EMPLOYEE ENGAGEMENT

AND SERVICE QUALITY

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Abstract

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Employees' level of engagement directly affects the quality of service provided by their organization. Therefore, highly engaged employees are beneficial to an organization. By comparing hospital work-unit level employee engagement data to individual patient satisfaction data, this study tests this concept, therefore determining if these variables are related. The findings reveal that the level of employee engagement within the work unit influences patient satisfaction when satisfaction is determined by a simple measure. This is not, however, the case when comparing the level of employee engagement to a complex measure of patient satisfaction. The findings of this study provide insight into the environmental influence of engaged employees upon client satisfaction. Understanding when work-unit engagement affects different levels of client satisfaction provides insight for determining realistic organizational goals for client satisfaction, which is useful to hospital management as well as the broader realm of public administration.

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SECTION ONE

INTRODUCTION

Employee engagement is vital to public administration. When workers are engaged, they positively commit to their organization, willingly make changes, trust their organization, possess self-efficacy, and aspire to achieve improvements within the organization (Frese 2008). The results of engagement include improved productivity, a reduction in turnover, and amplified customer focus (Wallace & Trinka 2009). These benefits bear particular value in the public and third sectors where resources to compensate employees are often more limited than in the private sector. Engaged employees are more likely to remain with an organization even if higher paying jobs are available to them in the private sector. Public sector employee engagement can also positively affect efficiency in the use and delivery of public services, trust in government, and attraction of qualified candidates to public service. Given this potential, it is valuable to ask if employee engagement affects the quality of public service, and if so, how?

The healthcare setting is an ideal arena to examine this potential relationship considering that these organizations are often operated and funded through the public or third sector. Quality, cost and availability of healthcare currently receive great attention by many in the American government and population. Most Americans expect to receive the highest level of care scientifically possible (Institute of Medicine 2001). As lawmakers debate healthcare reform under the Obama administration, three in ten Americans report following the issue with more attention than any other (The Pew Charitable Trust 2009). In the last presidential election, Americans considered it the second most important issue (Saad 2008) and it is considered by many to be a public good, implying that everyone should be able to receive healthcare. Healthcare reform is a controversial topic in public politics and remains a prominent focus of the Obama administration headlining on whitehouse.gov. With the attention given to healthcare by government and citizens, it is worthwhile to examine the hospital setting and the experiences of those delivering and receiving healthcare.

Since the government has passed a plan that will ensure healthcare is available to nearly all, then it is important that their are a sufficient number of trained professionals who will deliver it through retention of engaged staff and recruitment of new medical professionals.

SECTION TWO

LITERATURE REVIEW

Employee engagement has interested researchers and organizational leaders for decades (Fry & Raadschelders 2008, Wright 2001). The following review of literature illustrates the components of employee engagement as well as its relevance to individuals and organizations.

What is Employee Engagement?

A wide range of researchers study the multi-faceted topic of employee engagement[1] (Macy & Schneider 2008; Masson et al 2008; Pugh & Dietz 2008). While each author's interpretation is subtly unique, for example, in the language each researcher uses, such as proactive service performance (Rank, Carston, Unger & Spector 2007) or motivation (Wright 2001), the definitions are far more alike than different. Frese (2008) provides a particularly comprehensive definition, which describes an engaged worker with five key characteristics. An engaged worker must positively commit to the organization. The employee must be willing to make changes, which require that he or she cares enough to change. The engaged worker possesses trust in his or her organization, especially that one's input and energy will not backfire. An engaged worker also is certain that his or her effort actually leads to positive results in the organization, which Frese (2008) refers to as the possession of self-efficacy (Rank, Carston, Unger & Spector 2007). Finally, the worker aspires to achieve improvements within the organization, which also requires that he or she conceptualize the positive effects that can be achieved (Frese 2008).

[1] The concept of employee engagement has been studied over time by many names; proactive service performance (Rank, Carston, Unger & Spector); motivation (Wright 2001); satisfaction (Schneider, White & Paul, 1998); empowerment (Paul, Niehoff & Turnley 2000). Employee engagement is used in this work as it is used frequently in contemporary literature and is also the expressed focus of the employee survey examined in the case.

The majority of employee engagement literature addresses the private sector, but is also cited in public sector work (Wright 2001). More study is needed specifically in the public and third sectors[2]. These areas are focused on serving the public in some way, are restricted by limited resources, and are often more challenged by bureaucratic structure, which can hinder employees altruistic aspirations (Wright 2001). The potential improvements from better engaged employees include increased retention, productivity, and stronger client focus (Rank, Carston, Unger & Spector 2007, Wallace & Trinka 2009).

The Historical Road to Employee Engagement

Prior to the notion of employee engagement, concepts like Taylor's Scientific Management (Taylor 1919) were widespread in describing workers and the worker-organization relationship. Within the Taylorist framework, workers were viewed as part of a machine, whose purpose was efficiency without consideration for human elements of a worker. Fordism emerged at the beginning of the 1940's, shortly after Taylorism, and is marked by product standardization, specialized assembly line tools and equipment, and elimination of skilled labor in direct production (Tolliday & Zeitlin 1987). This concept was different than Taylorism because Ford aspired to engage his workers with consumption in a new way. He attempted to create a moderately priced product and compensate workers in such a way that they could afford the products they produced. While this was not a substantial divergence from the daily working activities of Taylor's time, it was a different philosophy of engaging the worker with more resources (Pietrykowski 1995).

Elton Mayo conducted extensive work in the 1920's and 1930's in what could be considered today to be employee engagement. Mayo determined that organizations need more than just compliance from their employees, they need cooperation (Masson, et al 2008; Mayo 1960). Mayo's

[2] Referring to the sector of non-profit and non-governmental organizations; also referred to as the civic sector (Zaleski 2006).

career focus began exploring the relationship between society and individual problems, which later led to research in the work setting (Fry & Raadschelders 2008).

Mayo conducted research on employee productivity, employee turn-over, and morale in multiple factory settings. The conclusions of his studies note that management technique and co-worker relationships were substantial factors in determining worker productivity and morale (Fry & Raadschelders 2008). During one study, researchers were situated among workers as observers, but also took on a supervisory role. In this setting, they attempted to maintain a friendly work environment for the workers. Instances in which workers were permitted to speak freely with one another fostered informal relationships among workers. These informal relationships positively impacted workers morale and productivity (Fry & Raadschelders 2008). Mayo's concepts relate to Frese's model of engagement in that employees productivity was improved through management techniques that encouraged some autonomy. However, the factory experiment did not address workers volunteering actively to problem solve or to participate in making changes within the organization.

During the 1950s and 1960s behavioral theory continued in this direction with a focus on the value of individual contributions and employee satisfaction. For example, Mosher emphasized, "interpersonal relations, employee participation, and sensitivity to employee needs as part of a new managerial revolution associated with decentralized decision making" (Mosher 1968, as cited in Wise 2002). This concept paralleled the need for social participation and equal rights asserted by women and minorities during the civil rights movement in the United States. Together, these factors have influenced public policy to promote diversity (e.g., gender, sexuality, race, disability, religion), which impacts both employee and citizen engagement by opening doors to include and value more of the population (Wise 2002).

During the 1970's, questions continued with regard to equality and how government was promoting or thwarting it based on how public administration was conducted. H. George Fredrickson

(1971) proposed New Public Administration. This concept continued to honor traditional goals of public administration, such as working to achieve efficiency and economy in providing service, but also engaged the notion that "Administrators are not neutral; they should be committed to both good management and social equity as values, things to be achieved, or rationales" (Fredrickson 1971 as cited in Shafritz, Hyde & Parks 2004). This approach placed some value on the human component of administration that would be more conducive to engaging the workforce.

Throughout the 1980's and early 1990's, researchers did not produce a great volume of engagement research. The political landscape of the Reagan era favored a reduction in the Federal Government and taxes, and an increase in free market practices (Shafritz, Hyde & Parks 2004). During this time, differences between public and private organizations were brought into question. In a survey of public and private administrators assessing perceptions of rule enforcement, "red tape," researchers concluded that the employee experience between the two was not substantially different (Rainey, Pandy & Bozeman 1995). Somewhat reminiscent of Taylor's work, many during the 1980's viewed employees' motives as raw materials that were inputs to the workplace equation (Bozeman 1987; Perry & Porter 1982; Wright 2001).

Measuring Employee Engagement

Researchers measure employee engagement in multiple ways to gain a deeper understanding of this multifaceted topic, which relates to many disciplines. For example, psychologists (Freud 1922), and sociologists (Goffman 1961; Merton 1957) studied work engagement as a process that related to how an individual presented oneself. Studies in this arena focused on qualitative, observational research in which the researcher had direct contact with individuals to provide analysis of engagement (Kahn 1990).

Anonymous surveys are often used to assess engagement (Harter, Schmidt & Keyes 2004; Macy & Schneider 2008; Watson & Papamarcos 2002). Anonymous surveys are typically a lower priced option of data collection. The results of the surveys are more consistent, in that each

respondent reads the same set of questions without potential influence from an interviewer, and the factor of anonymity tends to lead to more honest disclosure in responses (Fowler, Gallagher & Nederend 1999). As early as the 1970's, The Gallup Organization has studied employee engagement both qualitatively and quantitatively. The focus of these studies has been engagement, framed as a series of components that managers can influence, compiled in a survey (Harter, Schmidt & Keyes 2003). In 1996, the United States Government also used a survey for public employees through the Merit Systems protection Board called the Merit Principles Survey. The purpose of this survey was to assess compliance with the 1993 Government Performance and Results Act. This survey questioned more than 18,000 employees across twenty three of the largest federal agencies, assessing job related attitudes, behaviors, agency characteristics and asking questions about the National Performance Review (Brewer & Selden 2000)

How does an organization engage its workers?

Just as researchers study engagement from many perspectives, employee engagement is also influenced by numerous factors. Employee experiences are shaped by the organization with its mission, structure, policies, and ways of doing business, as well as the people who staff the organization. As Mayo determined (Fry & Raadschelders 2008), the work supervisor is very influential in shaping the worker's experience. Supervisor feedback helps employees understand the "effort-performance-reward" relationship and clarification of expectations (Gaudine & Saks 2001; Wright 2004). Effective communication, trust, and a shared normative framework are important within an organization to foster employee engagement (Watson & Papamarcos 2002). Organization-wide engagement is encouraged by "pushing power, information, knowledge and rewards to lower levels of the organization" (Paul, Niehoff & Turnley 2000). In a study which surveyed 186 supervisor subordinate relationships within one of America's largest financial institutions, researchers found that workers were more engaged when they exhibited personal initiative, when

their jobs had adequate task complexity, and when supervisors led through participatory leadership (Rank, Carsten, Unger & Spector 2007).

Clear organizational expectations and goals are integral to successfully engaging employees and attaining desired results. For example, a 2004 study of 204 systematically coded, workplace-focused, book-length ethnographies found clear indication that "The highest levels of cooperation, commitment, and citizenship depend both on organizational coherence and on supportive employment practices" (Hodson 2004 p 442). On a foundational level, organizations should establish a set of core values (Brewer & Selden 2000; Campbell 1993; Rainey & Steinbauer 1999). This will enable employees to choose the values along with the organization at the initiation of their relationship. From these goals, administrators can develop strategic plans for the organization and managers can work with their staff in developing plans to achieve these goals. This process helps to align the organization and engage employees in taking ownership of the work (Selden, Ingraham & Jacobson 2001). Clear goals will also support all parties to reference the core values when needed for appropriate problem solving. Job goals that are challenging, but perceived by the employee as attainable and worthwhile will have a motivating effect for employees (Wright 2004). By providing a clear mission and expectations, an organization can offer more freedom to employees to do the work with individual style. This will further engage employees and yield better results for the organization (Brewer & Selden 2000).

An organization can shape employee characteristics (Posner & Schmidt 1996; Wright 2001) and as such, the organization should be thoughtful in ensuring this socialization happens purposefully and productively. Communicating organizational expectations during the time of hire, as well as orientation and socialization that reinforce the organization norms and expectations can encourage this socialization. Such measures will also help prevent employee disappointment resulting from inaccurate expectations of their employer and job (Paul, Niehoff & Turnley 2000). Engaged employees are valuable to an organization, but it is important that the process in which an

organization develops that engagement is done purposefully to ensure workers' enthusiasm is directed productively. It is important to foster employee engagement by focusing on goal alignment, clearly communicating boundaries, emphasizing information sharing, and encouraging accountability (Campbell 1993, Hodson 2004).

Results of Engaged Employees

The results of engagement include improved productivity, a reduction in turn-over, and amplified customer focus (Rank, Carston, Unger & Spector 2007, Wallace & Trinka 2009). Organizations need engaged employees that are willing go beyond expectations in order to meet market pressures and run as efficiently as possible (Masson et al 2008). When organizations and employees interests are aligned, employees "can be counted on to act more frequently in ways that are consistent with corporate objectives" (Masson et al 2008) which affects both productivity and client focus. Employee engagement and morale have been shown to have a direct relationship to customer satisfaction, particularly in the exchange of services (Griffith 2001; Ivar Rossberg, Melle, Opjordsmoen, and Friis 2008). These principals also hold true in the public and third sector, for example within hospitals, police forces, and government retail establishments like the Department of Motor Vehicles (Tucker 2004).

As engaged employees affect an organization's bottom line (Macy & Schneider 2008) by reducing operational losses (absenteeism, turn-over, etc,) and increase profitability with more satisfied customers, they simultaneously improve the organization. In addition, engaged employees make better decisions and are more adept at problem-solving, which also leads to greater organizational efficiency (Paul, Niehoff & Turnley 2000). As the organization improves, workers' perception of their organization also improves, thereby causing their engagement with the company to increase (Watson & Papamarcos 2002).

A recent study in which retail bank employees and customers were surveyed showed a reciprocal relationship between engaged employees and satisfied customers (Schneider, White &

Paul 1998). The employees who reported being most satisfied with their work experience also had customers stating the same about their experiences. In another study performed using customer satisfaction data and employee satisfaction data from a chain of grocery stores, researchers concluded that while employee satisfaction does not affect customer rating of price or quality, it does have a significant, positive relationship to perceived service and overall sales (Simon et al. 2009). Ultimately, a service organization endeavors to achieve the purpose of their business, whether it is selling merchandise or delivering social services. This requires some degree of willingness on the part of their client to purchase or accept their product, which is more readily achieved when the client has tolerance or even desire for the service interaction. If the customer is to have the experience the organization desires, then the workers must provide it, which is a more likely outcome when the workers are engaged in their roles.

There are external factors that can affect the level of satisfaction for customers and workers. An individual's characteristics such as, race, religion, gender, national origin, ability, health, education level, sexual orientation, and age can influence satisfaction. One study (Young, Meterko & Desai 2000) found that advanced age, white customers, who were in good health were more satisfied than those with differing characteristics. Other studies (Wharton, Rotolo & Bird 2000) have found in the workplace, women are typically more satisfied than men, more tenured workers are more satisfied than their juniors, and whites are more satisfied than non-white individuals. Additionally, research has also suggested that workplaces with higher staffing levels and more highly educated workers result in higher levels of engagement (Wharton, Rotolo & Bird 2000).

Engagement Challenges in the Public Sector

Some critics assert that the organization and management of personnel within the public sector are "rigid, regressive, rule bound and cumbersome" (Selden, Ingraham & Jacobson p 598). Wright (2001) notes that the missions of public sector organizations often possess a potential for employees to realize altruistic ends, however the bureaucratic structure of the organization hinders

this outcome. Employees may be unable to see their contributions, or effect change at all (Baldwin 1984; Wright 2001). The often conflicting goals of public organizations can foster an environment that discourages self-efficacy and neutralizes aspirations to achieve improvements within the organization (Macalpine & Marsh 2008).

Many large bureaucracies can illustrate engagement challenges, for example state run social work. While a social worker's first priority may arranging the healthiest care possible for a child, laws may prohibit the social worker from achieving this objective. An organization whose structure or policies keep workers from fulfilling the broader mission of the organization can lead employees to experience dissatisfaction in their work. This occurs because what employees want to obtain from their job does not align with what they receive (Wright 2001). Disparities in compensation between public and private sector jobs also can negatively affect engagement among public sector employees (Wright 2001).

Emotional Labor

Some professions require another dimension of engagement of its workers, one in which the employee serves customers on an emotional level. Hochschild (1983) describes three common characteristics of jobs requiring emotional labor: "face-to-face or voice-to-voice contact with the public…they require the worker to produce an emotional state in another person – gratitude or fear…they allow the employer, through training and supervision to exercise a degree of control over the emotional activities of the employees" (p147). Some examples of careers that often require emotional labor include Nursing, Hospitality, Teaching, or Collections. For many, managing their emotions in order to make others feel cheerful is a substantial and essential part of their job (Kotchemidova 2005). While many public service positions require emotional labor, this is not always the case. For example, behind-the-scenes employees who focus on quantitative research analysis or processing payments or permits in the back office setting do not require emotional labor.

Newman, Guy, and Mastracci (2009) build on Hochschild's concept of emotional management by describing more specific ways that workers manage their emotions to fulfill their duties. For example some workers must exercise "emotional chameleon" (p7), by switching their emotions on and off. This is especially true for an undercover detective who has to switch between his or her genuine emotions and those that are required in order to interact in their undercover identity. Others may put on "professional face" (p7), keeping distance from the emotion of a particular situation. Excessive use of this type of emotional management can also lead to emotional numbness or burnout (Newman, Guy & Mastracci 2009).

The ability to listen is important to the exercise of emotional labor. For those working in professions helping others, "like physicians or social workers, such deep listening numbers among the top three abilities of those whose work has been rated as outstanding by their organizations" (Goleman 2006, 88). The emotional work of listening demands a balance of calculating how to communicate based on the effect it will have on the client, comparing the "affective state" (p 31) of one's self to the other, and behaving in a manner that will achieve the desired response from the other (Denhardt & Denhardt 2006). Behind each of these elements of emotional labor is an underlying goal, or understanding of one's job. The emotional exertion is directed towards a desired outcome.

Emotional labor is an important component of many roles in the public sector. Often times, public must servants manage how they experience, control, and display their emotions. This is an essential skill in order to develop trust with their clients in order to be successful in their jobs (Newman, Guy & Mastracci 2009). For example, a 911 dispatch professional must remain calm in order to gain information from distressed clients over the phone, even when they themselves may be frightened by their caller's situation. Similarly, a case worker or attorney must be able to hear their client's story, no matter how horrifying, in order to assist. A police investigator must become an emotional chameleon in order to gather information from others. In each case, the worker must possess a level of engagement in their work, which will allow them to perform the emotional labor,

especially if they have some certainty that their work will lead to positive results (This is a key component to Frese's engagement model).

SECTION THREE

CASE

The healthcare setting is an ideal arena to examine a potential relationship between employee engagement and the provision of service quality. Quality in healthcare includes both technical excellence and hospitality. The quality of service or hospitality provided by the hospital staff is determined, at least in part, by those who experience it, the patient. A patient's satisfaction (or dissatisfaction) impacts the business of healthcare, whether the patient returns for future health needs or recommends the hospital to friends and family. The values of not only clinical excellence, but also service quality are validated by the Center for Medicare and Medicaid Services. This government agency partnered with the Healthcare Quality Alliance creating a complex survey in order to measure these areas and publicly report the data. By using the data, patients can make informed choices regarding their healthcare providers (hchapsonline.org). Measuring patient satisfaction with their hospital experience is a useful tool to gauge the service that staff provides. An examination of the relationship between healthcare worker engagement and patient satisfaction provides a greater understanding of both employee engagement and how engaged employees shape the healthcare setting.

This study examines a single hospital. The hospital is part of a six hospital health system in the Pacific Northwest licensed for 116 beds. Focusing the study within a smaller hospital is beneficial because the majority of patients within this hospital receive care from a limited and isolated employee group, which allows for more precise comparison of staff engagement to patient satisfaction. This creates a potentially clearer understanding of their relationship, which provides insight applicable to other worker-client relationships in the public sector.

The healthcare market in the state of Oregon is unique in many ways, particularly because it is the only state to ration healthcare with its administration of state and federal dollars through the Oregon Health Plan (OHP). This means that thousands of Oregonians on OHP are eligible for predetermined, prioritized selection of medical services and procedures. If one of these individuals need medical treatment that is not included in the plan, they are responsible for the cost without contribution from their OHP insurance. Others without insurance or who are underinsured turn to the Emergency Department for care, and generally do not receive preventive care. Within the health system of this study, the hospital of interest, while the smallest in size, has proportionally the highest Emergency Department utilization within its community.

The data for this study includes a patient satisfaction survey and an employee engagement survey. Two respected data collecting agencies, skilled in constructing and administering legitimate large-scale surveys, collected both patient and employee data sets. The patient satisfaction data was collected through the Healthcare Consumer Assessment of Healthcare Providers Systems (HCAHPS). This survey is formulated to aid consumers in knowledgeably selecting their hospitals while providing constructive feedback to hospitals for guiding patient-centered quality improvement.

The nursing unit-level employee engagement data is from a hospital-wide employee satisfaction survey, which is intended to measure employee engagement. The survey asks employees about their individual feelings, as well as their perceptions of organizational culture that are known to be conducive to engagement, such as voice, diversity, communication, and opportunity for advancement. By addressing employees' feelings and opinions regarding the work environment, areas lacking can be diagnosed and improved for better employee engagement in the organization. Human Resources and the administration work with each manager to create department improvement goals based on the survey results. For example, if employees consistently indicate that they do not feel they have a voice in the organization, the manager may work to create a unit-based practice

council to empower employees to be more involved in the decision making process. Both surveys contain specific questions directly addressing variables of interest to this study.

SECTION FOUR

METHODS

This study tests the potential relationship between engaged employees and satisfied patients. While employee engagement and patient satisfaction are broad concepts, data from quantitative surveys provide specific illustrations of these topics that enable a comparison between the two areas. This comparison illustrates the ways in which nursing unit-level employee engagement, the independent variable, affects patients' satisfaction with hospital experience. Employee engagement is measured by a hospital-wide employee survey. Patient satisfaction is measured with a standardized patient survey completed after discharge. The study employs logistic regression analyses to examine these data sets. The model for this comparison is:

patient satisfaction = employee engagement index + control variables (patient age, patients self-rated health and patient education) + error

Dependent Variable

The dependent variable is patient satisfaction, which is measured in two ways: whether or not a patient indicates they would recommend the hospital to family and friends and an index of patient satisfaction incorporating multiple factors of satisfaction. These variables are based on responses to a number of survey questions assessing the hospital experience. A detailed description of this data is located in Appendix C.

The first measure of patient satisfaction is derived from a single survey item. Here, satisfaction is determined by whether or not a patient indicates he or she would recommend the hospital to family or friends for care. Patients who indicated they would probably or definitely recommend the hospital to their friends and family, were coded as 1, while all others were coded as 0. While non-numeric variable values are generally not appropriate for multiple regression,

transformation to dummy variables creates an appropriate numeric representation. The use of dummy variables, in this case 1 and 0, enables examination of the independent variable and constant variables in the presence and absence of patient satisfaction (Babbie, Halley & Zaino 2007). This measure of satisfaction illustrated that 89 percent of respondents surveyed over this-three year period would recommend this hospital. While historical trending at the state and national level is not readily available to compare from this time period, data from July of 2008 through June of 2009 indicates that the "would recommend" scores for this hospital are at 96 percent positive which is within one percent of the state average for this question, which is 95 percent. The overall generalizability of this study is discussed later.

The second measure of satisfaction is the index of overall patient satisfaction. The purpose of the index is to enable more meaningful conclusions from the regression analysis. The index illustrates multiple dimensions of patient satisfaction within one variable and provides greater variation between the extremes of individual survey items (Babbie, Halley & Zaino 2007). The index includes data from questions addressing how each patient rated his or her experiences with the doctor, nurses, cleanliness of the hospital, pain control, and overall rating of the hospital. Each index combines between two and four survey questions (each with a maximum value of 5). Fourteen of the 22 total questions are included in the patient satisfaction indexes. The values for each concept are equally weighted and combined to create a single patient satisfaction index.

In keeping with national norms, the majority of patients indicated some level of satisfaction (NRC Picker 2010). More than 70 percent of respondents gave perfect scores (5 out of 5) to more than 80 percent of the questions. Because of this, the variable was recoded into a nominal variable with high standards of satisfaction. This was achieved by splitting the respondents between highly satisfied, individuals giving perfect scores to 12 or more of the 14 question- coded 1, and all others (coded 0). This distinction enables a closer examination of the population with the greatest variance (individuals with ratings between 90 percent and the lowest score of 36 percent satisfaction). This is

a group whom hospitals are interested in learning more about in order to potentially improve their patients' experiences and satisfaction scores.

Because the patient survey is administered to individuals of all ages, 111 respondents are younger than age 18. It is likely that these surveys were completed by the guardians of these patients, especially those too young to read or write. Individuals are considered adults at age 18, often move out of their parent's residents at this time, and gain independence from their parents guardianship (and legal right to open their children's mail). To account for variation arising from non-patients completing the surveys, the patient satisfaction variables were duplicated including only adult patients, 18 years and older. The result is four total measures of patient satisfaction.

While both measures of patient satisfaction are similar, they are not identical. Fourteen questions are included in the index, which decreases the total number of respondents participating in the index. Therefore, many respondents are excluded due to missing responses. There are a total of 1,014 respondents included in the index, as opposed to 1,293 who indicated whether or not they would recommend the hospital. This also indicates that while individuals were willing to indicate they would recommend the hospital, they were not willing to respond to all of the questions in the survey so it is impossible to say if the 279 missing respondents were actually satisfied or not. The standards for excellence also differ between the two variables. The patient satisfaction index holds a higher standard, as it requires a patient provide high scores for multiple questions on the survey in order to count as a positive value. The “would recommend” variable only requires one positive response in order to be considered as satisfied with their hospital experience. Thirty percent of respondents were satisfied (as defined by the index) while 90 percent of respondents would recommend the hospital to others.

Independent Variable

Employee engagement is represented as a single index composed of multiple dimensions of nursing unit-level employee engagement, which are measured through an annual employee survey.

For detailed information about this data, please see Appendix C. The index construction is based on recommendations from the survey vendor and Frese's explanation of engagement. The incorporated concepts are, positive commitment to the organization, manager efficacy, perception of changes within the organization, employee self-efficacy, employee voice in the organization, recognition, and opportunity to grow within the organization. The seven indexes were based on a maximum possible score of 100 percent. Employee responses to these survey questions were averaged into one employee engagement index for each nursing unit, also with a minimum possible score of zero an maximum possible score of 100 percent.

The employee engagement data is examined at the nursing unit level. The engagement scores for each nursing unit are combined into the index variable for each year that the survey was administered. The result shown is one annual engagement score for each nursing unit. For data analysis, each patient has been affiliated with an employee engagement score for the year and nursing unit from which they were discharged. This pairing enables the assessment of whether the level of employee engagement on a nursing unit has an effect on the satisfaction level of patients receiving care from that nursing unit.

Control Variables

The patient satisfaction survey addressed several control variables for most patients. These included patient age, race, primary language spoken in the home, highest level of school completed, and overall self rating of health. These questions were considered for inclusion to the model as research shows that one's satisfaction can be influenced by these factors (Riccucci 2002, Wharton, Rotolo & Bird 2000). Factors of patient age, overall health, and education were ultimately held as controls in this analysis. Though race and language spoken at home were demographic items on the survey, 97 percent of respondents were white, which is less varied than the Multnomah County's average of 83.4 percent non-white (US Census Bureau). Only one percent of respondents indicate that English is not their primary language spoken at home, which differs from the Multnomah

County average of 16.6 percent non-English speaking individuals (US Census Bureau). Because of the lack of variation in these items, they were excluded from the final model. For ease in interpreting regression output, the control variables were transformed to the nominal level. Patients who graduated high school (93 percent of respondents), were coded as 1 and those with less education were coded 0. Patients who rated their health positively (78 percent of respondents) were coded as 1 while patients with negatively rated health were coded 0.

While control variables are included in both surveys, they were ultimately only available in the patient data. The unit-level employee data collected and provided by the survey vendor did not include demographic information about employees. Because of this constraint, the study does not address the potential influences of the institution or individual employee characteristics upon employee engagement at the unit level. The survey did ask employees one question about compensation, but this was not included in the final analysis as the study focus looked specifically at the relationship between employee engagement and patient satisfaction and not factors that may precede that relationship.

Methods of analysis

Multiple regressions are useful for prediction and causal analysis (Allison 1999). The study employs logistic regression as the primary mode of data analysis. This enables testing of whether or not engaged employees relate to or have an effect on the level of satisfaction patients report, thus enabling the inclusion of control variables in the models. Two, two-part models test these relationships using logistic regression. The first model compares patient satisfaction, measured by whether or not a patient would recommend the hospital to friends or family for care, to unit-level employee engagement in the first step, then incorporates control variables of patient age, education, and self-rated health in the second step. The second model uses the same progression, substituting the dependent variable with an overall patient satisfaction index.

SECTION FIVE

RESULTS

The first table represents the descriptive statistics for the variables in both models. There were 1,330 patient surveys with corresponding unit-level employee engagement data. The average score of employee engagement was 51.39. The employee engagement score is based on a maximum possible 100 percent, although the highest score achieved within a unit was 77.8. The average patient age was 46 years old when all respondents are included. Because 111 surveys were administered to minors, a second age variable is included, in which only adult patients are considered. The majority (78 percent) of respondents reported their health as good. An even greater majority (91 percent) reported having at least graduated from high school. A large proportion of respondents (89 percent) indicated satisfaction, in that they would recommend the hospital to others for care. The patient satisfaction index, however, indicates, that only 30 percent of respondents were highly satisfied with their experience.

Table 1. Items included in the Patient Satisfaction Model

	Minimum	Maximum	Mean	Std. Deviation
Employee engagement index of 100%	40.87	77.8	55.17	13.044
Patient age (all respondents)	0	95	46.02	24.566
Patient age (adult only)	18	95	50.71	21.528
Patient self-reported health	0	1	0.7838	0.41199
Patient college graduate	0	1	0.2143	0.41053
Patient satisfaction, would recommend	0	1	0.8979	0.30288
Patient satisfaction nominal index	0	1	0.2988	0.45797
Adult-only patient satisfaction nominal index	0	1	0.3098	0.46267
Number of respondents: 1330				

Table two shows the results of the patient satisfaction model using the patient satisfaction dependent variable of whether or not a patient would recommend the hospital to friends and family for care. This dependent variable was comprised of one question from the original patient survey. The Omnibus tests of Chi-squared[3] showed statistical significance in the goodness of fit in the first part of the model, which includes only nursing unit-level employee engagement (p=.004), as well as the second part of the model, which includes the control variables (p=.004). This model illustrates that nursing unit-level employee engagement is significant, both when including control variables, as well as in their absence. Each one-unit increase in employees' reported engagement at the nursing unit-level results in a 4.7 percent increase in the odds that a patient will be willing to recommend the hospital to friends and family for care (when all other control variables are held constant). The model also suggests that each year older a patient becomes (up to age 95), the patient is 3.2 percent more likely to recommend the hospital to others.

Table 2. Patient Satisfaction (Would Recommend to Friends and Family) Logistic Regression Models

	Model 1: Employee Engagement Index Only						Model 2: Employee Engagement Index with Controls					
Variable	B	SE	p	Exp (B)	95% CI OR		B	SE	p	Exp (B)	95% CI OR	
Employee Engagement	0.021	0.008	.006	1.022	1.006	1.037	0.045	0.015	0.002	1.047	1.017	1.077
Patient Age							.033	.012	0.005	1.034	1.010	1.058
Patient college graduate							.232	.421	.583	1.261	.552	2.878
Patient self-rated health							.604	.433	.163	1.829	.783	4.272
	model x2=8.142, df=1, p<.01						model x2=12.627, df=4, p<.01					

Table three shows the model of whether a patient would recommend the hospital to others for care with more specific conditions. In this version, only adult patients, 18 years and older are

[3] While R Squared was considered as a measure for goodness of fit, Chi Squared was ultimately used as R Squared is often considered inappropriate for logistic regression models.

included in an attempt ensure that the patient satisfaction variable represents actual patient assessment of their satisfaction. Little change is apparent with the exclusion of minors from the model. Employee engagement remains significant in determining whether or not a patient will recommend the hospital for care.

Table 3. Adult-Only Patient Satisfaction (Would Recommend to Friends and Family) Logistic Regression Models

	Model 1: Employee Engagement Index Only						Model 2: Employee Engagement Index with Controls					
Variable	B	SE	p	Exp (B)	95% CI OR		B	SE	p	Exp (B)	95% CI OR	
Employee Engagement	0.020	0.008	.013	1.020	1.004	1.036	0.045	0.015	0.002	1.046	1.016	1.077
Adult-Patient Age							.033	.012	0.005	1.033	1.010	1.057
Patient college graduate							.232	.421	.583	1.261	.552	2.878
Patient self-rated health							.604	.433	.163	1.829	.783	4.272
	model x2=8.142, df=1, p<.05						model x2=12.627, df=4, p<.01					

Table four shows the results of the patient satisfaction model using the dependent variable of the patient satisfaction index. Logistic regression analysis determined a nearly-significant relationship between patient satisfaction and nursing unit-level employee engagement in the absence of control variables. Initially, this suggests that engaged employee groups have a positive effect on their patients' satisfaction with the hospital experiences.

The influence of nursing unit-level employee engagement upon patient satisfaction looks less significant after adding the control variables of patient age, education, and overall health to the model. The correlation matrix shown in Appendix B confirms a lack of multicollinearity, verifying that each variable is testing a unique concept. This second part of the model illustrates that nursing unit-level employee engagement has no significant relation to the odds of patient satisfaction on the nursing unit. Instead, the model indicates that statistically significant factors in predicting patient satisfaction

at that level include a patient's age and whether a patient rates his or her overall health as good. Each one year increase in patient age results in a 1.5 percent increase in the odds the patient will be satisfied with his or her hospital experience. Patients who rate their health positively (good or better), are nearly three times more likely to be satisfied with their hospital experience.

Table 4. Patient Satisfaction (Satisfaction Index) Logistic Regression Models

	Model 1: Employee Engagement Index Only						Model 2: Employee Engagement Index with Controls					
Variable	B	SE	p	Exp (B)	95% CI OR		B	SE	p	Exp (B)	95% CI OR	
Employee Engagement	0.009	0.005	.058	1.009	1.000	1.019	0.012	0.010	0.204	1.012	.992	1.035
Patient Age							.015	.007	.042	1.015	1.001	1.029
Patient college graduate							-.187	.221	.711	.830	.5387	1.280
Patient self-rated health							.918	.294	.002	2.501	1.407	4.457
	model x2=3.561, df=1, p<.05						model x2=13.989, df=4, p<.05					

Table five illustrates the effect of removing minors from consideration in the model. Just as with the broad measure of patient satisfaction, the model employing the comprehensive index experienced little effect from removing the 111 respondents under age 18. Patient age and self rated health both continue to indicate a significant relationship to patient satisfaction.

Table 5. Adult-Only Patient Satisfaction (Satisfaction Index) Logistic Regression Models												
	Model 1: Employee Engagement Index Only						Model 2: Employee Engagement Index with Controls					
Variable	B	SE	p	Exp (B)	95% CI OR		B	SE	p	Exp (B)	95% CI OR	
Employee Engagement	0.020	0.005	.012	1.008	.998	1.018	0.012	0.010	0.204	1.013	.993	1.032
Adult-Patient Age							.015	.007	0.042	1.015	1.001	1.029
Patient college graduate							-.187	.221	.399	.830	.537	1.280
Patient self-rated health							.918	.294	.002	2.504	1.407	4.457
	model x2=3.561, df=1, p<.05						model x2=13.989, df=4, p<.05					

The first model rejects the null hypothesis showing a significant relationship between patient satisfaction and nursing unit-level employee engagement, while the second model fails to reject the null hypothesis.

SECTION SIX

DISCUSSION

The comparison of the two variables for patient satisfaction suggests that a patient may not need to be entirely satisfied in order to willingly recommend the hospital to others. It also suggests that while a patient may rate components of his or her hospital experience as unsatisfactory, the overall experience was positive. The index represents a comprehensive overall rating instead of asking the patient for their overall rating based on the dimensions included in the index. Therefore, the importance of each component of the index may not be weighted according to the patients own personal assessment. Some patients' satisfaction may be more influenced by their experience with their nurses while others may be more influenced by the cleanliness of their environment. Alternately, patients may be most influenced by whatever component of their experience was negative or below their expectations, which the index is not able to measure.

The findings are relevant to organizational goal setting for both client satisfaction and employee engagement. As the study illustrates, the level of overall employee engagement impacts

whether a client will recommend the organization to others. If an organization wants new clients through existing client referrals, then working to engage their employees will likely help in achieving that goal. The patient satisfaction index has very high standards for satisfaction; therefore, if a hospital desires to achieve high levels of patient satisfaction in all of the areas considered in the index, they will need to pay attention to more than just overall employee engagement to meet that goal.

The generalizability of the findings may be somewhat limited. This hospital is only licensed for 116 beds and is considered by its organization to be a community hospital with services limited to a general level of care (specialized programs or services are not provided). The most current "would recommend scores," shown on http://www.medicare.gov/Download/DownloaddbInterim.asp, does, however, illustrate that the hospital is within one percentage point of the average score for its state.

Characteristics of an organization influence employee engagement. For example, policies like patient ratios for nurses, standard shift length and scheduling practices, and compensation and benefits are all part of the employee's experience that must reflect in the overall engagement of an individual. Similarly, the manner in which supervisors relate with other workers must effect engagement, as modifying management strategies is a primary use of the employee engagement survey within the hospital. This data was not available from the survey vendor for this study, with exception to one survey item, which limits its overall scope. Because of this, one cannot say how institutional characteristics mediate the level of engagement that the employees experience based on this study. One survey item asked employees if they felt they were paid fairly for their work. This was not included in the model because it was only one possible factor to influence employee engagement and there was not additional information available to more completely illustrate the potential hospital environmental effects on employee engagement. This study is however, able to examine how the level of engagement on a unit, however it was created, may impact patient satisfaction.

The models of patient satisfaction and employee engagement relate to the literature. Engaged workers are valuable to an organization for a number of reasons, even if they do not always directly affect client satisfaction. Retention of employees is a result of engagement, which saves an organization the expense of recruiting new employees. This creates a more stable environment where organizational culture is more readily affected. In the healthcare setting, engagement helps ensure the continuity of care that patients expect. Having a stable pool of workers delivering safe and clinically sound care is important to the patients, not to mention to maintaining accreditation while avoiding legal consequences of error. These factors potentially contribute to the hospital experience that prompts patients' willingness to recommend the hospital based on the engaged workers they encounter.

Consideration for patient age in the models did not prove to have a substantial impact on the results. This may be an indication that the adults that fill out the surveys on behalf of children have similar perceptions of the care experience as those adults who directly receive it. The option for individuals to complete the survey on behalf of others is a weakness of the data. Assuming that this happens primarily with parents completing the survey on behalf of their children, it is uncertain if the child was truly satisfied with his or her experience, or if the hospital staff only met the expectations of the parent.

The component of emotional labor provides further insight in the findings of the study. Because health care work requires the engagement of workers' emotions to do their jobs, some level of engagement may be inherent to each employee, and therefore not captured by the engagement survey. That base level of engagement may affect customer satisfaction but cannot be measured in the healthcare setting with these particular survey tools. This may be because the survey items do not address components of emotional labor and the employees' relation to the patient, but rather focus on the employee relationship with the organization. Employees' emotional engagement might be better measured through examining retention in the healthcare field, or personality testing to isolate the

emotional capability and exertion of employees in patient care. One might argue that this emotional investment or expectation thereof, might also cause employees to provide answers to the survey that reflect the expectations of the organization or to avoid hurting their manager's feelings, rather than their authentic feelings. The survey administration does, however, ensure anonymity of the respondent is preserved. The survey is also administered nationally to healthcare workers, so it is likely that if emotional issues were inappropriately addressed by the survey, it would have been dealt with during the validation process.

SECTION SEVEN

CONCLUSION

On a broader level, it would be interesting to explore beyond the patients' perceptions of their hospital experience based on the service they receive and expand to include the actual clinical outcomes the patients experience. Are engaged workers more skilled at technically performing their jobs? It would be fascinating to collect longitudinal data on individual employees over time to measure the specific changes in engagement and to derive more specific results from the effect of these employees on their patients' hospital experiences. Patient data in this type of study could include the type of clinical care, severity of patient illness, and clinical outcome from patient charts. It could also include a qualitative component of in-depth interviews with patients to better understand their experiences.

If this study were conducted again in the future, it would be valuable to explore emotional labor more intentionally. As discussed above, emotional labor may be inherent to all healthcare workers such that a standard engagement survey does not truly address it. This could be addressed by adding survey questions, with the support of the surveying agency, to ask about employees' emotional experiences at work. For example, a question might ask if employees feel emotionally exhausted from their work, if they feel they have sufficient resources to work through emotional

challenges of their job, or if they feel the pressure to perform emotionally is reasonable. A variable to account for worker tenure and turnover might also assist in fully understanding emotional labor from the perspective of emotional burnout. Collecting information on the acuity of the patients treated by each hospital unit could help illustrate the type of emotional labor employees perform (whether they work with dying patients, births, large families, etc.). A separate survey tool to employ with nursing unit staff might focus solely on the emotional component of their jobs. This might be more appropriate for in-depth interviews so each employee could explained his or her experience precisely. This might cover information about their interactions with their patients, patient families, coworkers, and the institution. Researchers could then code responses for various components of emotional labor to see if this is actually a significant and common component of employee engagement.

More research is needed to further illustrate and define the ways in which employee engagement affect customers in healthcare and throughout the public sector. Strengths of the surveys include the integrity of the data that was collected and provided by the survey vendors. Future research would benefit from additional survey items. For example, more detailed demographic information on patients such as age, socioeconomic status, insurance coverage, length of stay, and clinical outcome could provide further insight. It would also be interesting to survey patients at admission to assess their expectations for service and care and then survey them after discharge to assess if those expectations are met, or are indeed realistic. More information to construct a richer representation of engagement is also needed. While it was worthwhile to analyze engagement at the unit level, it would be ideal to have employee data at the employee level of detail, especially if it were tied to a personal identification code that could track change over time and tenure. With the current data, one can only consider the environment of the unit, but with more detail, there could be better analysis of why the unit culture is a particular way and what contributes to cultural changes on the unit. A vast array of valuable information on employee engagement and patient satisfaction remain uncaptured and further research is needed to expand knowledge in these areas.

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APPENDIX A

2008 EMPLOYEE ENGAGEMENT SURVEY

1. Manager's Name:
2. Work Location:
3. Dept Name (circle one):
4. Job Class:
5. Job Status (circle one): Full Time Part Time Other
6. Age (circle one): Under 25 yrs. 25–35 yrs. 36-45 yrs. 46-55 yrs. Over 55 yrs.
7. Years of Service (circle one): Less than 1 yr. 1-2 yrs. 3-5 yrs. 6-10 yrs. 11-15 yrs 16-20 yrs. More than 20 yrs.

	Strongly Disagree 1	Disagree 2	Neither Agree or Disagree 3	Agree 4	Strongly Agree 5
1. Legacy is highly respected by people in the communities we serve.					
2. Legacy is committed to social responsibility.					
3. Legacy is committed to service excellence.					
4. The quality of patient care at Legacy is what I would want for a member of my family.					
5. Policies, practices and procedures do not prevent me from doing my job the way it should be done.					
6. Legacy has developed the structures and systems necessary to provide excellent service.					
7. I have the authority to take actions that are needed to ensure good customer/patient service.					
8. Overall, I am extremely satisfied with Legacy as a place to work.					
9. I would gladly refer a good friend or family member to Legacy for employment.					
10. I rarely think about looking for a new job with another company.					
11. Legacy makes it easy for people from diverse backgrounds to fit in and be accepted.					

	Strongly Disagree 1	Disagree 2	Neither Agree or Disagree 3	Agree 4	Strongly Agree 5
12. Diverse voices and perspectives (e.g. ethnicity, gender, age, sexual orientation, ideology, race, class, country of origin) are represented and welcomed in my unit.					
13. I feel like I have a voice in the organization.					
14. I believe Legacy will take the appropriate action on the results of this survey.					
15. I believe Legacy has an outstanding future.					
16. Our Legacy senior leaders (Chief Administrative Officer/Hospital Administrator, VP and above) are active role models for Legacy's core values.					
17. Our hospital management team members (Chief Administrative Officer/Hospital Administrator and Directors) are active role models for Legacy's core values.					
18. I trust the leadership of Legacy (Manager and above).					
19. The leadership of Legacy (Manager and above) has communicated a vision of the future that motivates me.					
20. I am kept informed about important activities within Legacy.					
21. Changes are explained to me rather than just being told.					
22. Legacy senior leaders (Chief Administrative Officer/Hospital Administrator, VP and above) do a good job of communicating the reasons behind important changes that are made.					
23. I feel free to discuss work hazards and safety issues freely and openly.					
24. The safety and physical working conditions (space, lighting, noise, etc.) are good where I work.					
25. Our environment encourages reporting medical errors and patient safety issues.					
26. I know how to report things I might see or know of that are not within the laws and rules.					
27. Legacy is committed to clinical quality and patient safety.					
28. My manager demonstrates ethical and honest behavior.					
29. I have a manager who listens to me.					
30. My manager clearly communicates what is expected of me.					

31. My manager effectively communicates organizational goals and objectives.					
32. My manager is an outstanding leader.					
33. My manager keeps his/her commitments.					
	Strongly Disagree 1	**Disagree 2**	**Neither Agree or Disagree 3**	**Agree 4**	**Strongly Agree 5**
34. New employees are welcomed into my work unit.					
35. Physicians at my hospital treat me with respect.					
36. The people I work with deliver excellent quality and service.					
37. I feel that I am part of a team.					
38. My manager emphasizes and builds good teamwork.					
39. There is good teamwork and cooperation between departments at my hospital.					
40. I am able to manage my work responsibilities in a way that allows me to maintain a healthy balance between work and home.					
41. The number of hours I am expected to work is reasonable.					
42. My manager recognizes the need to balance personal responsibilities and work responsibilities.					
43. I understand my employee benefits.					
44. I am paid fairly for the work I do.					
45. I have goals that motivate me to achieve more.					
46. I am given a real opportunity to improve my skills at Legacy.					
47. My performance reviews have been useful in helping me to improve my job performance.					
48. Legacy recognizes outstanding performance.					
49. I regularly receive appropriate recognition when I do a good job.					
50. I am satisfied with my opportunities for advancement.					
51. If you could tell our new CEO one thing, what would it be?					

THANK YOU

APPENDIX B

CORRELATION MATRIX

Table 2. Correlation Matrix

	Employee Engagement	Patient satisfaction index	Adult-only Patient satisfaction index	Patient satisfaction would recommend	Patient age	Patient college graduate	Patient self-rated health
Employee Engagement	1						
Patient satisfaction index	0.06	1					
Adult-only Patient satisfaction index	0.052	1	1				
Patient satisfaction would recommend	0.077	0.186	0.188	1			
Patient age	-0.395	0.054	0.014	0.071	1		
Patient college graduate	0.077	-0.014	-0.014	0.027	-0.093	1	
Patient self-rated health	0.368	0.112	0.112	0.044	-0.47	0.149	1

This table verifies that the variables in the model are not strongly correlated and are measuring distinct concepts.

APPENDIX C

EXPLANATION OF THE DATA

Patient Satisfaction Data

The HCAHPS, a nationally administered survey, collected data on patient satisfaction. This survey asks recently discharged hospital patients for feedback about their hospital experiences. It includes questions about interactions with and accessibility of doctors and nurses, the comfort and cleanliness of the hospital environment, education about their procedure, and plans for home care. The survey also collects demographic information about the unit and date of discharge, patient age, education, race, and self-rated health.

The HCAHP Survey is an evaluation tool that enables direct comparison of healthcare institutions. The survey is administered to adult, acute-care patients with a few exclusions (expired patients, most psychiatric patients, and patients discharged to hospice). Participants are selected through simple random sampling of eligible patients. The health system's internal billing department forwards patient information including mailing address, date of discharge, and unit from which the patient was discharged within a week of processing. The time the survey is sent is based on date of discharge. The selection of patients and administration of the survey is done on continual bases by the survey vendor, NRC Picker, in order to achieve a desired level of statistical reliability. The target number of surveys is 300 per year, which breaks down to about 25 completed surveys each month for each hospital. Non-respondents receive a second mailing of the survey within three weeks (http://www.nrcpicker.com/PCC%20Institute/ HCAHPS/Pages/HCAHPSProtocol.aspx).

Survey groups are broken into categories based on where they received treatment in the hospital. Three principal units for treatment include inpatient Medical-Surgical unit, the Emergency Department or the Family Birth Center. Patients are identified with the units from which they were discharged.

The first 22 questions of each survey are identical collecting information that is reported publicly by the Centers for Medicare and Medicaid Services (CMS). An additional 19 to 22 questions make up the second half of the survey, which are more specific to the patients' experiences with hospital-specific issues (admissions process, confidence in doctors and nurses, education about procedure, planning for self-care at home, and billing). The last six questions address demographics (rating of personal health, education level, race, language, and one open ended question for suggestions). All questions have Likert scale multiple choice responses except the last question which has space for an open-ended response ("If you could change one thing about this hospital, what would it be?").

AHRQ validates the survey through a rigorous survey validation process, including "a public call for measures; literature review; cognitive interviews; consumer testing and focus groups; stakeholder input; a large-scale pilot test; small-scale field tests; and responding to hundreds off public comments generated by several Federal Register notices" (Center for Medicare & Medicaid Services, "Information for Professionals") The National Quality Forum endorses the survey as part of the first national hospital comparison project. As such, hospitals that chose not to participate lose two percent of their reimbursements from CMS (hcahpsonline.org "HCAHPS Fact Sheet").

Strengths of this data include careful survey construction and data collection. CMS collaborated with the Agency for Healthcare Research and Quality (AHRQ) developing the HCAHPS. The sample size is relatively large (N>1300) and is accumulated continually through ongoing administration of the survey to discharged patients. While it is a strength that the data can be broken down by date and unit of discharge, a weakness of this data is that the patient is only identified with the unit of discharge, without a way to track the other departments that the patient may have encountered. Other weaknesses of this data are that, while most of questions are exactly the same, some are not and most Emergency Department surveys do not collect demographic

information. The survey limits the amount of demographic information it collects, for example, it does not measure income, length of stay, or health outcomes related to the hospital stay.

Employee Survey Data

An employee survey measures employee engagement. Kenexa, an outside agency administers the survey annually to all employees in collaboration with the health system. The survey collects information about employees' perceptions of the organization, loyalty, diversity, voice, leadership, communication, safety, assessment of one's manager, belonging, expectations, compensation and recognition, and satisfaction.

Survey administration occurs online through employee email, to which the vast majority of employees have access. The chief executive officer sends the initial email inviting employees to participate. The survey is available to complete online for two weeks. The site administrator and human resources representative send out reminders throughout the two week period. All email communication to staff includes the survey link.

Each hospital designates at least one computer for employees to use to complete the ten to fifteen minute survey. These are available primarily for employees who do not usually use a computer in their job, for example the housekeeping staff. There is also a hard copy of the survey available for the small population of employees who are not comfortable using a computer to complete the survey. Managers are responsible for encouraging employees to take the survey, and providing opportunities for their staff to take the survey during work hours. The survey is intended to be anonymous. Employees do not include their name or employee identification number on the survey. They do, however, select their manager's name, their work location, and their department name from dropdown boxes. The introductory text informs respondents that if their department is too small to enable anonymity, their responses will be combined with the next larger group.

Questions on the survey assess a range of factors including: perceptions of the organization, loyalty, diversity, voice, leadership, communication, safety, assessment of one's manager, belonging,

expectations, compensation and recognition, and satisfaction. All questions are based on a five point Likert scale ranging from strongly disagree, neither agree nor disagree, to strongly agree. The final question is open-ended, asking, "If you could tell the CEO one thing, what would it be?"

The survey vendor collects and interprets the data. Senior leadership present results to managers at the annual leadership conference, approximately two months after the end of the survey, who then share the results with their staffs. The chief administrative officer also holds 'state of the hospital' presentations following the leadership conference, open to all staff, to share the results of the survey. Managers are required to work with their staffs to develop departmental goals in response to the survey results that are monitored by the annual review process.

The validity of the survey is addressed by Kenexa on their website (kenexa.com) in a section titled "Validity/ Legal Defensibility." Here, the state that they build "fair and legally defensible" assessment programs that are compliant with current local, state, and federal laws and they ensure that employee assessment processes are "valid and reliable." In a presentation, the Senior Vice President of Human Resources informed organizational leaders that many questions on the survey are used nationally by Kenexa among numerous large organizations like Petco, such that benchmarking on elements of engagement are a benefit of this survey and vendor (personal communication, April 8, 2009).

Because the employee survey is administered annually, patient data is grouped in corresponding twelve month units to enable comparison. Each year ends with the survey administration date because the survey measures the manager input on the environment of the prior year. Once the survey is administered, managers implement new plans to influence the engagement of employees.

A substantial strength to this survey is the level of participation by staff. In 2008, 70 percent of the hospital staff completed the survey and the results were aggregated at the unit level. Since patients encounter multiple staff members during their stay, using data at this level illustrates the

climate of engagement in each unit that patients experience. A weakness of the survey is that it has only been administered annually for three years, so it will not be possible to observe long term trends.