

Institute for Motivational Living

Organizational Factors related to Improving Quality of Patient Care:

Technical Report of the Celtic Healthcare Survey

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Overview and Impetus for the Study

The quality of patient care resides in the experience and knowledge of the bedside nurses Force (2005, p. 336; Peltier, et al. 2009). Several studies have demonstrated that employee empowerment, engagement, and satisfaction are elements leading to quality patient care (Peltier, et al. 2009). In fact, healthcare organizations that exhibit high employee satisfaction have (a) accessible and effective leadership, (b) frequent communication, and (c) empower employees to satisfy patients (Fassel, 2003). High quality patient care is a primary outcome of interest and is mediated by factors such as leadership style (behavior), job satisfaction and employee retention – each having a reciprocal relationship with the other. Related to quality patient care are issues of nursing retention and recruitment. From a financial perspective, the cost of replacing a registered nurse starts at 42,000 per year for a medical and surgical nurse and 64,000 for an intensive care nurse (Force, 2005, p. 336). Compounding the issue is the fact that innovative and proactive recruitment strategies are financially ineffective if the organization is unable to retain employees due to the high cost of the employee replacement. To this end, healthcare and/or hospital administrators are seeking answers to the questions (1) What makes nurses remain at their employment in hospitals?, (2) What leadership traits or behaviors positively influence employee

retention and job satisfaction?, and perhaps most importantly (3) Does the quality of patient care depend on (or is it influenced by) the mediating factors of leadership behavior, job satisfaction and employee retention? An examination of quality of patient care in relation to leadership behavior, organizational climate, goals, effectiveness, employee satisfaction is the focus of this report.

This technical report examines the results of a longitudinal study conducted by The Institute for Motivational Living (IML) and PeopleKeys for acquiring employee-centered information about their perception of the climate, goals, effectiveness, quality of care and services provided by the Celtic Healthcare organization. The first part of the report provides information regarding the psychometric properties of the survey instrument used to acquire participant responses for the Celtic Healthcare organization conducted in 2008 and 2010. The second part of the report provides tangential, supporting evidence that the survey instrument used in the Celtic Healthcare study provides an accurate source of information specific to organizational leadership style (or behavior), employee/job satisfaction, and employee retention leading to quality of patient care.

The Celtic Healthcare Study

This section of the report provides information related to the psychometric properties of a *Medical Keys* survey instrument developed by the Institute for Motivational Living and PeopleKeys for acquiring employee-centered information about their perception of the climate, goals, effectiveness, quality of care and services provided by the Celtic Healthcare organization. Employees of the Celtic Healthcare organization served as the participants/respondents for the survey in this report. All responses were anonymous. This white paper reports on the

psychometric properties of the survey instrument based on sample responses from the Celtic Healthcare organization collected during calendar years 2008 and 2010. Specifically, evidence for various components of the validity of scores from the survey instrument is provided along with evidence for subscale and total instrument score reliability. The evidence reported here follows the guidelines established by the American Educational Research Association, American Psychological Association and National Council on Measurement in Education (AERA, APA, NCME, 1999). The results provide insight about the utility and psychometric aspects of the instrument in preparation for future more extensive studies using the survey instrument.

Celtic Healthcare Samples: 2008 and 2010

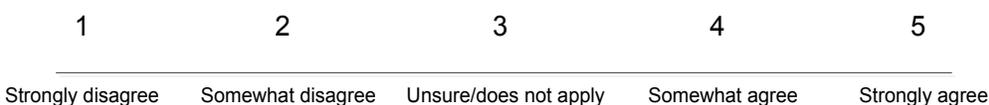
Sample Characteristics and Limitations

The sample size for the 2008 sample included twenty two participants (N=22) and (N=29) participants in 2010. The samples were composed of the same respondents in 2008 and 2010 with the exception of 7 additional people responding in 2010. The responses to survey statements were anonymous. This work reports on validity evidence based on content, face, response process and internal structure. In all instances, the statistical results should be interpreted in consideration of the small sample size (e.g., N=22 in 2008/N=29 in 2010). For example, when sample sizes are small (e.g., less than N=30) in correlational studies and less than N=100 in reliability studies, standard errors of correlation coefficients and reliability estimates are often unacceptably large. However, the results provide *preliminary* or initial evidence that the survey instrument is measuring what it is intended to measure and do so reliably.

Survey Item Response Format

Survey items were developed based on the results of focus groups in conjunction with Institute of Motivational Living staff. Guidelines were followed for item writing and criteria for content inclusion according to those published in Crocker and Algina (1986) and Ebel and Frisbie (1991). The goal of the survey statements was to elicit level of agreement from respondents on clusters of items or statements about the organization and its culture. The following Likert-type response scale format measuring agreement was used for the survey items and is illustrated in Figure 1.

Figure 1. Survey item response scale



The survey instrument used in the Celtic Healthcare study consists of twelve content areas where respondents were asked to respond to according to the scale response format in Figure 1. The twelve content areas and number of survey items/statements included: (1) Planning for the future (8 items), (2) Individual ownership (8 items), (3) Communication (8 items), (4) Structure and job clarity (8 items), (5) Appreciation and support (8 items), (6) Organizational mission focus (8 items), (7) Career opportunity and advancement (8 items), (8) Quality control/corrective actions (8 items), (9) Culture and environment (8 items), (10) Quality of care and services (10 items), Quality of support services in the organization (12 items), and Quality of care for each service provided (5 items). The complete survey instruments and item statements can be viewed in Appendix A of this report. *Note that in the analysis of the Celtic survey data only item clusters 1 through 11 were used.* Table 1 presents positive change in percentages for the 2008 and 2010

samples. Percent positive change is defined as the proportion of respondents responding in the category "somewhat agree" or "strongly agree". The results in Table reveal that in all 9 areas, positive change was exhibited. The largest change occurred in area number 8 (quality of support services in the organization). Finally, although positive change as observed across all 9 areas, the change was not statistically significant. This result is due in part to small sample size.

Table 1. Percent Positive Change in Response: 2008 - 2010

Percent Positive Results	2008 (N=22)	2010 (N=29)	Z-statistic	<i>p</i>
1. Individual Ownership and Mission	75.00%	85.00%	0.90	0.37
2. Communication	72.50%	89.17%	1.53	0.12
3. Structure and Job Clarity	87.50%	93.33%	0.71	0.47
4. Appreciation and Support	80.00%	94.17%	1.54	0.12
5. Organizational Mission Focus	82.50%	94.17%	1.32	0.18
6. Quality Control/Corrective Actions	81.25%	91.67%	1.10	0.27
7. Quality of Care and Services	90.91%	93.94%	0.41	0.68
8. Quality of Support Services in the Organization	69.09%	89.70%	1.85	0.06
9. Quality of Care for Each Service Provided	82.00%	93.33%	1.25	0.21

Validity of Celtic Healthcare Survey Subscales

In psychological measurement, validity as applied to a test or other measurement device is a judgment or estimate of how well a test measures what it purports to measure in a particular context. Specifically, validity is a judgment based on evidence about the appropriateness of inferences drawn from test scores (AERA, APA, NCME, 1999; Cohen & Swerdlik, 2010). An inference is a logical deduction using quantitative and qualitative information. The term "test" is a generic term that represents any type device used for the purpose of psychological measurement. In this study, the psychological measurement device used was a survey instrument composed of subsets of statements tapping a particular content area in way that respondents express their level of agreement. An underlying assumption about judgments of a survey

instrument's validity is how useful it is for a particular purpose with a particular population of people. Importantly, no test or measurement instrument is *universally valid* or appropriate for all times, uses and populations or samples. To this end, measurement devices (e.g., surveys, achievement or ability tests) may be shown to be valid within reasonable boundaries of a proposed use.

The validity of a test, survey or other measurement device must be reestablished each time the culture (e.g., environmental or organizational) or setting changes. Validation is the process of gathering and evaluating quantitative and qualitative evidence about validity. It is the responsibility of the test, survey or instrument developer to supply validity evidence so as to inform the public about the accuracy of any results published. Establishing evidence for the validity of a test or instrument involves consideration of (1) the *content* of the test or instrument based on what information is presented in the items or questions, (2) *criterion-related* evidence which is based on relating scores on the test (or in this study responses to survey items) to other measures or scores external to the study, and (3) *construct evidence* which involves understanding how the internal structure, associations with other variables, consequences of test use, test content and response processes to the items, can be understood or interpreted within the context of a theoretical framework (e.g., personality theory, intelligence theory, or organizational behavior theory). Additionally, *face validity* is sometimes presented as an additional source of validity evidence that has a certain amount of utility for test takers or survey respondents. Although face validity is not considered a statistical form of validity evidence, it is a useful source of evidence in the case of the present study because respondents should be confident that the survey items are accurately capturing their attitude toward the organization.

Face Validity Evidence

Face validity evidence consists of a subjective judgment on the part of the respondent or test taker regarding whether the items or questions *measure what they appear to be measuring* (e.g., on the face of it). Although not statistical in nature, face validity is important in organizational settings because a lack of face validity may result in a lack of confidence on the part of the respondent; a result that can affect the manner in which a person responds to survey items. In the case of the Celtic Healthcare survey, respondents reported that the items displayed a high degree of face validity. Evidence of face validity suggests that respondents were very likely to have responded accurately to the statements on the survey.

Evidence of Item Content Validity

Content validity evidence involves how adequately an instrument samples behavior, attitude or cognitive ability representative of some ideal or target universe of information. Alternatively, a threat to content validity occurs when *construct-irrelevant content* is included on a test or instrument. The term *construct* represents the underlying “thing” being measured by participants’ responses to survey items or statements. For example returning to Table 1, each of the 9 areas being measured (i.e. the constructs) is captured in the item-level subcomponents of the main content areas. To this end, given the goals of the Celtic Healthcare survey to examine the quality of patient care in relation to leadership behavior, organizational climate, goals, effectiveness, employee satisfaction, survey items were constructed targeting aspects of these elements by a panel of experts intimately familiar with healthcare organizations.

In the Celtic survey instrument, the sample of behavior is represented as employee perceptions regarding specific aspects of the healthcare organization. To ensure accuracy and/or correctness of item content relative to the goal of the study, one expects that the survey items contain content that reflects the *true* state of affairs at the healthcare organization relative to leadership behavior, organizational climate, goals, effectiveness, employee satisfaction and patient care. Ensuring evidence of appropriate item content involves thoughtfully constructing a blueprint or matrix of content or material that accurately taps the correct issue and subsequently elicits an accurate response. For the Celtic survey instrument, content of the items was statistically evaluated using correlation analysis. Appendix A provides the survey statements and correlation results for each *cluster* of survey items tapping a particular target area linked to the purpose of the survey instrument. Overall, correlation analyses revealed that the statements within clusters were moderately to strongly correlated - a desired outcome for establishing one element of adequate psychometric evidence. In only a single instance (item cluster 2, year 2010) did the correlation analysis yield poor results.

Validity Evidence Based on Response Processes

The analysis of response processes provides validity evidence relative to the fit between the construct and the nature of the engagement of the response (i.e. in this case attitude) on the part of the respondents. For example, if an instrument is intended to capture information about attitudes toward the organization relative to certain issues, it is important that the respondents are in fact responding in a manner that is accurate (e.g., unaffected by the pressure of the organization). In the present study, people's responses were anonymous and not expected to be influenced by organizational pressure. Additionally, there were no cognitive processes related to

the respondents' attitudes believed to influence the nature of their responses. Another source of evidence of accurate response processes was substantiated by information *volunteered* by respondents about their responses to certain statements on the instrument. Finally, evidence of response processes was established by analyzing parts (e.g., item subsets or clusters) comprising the instrument. Related to an analysis of the parts or subsets of item statements, next we turn to evidence based on internal structure, including item homogeneity.

Validity Evidence Based on Internal Structure

Examining the internal structure of a set of items or questions involves verifying “the degree to which the relationships among test items and/or test composite scores conform to the *construct* on which the proposed test score interpretation is based” AERA, APA, NCME, 1999, p. 13). In the present study, the following strategies were used to evaluate the internal structure of the Celtic and Heritage surveys (1) item homogeneity and (2) evidence from distinct groups. Factor analysis (exploratory or confirmatory) is a mathematical procedure typically used to aid in establishing evidence for the internal structure and construct validity of a test or instrument.

Factor analysis was not used to investigate the internal structure of the survey in this study due to small sample size.

According to Krathwohl (1998), internal consistency reliability indicates whether or not the items are homogeneous, measure a specific construct, and as expected, correlate highly with one another. High internal consistency reliability is necessary to ensure an adequacy of item homogeneity. Cronbach's Alpha provides internal consistency reliability measurements that range from 0 to 1, with values of .60 to .70 considered as the *very lowest* of acceptable measures (Hair et al., 2006). For the Celtic data, the internal consistency reliability estimates ranged from

.68 to .93. Additionally, correlation coefficients analysis within (except in 2010 for item cluster 2) each respective cluster by survey subsection revealed moderate to strong inter-item relationships; a desirable property in scale development and validation.

Validity Evidence based on Item Homogeneity

Next, we consider evidence of item *homogeneity*. Items on an instrument are homogeneous to the extent that they measure a single concept. In the present study, respondents were required to indicate their level of agreement with specific statements by responding to the item or scale format displayed in Figure 1. Correlation analyses yielded coefficients within each respective cluster by survey subsection as exhibiting moderate to strong inter-item relationships (see Appendix A). This outcome provides evidence that the items within the clusters are homogeneous. However, replicate analysis using a larger sample is recommended to ensure that the results are able to be accurately replicated. Mean differences for average of subscale (item clusters) between 2008 and 2010 are presented in Table 2. The average of each item cluster was derived by summing the responses across respondents and dividing by the number of statements/items in a particular cluster. Non-significant mean differences between the two years are highlighted in orange. Differences that are not statistically different, provides evidence that the respondents attitudes were approximately the same over time (orange highlighted cells). In the situation where the mean or average of an item cluster is *significantly lower* (non-highlighted cells), the respondents attitudes shifted downward by the difference between the means in 2008 and 2010. However, it is noteworthy that the mean *of the responses in the 2008 and 2010 samples* were in the same category of response even though many instances they were statistically significantly different. For example, examination of the mean of item cluster 1 in

2008 was 4.58 compared to 4.05 for 2010. This difference was *significantly different but not practically important* since the mean response did not shift out of the category of response “somewhat agree” (see Figure 1). Finally, due to the small sample size in 2008 and 2010 (e.g., N=22 and N=29), similar analysis should be replicated with larger samples.

Table 2. Descriptive Statistics and Item Cluster Differences: 2008 and 2010

Item Clusters	Mean	N	Std. Deviation	Std. Error Mean	Statistical Significance
cluster 1 - 2008	4.53	22	0.44	0.09	0.003
cluster 1 - 2010	4.05	22	0.72	0.15	
cluster 2 - 2008	4.38	22	0.42	0.09	0.052
cluster 2 - 2010	4.02	22	0.69	0.15	
cluster 3 - 2008	4.56	22	0.43	0.09	0.001
cluster 3 - 2010	3.97	22	0.81	0.17	
cluster 4 - 2008	4.60	22	0.44	0.09	0.005
cluster 4 - 2010	4.16	22	0.55	0.12	
cluster 5 - 2008	4.68	22	0.39	0.08	0.008
cluster 5 - 2010	4.15	22	0.76	0.16	
cluster 6 - 2008	4.65	22	0.39	0.08	0.001
cluster 6 - 2010	4.07	22	0.71	0.15	
cluster 7 - 2008	3.91	22	0.78	0.17	0.774
cluster 7 - 2010	3.85	22	0.79	0.17	
cluster 8 - 2008	4.44	22	0.50	0.11	0.152
cluster 8 - 2010	4.18	22	0.60	0.13	

cluster 9 - 2008	4.57	22	0.38	0.08	0.009
cluster 9 - 2010	4.14	22	0.66	0.14	
cluster 10 - 2008	4.76	22	0.34	0.07	0.016
cluster 10 - 2010	4.43	22	0.47	0.10	
cluster 11 - 2008	4.48	22	0.53	0.11	0.040
cluster 11 - 2010	4.16	22	0.48	0.10	

Note. Item clusters are composed of 1) Planning for the future (8 items), (2) Individual ownership (8 items), (3) Communication (8 items), (4) Structure and job clarity (8 items), (5) Appreciation and support (8 items), (6) Organizational mission focus (8 items), (7) Career opportunity and advancement (8 items), (8) Quality control/corrective actions (8 items), (9) Culture and environment (8 items), (10) Quality of care and services (10 items), Quality of support services in the organization (12 items)

Summary of Psychometric Evidence for the Celtic Survey Instrument

This document provides information related to the psychometric properties of a *Medical Keys* survey instrument developed by the Institute for Motivational Living and PeopleKeys for acquiring employee-centered information about their perception of the climate, goals, effectiveness, quality of care and services provided by the Celtic Healthcare organization. Data acquired in this study was based on sample responses from employees in the Celtic Healthcare organization collected during calendar years 2008 and 2010. The results of the analyses conducted provide preliminary evidence that score data are valid and reliable. Particularly important in these findings is evidence that the subsets of items (i.e. item clusters or subsets) within the survey instrument appear to exhibit a substantial level of item homogeneity and score reliability. Furthermore, the content of the items within clusters or subsets appears to be well-conceived; an important component in establishing content and face validity. As

illustrated in Table 1, respondents' attitudes in 2008 were largely consistent with their attitudes in 2010. This response pattern reflects stability of the survey instrument to elicit consistent responses over time. In summary, the findings of the present study provide preliminary evidence for the reliability and validity of the Celtic Healthcare survey instrument. Future studies using the instrument should include larger sample size and additional healthcare organizations and/or locations. Based on larger sample size and more organizations, the psychometric properties will be able to be more rigorously evaluated.

Validity Evidence Based on Associations with Other (External) Studies

Separate from the Celtic Healthcare study, The Institute for Motivational Living (IML) and PeopleKeys Corporation conducted a longitudinal study in years 2007 and 2008 focusing on *Talent Management and Retention in the Medical Field*. The survey data were acquired from Heritage Skilled Nursing Facility. The goals of the study focused on examining the effects of relationship based talent management (i.e. relational strengthening) and the impact it has on (a) recruitment, (b) training, and (c) retention in the healthcare industry. A fourth goal of the study was to critically examine the impact of relational strengthening in medical staff teams and the impact it has relative to *increasing the quality of patient care*. The 2007 – 2008 Heritage Skilled Nursing Facility study included a larger sample than the 2008 – 2010 Celtic Healthcare study and consisted of 81 medical staff each being surveyed in 9 areas in Sept of 2007 and again in December of 2008. Each of the 9 categories (illustrated in Table 3) contained 8 to 12 individual items pertaining to a certain aspect of their job. A Likert-type response scale was used with respondents answering along a continuum of strongly agree to strongly disagree (see Figure 1). This results of the participants' responses revealed an increase in satisfaction ratings ranging

from 2- 21% (see Table 3). Additionally, negative responses decreased from 7 -24% showing a strong reverse pattern of positive/negative results.

Statistical Results for the 2007-2008 Study

To further examine the participant responses from the Heritage Skilled Nursing Facility 2007-2008 survey, statistical tests were conducted comparing the change in positive and negative attitudes for years 2007-2008 in each of the 9 areas. Table 3 provides the results of the statistical tests of attitude change between years 2007 and 2008. As illustrated in Table 3, the results are provided in terms of positive and negative change for years 2007 and 2008. In the top half of Table 3, change was consistently positive and statistically significant for content/topic area numbers 3, 7 and 8. Perhaps even more telling are the results in the bottom half of Table 3. For example, negative change consistently decreased and in content/topic areas 2 through 9 the decrease was *statistically significant*.

Table 3. Change in Positive and Negative Attitude: Years 2007 and 2008

Percent Positive Results	2007 (N=81)	2008 (N=81)	Z-statistic	<i>p</i>
1. Job Fulfillment	72.15%	74.91%	0.39	0.69
2. Goal and Mission Clarity	62.46%	75.17%	1.75	0.08
3. Recognition and Support	50.15%	65.54%	1.98	0.04*
4. Two Way Communication	57.08%	67.49%	1.37	0.17
5. Structure and Job Clarity	65.69%	76.59%	1.53	0.12
6. Culture and Environment	51.69%	66.59%	1.93	0.05
7. Individual Ownership	45.08%	62.06%	2.17	0.03*
8. Planning for Growth (Vision)	45.38%	66.37%	2.69	0.01**
9. Quality Control	60.31%	72.43%	1.63	0.10
Percent Negative Results				
1. Job Fulfillment	18.00%	10.75%	-1.32	0.18
2. Goal and Mission Clarity	25.08%	10.71%	-2.38	0.02*
3. Recognition and Support	36.31%	15.81%	-2.97	0.01**
4. Two Way Communication	32.15%	13.37%	-2.85	0.01**
5. Structure and Job Clarity	19.23%	8.35%	-2.00	0.04*
6. Culture and Environment	33.23%	15.66%	-2.60	0.01**

7. Individual Ownership	42.46%	18.69%	-3.28	0.01**
8. Planning for Growth (Vision)	32.46%	13.37%	-2.89	0.01**
9. Quality Control	27.38%	11.46%	-2.56	0.01**

Note. *denotes statistical significance at $p < .05$; **denotes statistical significance at $p < .01$.

Psychometric Congruence between Celtic Healthcare and Heritage Skilled Nursing

Facility Studies

An important step in establishing congruence between the results of two studies using the same or highly similar survey instruments but with different respondents is the match between the patterns of responses for the two different samples. The Celtic Healthcare and Heritage Skilled Nursing Facility's 2007-2008 study used the much the same content/topic areas presented in Table 3 (i.e. the wording of some items changed slightly, but the construct being measured did not). Specifically, for the 2007-2008 Heritage study conducted by IML/PeopleKeys, the items included in the item subsets (clusters in Table 1 and Appendix A) used in the Celtic Healthcare survey are highly congruent. For example, item subsets or content area clusters 1 through 7 (see Table 1 and Appendix A) reflect the content/topic areas in Table 2 used in the 2007-2008 IML/PeopleKeys study. A critical point in the 2007 – 2008 Heritage Skilled Nursing Facility study is that a substantially larger sample size (e.g., $N=81$) was acquired making the statistical results more reliable.

The results presented earlier in this report provide two important pieces of information relative to the quality of patient care. First, the technical information presented earlier on the technical properties of the Celtic Healthcare survey instrument substantiates the reliability and validity of the findings (i.e. participants' attitudes) in the Heritage Skilled Nursing Facility's 2007-2008 study because the two instruments use highly similar item content and measure the same construct areas. For example, the results of the Celtic Healthcare analyses presented earlier provided correlational evidence that the item clusters or subsets work together as the instrument

development team intended (i.e. content and construct validity evidence exists). The same content was included in the 2007-2008 Heritage Skilled Nursing Facility study thereby providing *content congruency*. Second, the results presented in Table 2 for the Celtic Healthcare 2008-2010 study illustrate that the mean attitude rating across item subsets or clusters by topic area remained stable over time (e.g., although the mean sometimes dropped slightly over time, the primary response category on the Likert scale remained unchanged). The exception to this pattern is item cluster or subset 3 where the mean response changed from 4.56 in 2008 to 3.97 in 2010. The results of the Celtic Healthcare analyses provided in this report establish *preliminary* psychometric evidence that the survey items are content and construct valid. Additionally, the results of the Heritage Skilled Nursing Facility study provide corroborating evidence that the results of the Celtic Healthcare are reliable and valid. Taken together, the congruence in survey item content used in the Heritage Skilled Nursing Facility study and the Celtic Healthcare survey along with the positive response trends in both studies, an argument is reasonable to forward that quality and/or improvement in patient care is related to (or depends on) the behavior of organization's leadership, organizational climate, communication, strategic goals, and the overall satisfaction of healthcare employees at their organization. Based on the results of the studies presented in this report, leadership/management styles (i.e. expressed by behaviors), personality traits, communication styles, and leadership abilities affect job satisfaction ratings that in turn translates to better quality of overall patient care as rated by the caregivers. Future research is encouraged using larger more diverse samples to verify if the same results are plausible.

References

- American Educational Research Association, American Psychological Association, National Council on Measurement in Education (1999). *Standards for Educational and Psychological Testing*. Washington, D.C.
- Cohen, R. J., & Swerdlik, M. E. (2010). *Psychological Testing and Assessment, 7th ed.* New York, NY: McGraw-Hill.
- Fassel, D. (2003). Building better performance. *Health Forum Journal*, 46, 2, 44-45.
- Force, M. (2005). The relationship between effective nurse managers and nursing retention. *Journal of Nursing Administration Research*, 35(7/8), 336-341.
- Krathwohl, D. R. (1998). *Methods of Educational and Social Science Research: An Integrated Approach, 2nd ed.* Long Grove, IL: Waveland Press, Inc.
- Newman, K., Maylor, U., & Chansarkar, B. (2003). The nurse satisfaction, service quality and nurse retention chain: Implications for management of recruitment and retention. *Journal of Management in Medicine*, 16 (4), 271-291.
- Peltier, J., Dahl, A, Mulhern, F. (2009). *The relationship between employee satisfaction and hospital patient experiences*. Technical report, Forum for People Performance Management and Measurement.