semi-retired and they teach, but to do that you have to have an advanced degree. …
>
> Eventually I think I'll go back to teaching in some manner. I don't know if it'll be while I'm - I mean I might just might continue working here. I know people here that they teach a class at night, you know, once a week.

Another research participant defined the meaning in her role as applying her unique gift for leadership. She saw the contribution of that gift as her primary driver of the meaning she finds in her work.

> I think I have a certain set of leadership skills that based on feedback that I've received, a lot of people don't have.
>
> I feel like I have the ability to stay in tune with the big picture, develop strategy, and translate strategy into tactical implementations. And I can move across, I can go down to the lowest level of detail, and move back and forth, up and down vertically as well as horizontally and facilitate movement of large groups in ways that not a lot of other people seem to be able to do.
>
> What I find meaningful or what gives my job meaning is its significance - the significance that my leadership style has with other people and how I relate, what I bring to the table in my relationships with my staff and with my peers in community, the integrity that I like to lead with, to me, brings meaning.

No matter what the subject identified as their unique gift, they regarded it as the thread that was woven through their entire professional lives. Another research subject who also identified her gift as leadership noted, "I think I've always been a natural leader. I mean, even when I didn't have leadership positions, I felt like people were always looking to me for the answer." The former teacher noted that his teaching skills where useful in various profession

roles. “I use a lot of those same skills and that kind of facilitation.” Another research participant noted that she regarded her unique gift as helping others find meaning. She felt that this mission was a constant in her professional life despite a long and varied career.

> I find meaning in my work by helping other people be better at what they’re doing and helping people find meaning in what they’re doing themselves. So that to me is kind of a personal mission, and it’s always been when I was teaching, when I was working in the State hospital, when I’ve done astrology, it’s always been about wanting to help people know themselves better and find greater satisfaction and meaning in what they’re doing.

Chapter Summary

This exploratory study examined the perceptions of nine health care technology workers to answer two research questions. In the content analysis, 11 themes emerged in four categories, perceptions of the organization’s culture, perceptions of the organization’s mission, perceptions of interactions with physicians, and perceptions of contribution.

Chapter 5. The Study and Its Implications

Governments around the globe struggle to provide their citizens access to affordable, high-quality health care (Armstrong, 2011; Loewy & Loewy, 2002; Thai et al., 2002). In the United States, recent legislation has been targeted to address both access and quality of care. The Patient Protection and Affordable Care Act was designed to improve access to health care and the Health Information Technology for Economic and Clinical Health Act was designed to use technology to improve patient outcomes while lowering the overall cost of care.

Despite these government interventions, when compared to other industrialized nations, health care costs in the United States have risen more rapidly in both actual dollars and as a percentage of the Gross Domestic Product (Anderson, Hussey, Frogner, & Waters, 2005). Unfortunately, patient outcomes have not improved at the same rate that costs have increased. In fact, the United States has the most costly health care system in the world, yet it ranks below other developed nations in terms of quality of care, access to care, efficiency, equity and the health of its citizens (Davis et al., 2014). Health outcomes in the United States for heart attack mortality, unmanaged asthma, diabetes, and life expectancy for babies are worse than those in other developed nations (Organisation for Economic Co-Operation and Development, 2013)

The health care industry faces competing pressures to meet increasing regulatory requirements and improve patient care while simultaneously lowering overall costs. Health care technology is seen as a pathway to address these three competing goals. Regulatory changes have required additional health care technology investments for health care payers and providers (Bhaskar & Vo, 2012b). However, regulatory changes are not the only driver of increased health care technology needs. Technology plays an increasing role in patient outcomes through

care devices such as home health equipment, real-time patient monitoring, and minimally invasive treatment implements (Barr, McElnay, & Hughes, 2012; Feldman et al., 2005: Kropf & Grigsby, 1999). Finally, technology is viewed as a method to reduce cost and variation in medical office functions including procedure coding, the filing and adjudication of insurance claims, and patient billing. All of these back office functions now rely on health care technology (Trotter & Uhlman, 2011).

These pressures of compliance, cost and care drive an increased focus on health care technology and health care technology workers. Health care technology workers are a subset of knowledge workers whose expertise spans the technology of patient care, hospital administration, and health insurance. While these workers may not have any direct patient interaction, health care technology workers support both patient care and health care administration.

While it is established that health care technology workers play a role of increasing importance, their perceptions of their work, its meaning, and their job satisfaction are lightly studied in comparison to other health care workers such as nurses or physicians. Several thousand peer-reviewed journal articles exist regarding the job satisfaction of physicians and a similarly large number of articles regarding other clinicians such as nurses, home health workers, and other allied care providers. In contrast, studies of the perceptions of health care technology workers regarding the interplay of job meaning, task significance, mission valence and job satisfaction are relatively meager. This exploratory study addresses that gap in the existing literature.

Theoretical Frameworks

In this study, two theoretical frameworks were used to explore the four concepts of task significance, mission valence, job meaning, and job satisfaction. While job satisfaction and task significance have a long history of academic research, job meaning and mission valence are from emerging theories.

The relationship of an employee's job satisfaction to his behaviors and performance has frequently been studied with the long path of satisfaction theories beginning in the 1940s with Maslow's (1943) Hierarchy of Needs. Job satisfaction is a well-established framework with Judge and Church (2000) noting that it is one of the most widely researched topics in organizational psychology. Landy (1978) notes that job satisfaction has been linked to an employee's productivity, his motivation, his frequency of absenteeism, his turnover intention, his emotional well-being, his overall satisfaction with his life and the frequency and severity of workplace accidents. This study utilizes Hackman and Oldham's (1976) Job Characteristics Model, a cognitive theory of job satisfaction. The concept of task significance is drawn from this model which identifies the five core job characteristics which determine job satisfaction as skill variety, task significance, task identity, autonomy, and feedback.

In contrast to job satisfaction's long history of research, job meaning research has emerged much more recently. Job meaning theories developed as positive organizational scholarship theories evolved over the last decade following the emergence of positive psychology. Positive psychology posits that individuals pursue meaning in their lives and positive organization theories posit that individuals seek to find meaning in their work. Finding meaning, whether in one's work or one's life, provides individuals with both satisfaction and

intrinsic motivation (Frankl, 1962; Seligman & Csikszentmihalyi, 2000). As with job satisfaction, the relationship of job meaning to job performance has been studied. Pratt and Ashforth (2003) showed a positive correlation of feelings of meaningful work to increased satisfaction with one's job. In addition to increased satisfaction, employees who find their work meaningful show higher levels of higher organizational commitment, improved job performance, and increased prosocial behaviors (Roberson, 1990; Wright & Pandey, 2011).

Data Collection and Analysis

This study used purposeful sampling of a network convenience sample. Research participants were solicited from three not-for-profit, secular hospital systems which were selected to have variation in geographic scope and organization size. All research participants were full-time, senior professional, non-executive, employees of the technology business unit of a non-profit health care provider company. Each participant had worked for a minimum of 5 years in health care technology and a minimum of 3 years with their current health care employer. The sample was constructed to include a maximum variation in the participants work experiences. Some participants had clinician experience, others previously were care provider support staff, and some had no prior work experience at a patient care site. The sample included variation in the research participants' managerial responsibilities, in the number of direct reporting staff and in total organizational span of control.

In total, nine phenomenological research interviews were conducted within an eight week time period in January and February, 2016. The researcher developed a set of prompts to facilitate the conversation; however, the interviews were not be structured. All interviews were

conducted in person at a site of the research participants choosing. Interviews occurred in four cities and two states.

The interview transcripts were coded and grouped into thematic patterns using HyperResearch. After the data had been coded, grouped and categorized, corresponding descriptions were developed. Finally, the data was interpreted and presented as research findings and conclusions.

Key Findings and Discussion

Based on the analysis of data collected, this study has six key findings. Each finding ties to prior research on job meaning and job satisfaction.

Key finding 1. Health care technology workers feel their organization has high mission valence. The research participants express deeply held feelings that the mission of their organization is important and valuable. All participants clearly understood and valued the mission of patient care. Each research participant could explain the mission of patient care and its importance. Furthermore, research participants observed that education about the organization's mission was part of both the cultural inculcation of newly hired employees and the ongoing training of staff members throughout their tenure in the organization. The understanding of the mission and feelings of high mission valence existed in all research participants and was not affected by the number of years of health care experience or prior experience working at a care delivery location.

When employees perceive the organization to have high mission valence, it is beneficial to their employing organization. Rainey and Steinbauer (1999) theorized when an organization's mission is perceived as engaging, attractive, and worthwhile to society, it will prompt employees

to join the organization and motivate them to perform well. Several studies have found that a positive employee attitude toward the organization's mission increases both employee motivation and job performance, which subsequently improves organizational performance (Bart, Bontis, & Taggar, 2001; Bart & Hupfer, 2004; Bart & Tabone, 1998; Forehand, 2000).In addition to any organizational benefits, employees also gain directly when working for an organization which they feel has high mission valence. Wright and Pandey, (2011) noted the correlation between feelings of high mission valence to the employee's affective feelings of job meaning, job satisfaction, and general life satisfaction.

Key finding 2. Interactions with physicians are directly correlated to job satisfaction. Research participants vividly described their workplace relationships with physicians. Some participants were able to create productive relationships with physician partners. Generally, that meant the research participant took it upon themselves to engage physicians directly and invite them to contribute to technology decisions. However, these positive relationships were exceptional, and many research participants described their relationships with physicians as problematic. This difficult relationship was especially apparent in discussions regarding asking physicians to adopt new technologies. Research participants described physician's attitudes toward technology adoption as "kicking and screaming" or "fearful and defensive." The physician is seen as a roadblock to the adoption of valuable new health care technology. This obstacle to adoption is also a significant driver of dissatisfaction for the healthcare technology worker.

For healthcare technology workers, the physician their key client. While clinicians have daily interaction with patients and specific knowledge of patient outcomes (Australian Institute

of Health and Welfare, 2015) information technology workers no longer to have routine patient contact (Bergen, 2001). None of the participants in this study currently worked at a patient care site. Instead, research participants worked in separate administrative office spaces remote from patients and clinicians. Furthering the distance of the technology worker to the patient, are patient privacy regulations such as Health Insurance Portability and Accountability Act, which stipulates that only care providers directly involved with a specific patient's care may have access to the medical record. With few exceptions, information technology workers have no direct knowledge of individual patients, their care or its outcome (Bergen, 2001).

This distance from the patient ties directly to two characteristics in Hackman and Oldman's (1976) job characteristic theory of job satisfaction: task identity and feedback. Task identity reflects the worker's ability to feel ownership of their work's final results, in this case, the patient outcome. Feedback refers to providing the worker with clear and actionable information about their work product. As health care technology workers are prevented from receiving feedback directly from patients, the physician serves as the single most important source of feedback. As noted by all research participants, that feedback is often negative and being unable to satisfy physicians is a driver of dissatisfaction.

Key finding 3. Working in the patient care delivery work site, in any job function and for any duration, has an enduring impact on how health care technology workers perceive their work. The study sample included health care technology workers with a range of career histories. Some had no experience working at a care delivery location. Several research participants were former clinicians in roles such as microbiologists and medical technicians. Others had worked at a care delivery site in a support staff role such as a receptionist and

cafeteria worker. Taken as a whole, this cohort of research participants had long tenures with their employing organizations. However, those research participants with prior care site experience had the longest tenures, often more than twenty years with their employing organization.

Working at the care site provided an opportunity to interact with patients and to see patient outcomes. For those workers whose career path included technology work at a care site, it allowed them to see their work product, health care technology, implemented and used by clinicians. Having a direct connection to patient care, even if it occurred in the distant past, addressed the gap noted in task identity from Hackman and Oldman's (1976) job characteristic theory. This personal experience in the patient care environment relates to the increased the job satisfaction and sense of job meaning of these workers. These workers were able to view the significance of their current tasks in the context of patient care, and they continued to view their tasks as valuable to the patient even when they felt those tasks were far removed the organization's mission.

Overall, any time worked at the patient care site increased the research participant's perceptions of job satisfaction and job meaning. Wright and Pandey (2011) observed that employees with increased feeling of job satisfaction and meaning demonstrate a higher level of organizational commitment. This may explain the exceptionally long tenures of employees with prior work experience at the care provider site.

Key finding 4. Task significance can be cultivated by doing one's tasks exceptionally well even if the worker feels the tasks are distant from the organization's mission. Hackman and Oldham (1976) established task significance as a valid and reliable component quantitative

measures of job satisfaction. Many studies of perceptions of task significance and job satisfaction of health care workers have focused on clinicians whose occupational tasks that are immediately proximate to the organization's mission (Dik & Duffy, 2009; Duffy, Manuel, Borges, & Bott, 2011; Forehand, 2000; Whorley, 1992). This study found that proximity to the mission was not required to have strong feelings of task significance.

In this study, research participants who saw their work as far removed from patient care were able to cultivate feelings of task significance. They described their tasks in terms of providing excellent work within their job function whether it was delivering technical expertise, practicing financial stewardship or fostering employee development. These research participants cultivated a sense of task significance for work unrelated to the patient care mission, but in support of the larger organization. This finding aligns with prior research by Greene (2002) into the job satisfaction and turnover intention of health care technology workers. Greene's research showed that the perception of patient impact was not a significant driver of job satisfaction or organizational commitment for these workers.

Key finding 5. This study confirms earlier studies which demonstrated that task significance is correlated to job satisfaction. Research participants in this study took high levels of job satisfaction from doing tasks which they felt were important. Multiple prior studies of clinician populations have demonstrated the positive correlation of task significance to job satisfaction (DeLoach, 2003; Munro, 1983; Smith, 2000; Whorley, 1992).

However, it was also noted that research participants in this study were dissatisfied when they felt their tasks were not regarded as significant by others, in particular by clinicians. This observation aligns with quantitative research on the burnout of medical facility support staff

conducted by Cashavelly et al. (2008). In that study, the respondents indicated that they were often overlooked and undervalued by clinician staff. The study also noted that the subjects felt valued by receiving praise and recognition from clinicians, administrative supervisors, and patients (Cashavelly et al., 2008). When someone feels that their tasks are meaningful, but their tasks are not valued by their organization, it reduces their feelings of overall job satisfaction.

Key finding 6. Job meaning is deeply personal. Health care technology workers cultivate a feeling of job meaning by applying what they believe to be their unique gift. Research participants found the meaning in their work by establishing a connection to something greater than the work task itself. During the research interviews, every research participant volunteered something which they felt was their unique gift. That is a gift or a talent which they feel contributes to their organization even if the gift is something that is not empirically viewed as a requirement of their job. These unique gifts included mothering, leadership, communications, and teaching.

Each subject found tremendous meaning in contributing their unique gift to the workplace. This finding aligns with the organization of experience model put forth by Guevara and Ord (1996) who posited that workers cultivate job meaning through considering three attributes: their contribution, their relationships and their presence and belonging. In fact, each research participant looked for opportunities to contribute their unique gift even when it was not part of their assigned work. They felt compelled to contribute their gift to the organization, and they found the meaning in doing so.

While Guevara and Ord (1996) address contribution as a component of meaning, they do not address an individual's perception of a unique gift. The research participants responses

regarding unique gifts is challenging to set within the existing theoretical framework of job meaning. It most closely aligns with research regarding worker's perception of having a calling. Prior research by Duffy et al. (2011) found a moderate positive correlation between working in what one perceived to be their calling and in viewing their life as having meaning.

Conclusions and Discussion

This study offers three conclusions. These conclusions yield recommendations for both future research and new practices for health care companies to apply within their organizations. Each of these conclusions offers insight into how health care technology workers experience both meaning and satisfaction which may in turn influence job performance and organizational commitment.

Conclusion 1: Job rotations that allow health care technology workers to work at a care provider site provide an opportunity for health care companies to increase workers feelings of task significance and task identity, and therefore, job satisfaction.

Conclusion 2: Care provider organizations should look to improving the interactions between health care technology and physicians, particularly with regard to adoption of new technology.

Conclusion 3: Contributing one's unique gift is perceived as meaningful, and workers seek opportunities to do so.

There is a much-publicized shortage of doctors in rural areas and nurses overall (Grunfeld et al., 2000; Schiestel, 2007). While it is less publicized than the shortage of clinicians, there is a similar shortage of information technology talent in the health care sector (Asplund, 2002). The shortage of information technology workers requires health care provider

organizations to focus efforts on attracting and especially on retaining technology workers. (Grunfeld et al., 2000). Tu, Raghunathan, and Raghunathan (2002) observed that information technology professionals have displayed a much higher rate of turnover than other professionals and that technology skills are highly transferrable. Thus, technology workers have occupational flexibility, and they can easily shift jobs and industries.

In response to increasing regulatory requirements, the health care industry first consolidated from independent doctors practicing in their own office to small community medical groups. As regulations and industry pressures have increased independent hospitals merged into complex, nationwide health care delivery organizations (Barnes, 2007). This industry shift has increased demand for health care technology workers and reshaped their work environments. Whereas health care technology workers may have previously worked within a hospital building, these workers are now frequently housed in an administrative worksite removed from patient care (Bergen, 2001). Job rotations programs which focus on giving health care technology workers a rotation at a patient care site address this industry change.

This study found that working at a patient care site at any point in one's career has an enduring impact on the technology worker. Research subjects with care site experience expressed increased feelings of task significance, task identity, and organizational commitment. This aligns to Hackman and Oldman's (1976) cognitive model of job satisfaction and may explain these employees exceptionally long tenure in their organization. They regarded their time in a care setting as a touchstone which provided a meaningful connection to the patients and the clinician community. Working at a care location also allowed the health care technology workers to see their work implemented. Job rotation programs provide an opportunity to allow

health care technology workers to have care site experiences which will follow them throughout their careers. Future research could explore the optimum duration and timing of work rotations at the care site.

Working at the care site would also allow health care technology workers more direct exposure to physicians. Sezgin and Yıldırım, (2014) noted that health care technology workers who are domiciled away for the patient care location may have very infrequent contact with their clinician coworkers. The physician relationship is noted as a determinant of job satisfaction for the technology worker. Addressing the dissatisfactions inherent in the physician/technology worker relationship is important in consideration of job satisfaction's positive correlation to occupational commitment and negative correlation to turnover intention (Shaw, 1999). Addressing the causes of turnover intention is important not just for technology worker, but also for clinicians. Kidd (2006) observed that health care provider organizations commonly experience high turnover in excess of twenty percent of staff annually. This high rate of employee turnover is especially costly due to shortages of clinician and technology staff and the high costs of recruiting and orientating new employees in all job categories.

In addition to the costs of employee turnover, the dissatisfying relationship with physicians may reduce the productivity of health care technology workers. Research into the relationship between job satisfaction and job performance shows varying results with empirical studies show only a weak to moderate strength correlation (Iaffaldano & Muchinsky, 1985; Judge et al., 1997; Syptak et al., 1999). However, Bassett (1994) took a different view on the relationship of job satisfaction to performance asserting that job satisfaction stems from being a productive worker rather than job satisfaction increasing worker productivity. Bassett's assertion

may be especially relevant in the relationship of health care technology workers to physicians. Research participants noted that physicians were obstacles to technology adoption and that physicians diminished the productivity of technology workers. Technology workers may benefit from additional training on change management and on overcoming resistance to change. Training and support on working with difficult customers may also allow technology workers to better manage the conflicts which decrease job satisfaction. Future research could explore the drivers of the frustrations technology workers feel toward physicians and if physicians have reciprocal feelings of frustration toward technology workers. Another area proposed for additional research is the relationship of the adoption of new technology to job satisfaction.

In addition to the decrease in job satisfaction, the difficult relationship with physicians may decrease the health care technology workers feelings of job meaning. As previously discussed, Guevara and Ord (1996) theorized that employees develop the perception of job meaning through three attributes: their contribution, their relationships, and their belonging. The physician relationship negatively impacts the technology worker's perceptions of both their relationships and belonging.

Conversely, research subjects described increased feelings of job meaning through their contribution of their unique gift. Every participant found remarkable meaning in contributing their unique gift to their organization. This finding aligns with Guevara and Ord's (1996) prior research on how individuals perceive meaning. However, while Guevara and Ord address contribution as a factor in meaning, further research is needed to understand how workers ascribe meaning to their unique gift and its specific contribution to their organization.

Study Validity

Creswell (2009) outlined eight procedural alternatives to establish validity and suggested selecting among the alternatives to incorporate validity strategies into the research; this study uses four of these. The validity procedures used in this study were triangulation, clarification of bias, thick descriptions and peer review.

The researcher triangulated data from the interview transcripts, observation notes, and personal reflections on the interviews. To clarify bias, the researcher used the epoché techniques suggested by Moustakas (1990) including quiet reflection and a personal journal to identify existing biases. This process of reflectivity was used throughout the research process to clarify and confront bias. The coding of the transcripts was reviewed by a peer researcher to identify any inconsistencies in the coding of data. Finally, the researcher used a rich, thick description to convey the findings and to assist other researchers.

Limitations of the Study

This study explored and described the perceptions and experiences of heath care technology workers using a heuristic inquiry model. This research was conducted through phenomenological interviews with a limited number of health care technology workers. While the study had maximum variation sampling strategy, the sample of this study included a subset of health care technology employees with defined minimums of tenure and experience and many research participants greatly exceeded the study minimums. Both the depth of understanding of the organization's mission and the affinity one has to the mission may be related to overall tenure. It cannot be assumed that this research would apply to workers without similar tenure in their organization.

Furthermore, the sampling criteria specifically excluded health care technology executives, current clinicians, and contractor employees. The outcomes and findings of this study may not be generalizable to these or other employee populations. The study also excluded health care technology workers who worked outside of a not-for-profit care provider organization. This study was limited the not-for-profit organizations and may not be generalizable to workers in for-profit health care companies, such as for-profit hospital systems, health care consultancies, health care hardware or software companies or other related industries such as health insurance.

Closing Thoughts

Individuals and communities require access to high quality and affordable health care. While health care costs in the United States have continued to rise, patient outcomes have not followed the same trajectory. The successful implementation of health care technology provides an opportunity to contain health care costs, improve patient safety, meet regulatory requirements and expand access to care.

While the shortages of nurses and clinicians receive the lion's share of media attention, there is also a shortage of trained and competent health care technology workers. As the health care industry has consolidated to meet regulatory changes, the work setting for the technology worker has changed from the patient care site to the office building. This change has reduced their access to both patients and clinicians and changed the technology worker's perceptions of task significance, mission valence, job satisfaction and job meaning. The need for health care technology workers continues to rise and care organizations which are able to create jobs with

high satisfaction and meaning will be better positioned to attract the limited pool of technology workers.

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APPENDIX A

Interview Prompts

Prompts about the participant's job history in health care technology.

- Describe your current job and work tasks?
- Is your work mostly the same day-to-day or is there a lot of variation?
- What tasks are your favorites and why?
- How would you describe your work to someone looking to enter <occupation>?

Prompts about the participant's job satisfaction.

- What parts of your job are most valuable? To whom? Why is it valuable?
- Are you proud of your work?
- Does your work give you a sense feeling of personal accomplishment?
- Describe some work that you are proud of doing.

Prompts about the participants understanding and attitudes regarding the company's mission.

- Tell me about the mission and purpose of your company.
- How do you feel about your company's mission? Is it important or valuable?
- How does your work contribute to the overall mission?
- Do you think your work has an impact on patient care or patient safely (or other mission language)?
- Is your job important to the overall mission of the company?

APPENDIX B

IRB Approval Notice

PEPPERDINE

Pepperdine University
24255 Pacific Coast Highway
Malibu, CA 90263
TEL: 310-506-4000

NOTICE OF APPROVAL FOR HUMAN RESEARCH

Date: November 11, 2015

Protocol Investigator Name: Christine Valladolid

Protocol #: 15-10-074

Project Title: Meaningfulness and Job Satisfaction for Health Care Technology Workers

School: Graduate School of Education and Psychology

Dear Christine Valladolid:

Thank you for submitting your application for exempt review to Pepperdine University's Institutional Review Board (IRB). We appreciate the work you have done on your proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations 45 CFR 46.101 that govern the protections of human subjects.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit an amendment to the IRB. Since your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite the best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the IRB as soon as possible. We will ask for a complete written explanation of the event and your written response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the IRB and documenting the adverse event can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* at community.pepperdine.edu/irb.

Please refer to the protocol number denoted above in all communication or correspondence related to your application and this approval. Should you have additional questions or require clarification of the contents of this letter, please contact the IRB Office. On behalf of the IRB, I wish you success in this scholarly pursuit.

Sincerely,

Judy Ho, Ph.D., IRB Chairperson

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives