

2014

Utilization Review Software: The Impact on Productivity and Structural Empowerment in Case Management Nurses in an Acute Care Setting

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Utilization Review Software: The Impact on Productivity and Structural Empowerment
in Case Management Nurses in an Acute Care Setting

by

Kimberly Frazier

A capstone project submitted to the faculty of
Gardner-Webb University School of Nursing
in partial fulfillment of the requirements for the degree of
Doctorate of Nursing Practice

Boiling Springs

2014

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Abstract

The Center for Medicare and Medicaid (CMS) seeks to achieve cost control by implementing aggressive cost containment mechanisms for an exploding Medicare population. One such mechanism is utilization review, which is employed to limit reimbursement of medical care that is determined to not be medically necessary. The CMS Conditions of Participation mandate that all hospitals determine whether a patient qualifies for an Inpatient or Observation stay. Utilization Review Specialist (UR) nurses were given the Conditions of Work Effectiveness Questionnaire II (CWEQ-II), Organizational Relationship Scale II (ORS-II), and the Job Activity Scale II (JAS II), six months after McKesson InterQual software was installed. The CWEQ-II resulted in the following scores: Opportunity $x = 0.83$, Information $x = 0.71$, Support $x = 0.91$, Resources $x = 0.42$. Descriptive statistics revealed that the UR nurses perceive themselves to be moderately empowered as measured by the CWEQ-II total score of 14.92 (SD ± 1.23). The Net Present Value was calculated as \$1,619,677.93, over a four-year span. Medical necessity denials have increased significantly over the past several years and continue to place hospitals in financial jeopardy. By providing employees with appropriate computer software programs, hospitals can mitigate the monetary damages associated with this particular denial and recoupment, and improve nurse satisfaction and commitment. Empowering work conditions for specialty nurses have positive effects on organizational attitudes and behaviors.

Keywords: Utilization Review, Medical Necessity, The Center for Medicare and Medicaid, Conditions of Participation, McKesson InterQual criteria

Acknowledgments

I would like to take this opportunity to express appreciation for the guidance and assistance received from Dr. Janie Carlton, Dr. Laura Foxx, Dr. Robin Lang, and Dr. Denise Smith during the Capstone Project process. On a personal note, I could not have completed this rigorous program had it not been for the support of my high school sweetheart, my best friend, and my lifelong love- my husband Mark. Your encouragement and unwavering support over these many years has meant more than you can possibly know.

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CHAPTER I

Introduction

The Centers of Medicare and Medicaid Services (CMS) rules and regulations are so complicated that it is increasingly difficult for organizations to stay within the Conditions of Participation (CoP's). CMS mandates that every admission be reviewed and assigned a correct medical necessity status of either Inpatient or Outpatient (Observation). Utilization Review (UR) for medical necessity has become highly complex with commercial products such as InterQual criteria becoming more stringent each calendar year. The proposed project is an investigation of a community hospital's journey in converting to UR software and evaluating the outcomes after the implementation of the UR tool. The proposed project will also evaluate, by utilizing the CWEQ II tool, if the employees in the Case Management department, who are given tools, have a greater sense of empowerment. Empowering work environments that support professional practice have been positively related to nurse productivity outcomes in other studies (Wong, Laschinger, & Cummings, 2010).

Problem Statement

The setting is a community hospital that is not-for-profit. It is a 437-bed acute inpatient community facility in North Carolina. It provides both inpatient and outpatient services to a multicounty service area of approximately 73,000 residents. Because of the aging population and advances in medicine, the largest payor mix is traditional Medicare, followed by managed Medicare.

An aging population, rising health care costs, and ever-increasing regulatory guidelines are among the daunting issues facing hospital systems. These are key drivers

in hospital initiatives to improve quality and become more efficient. It is vital to manage care processes and resources in a way that fosters and protects patient safety while avoiding medically unnecessary care. The Medicare Modernization Act (MMA) is a federal law of the United States that was enacted in 2003. It has since produced the largest overhaul of Medicare in the public health program's history since its inception in 1965 in an attempt to control or influence the quality, accessibility, utilization, costs and prices, and outcomes to the ever growing Medicare population (Muller, 2011). In addition to the MMA, the Patient Protection and Affordable Care Act (ACT) has ushered in a series of reforms and changes that have begun to alter the American healthcare landscape (Shay & Mick, 2013).

CMS seeks to achieve cost control by implementing aggressive cost containment mechanisms (Saunier, 2010). One such mechanism is utilization review, which is employed to limit reimbursement of medical care that is determined to be medically necessary by the predetermined criteria that is updated yearly by the CMS in conjunction with InterQual (Saunier, 2010).

Justification of Project

Medicare confers upon its beneficiaries' entitlement of broad categories of medical services. The program has developed a complex series of rules specifying particular medical items or services that may or may not be covered based on rules in the Medicare statutes and regulations.

Physicians are responsible for determining medical necessity relative to hospital admissions, treatment plans, etc. based on pre-determined guidelines established by Medicare. However, according to Medicare guidelines, a non-physician reviewer may

make recommendations approving medical necessity (Singer & Bergthold, 2007). Case management nurses provide UR screening to all patients admitted to an acute care bed within the hospital and constantly collaborate with physicians to help them determine the correct admission status.

Case Management services within inpatient acute settings also provide a multitude of other services such as: discharge planning, procurement of durable medical equipment (DME), home health services (HHC), resource materials for community services, facilitation to skilled nursing facilities or long term acute care hospitals (SNF's and LTAC's), clinical information and concurrent reviews sent to insurance providers and managed Medicare companies, and social work support in a myriad of domestic situations for both pediatric and adult populations. Possibly the most important task that case management has in today's changing healthcare landscape is the UR review for medical necessity for every patient who enters a hospital system.

The use of Observation services in hospitals will continue to be controversial. Designation as Observation versus Inpatient can have costly consequences for Medicare patients. Medicare beneficiaries may face increased costs such as higher copays and deductibles when hospitals place them in Observation status. Beneficiaries may also fail to meet the three-day inpatient obligatory stay requirement to be eligible for Medicare coverage for a subsequent skilled nursing facility stay (Shay & Mick, 2013).

Purpose

The purpose of the proposed clinical project was to evaluate the implementation of McKesson's InterQual software for Utilization Review to determine if productivity increased in the Case Management Department and to determine the level of case

management satisfaction and workplace empowerment post implementation (McKesson, 2012).

CHAPTER II

Research Based Evidence

The Centers of Medicare and Medicaid Services (CMS) rules and regulations have become so complicated that it is increasingly difficult for organizations to stay compliant with the CoP's. Mandatory UR for medical necessity has become highly complex with InterQual criteria becoming increasingly more stringent each calendar year. The proposed project will follow a mid-sized community hospital's journey in converting to UR software and evaluate the productivity outcomes after the implementation of the UR tool as well as measuring the level of structural empowerment the staff felt after they began using this software.

Review of Literature

Olaniyan, Brown, and Williams (2009) stated that organizations should enact a strategic, organization wide approach to manage and reduce denials effectively based on medical necessity. They further concluded that the major stakeholders should include: Case Management, Business and Financial Services, Recovery Audit Contractors (RAC) Departments, physician leadership, and Information Technology (IT).

In 2010, CMS expanded the RAC Program to all 50 states. RAC's are paid on a contingency basis for all overpayments found and receive a 12% fee for all denials. This program was nobly intended by CMS to find and prevent waste, fraud, and abuse (Gingerich, 2009). The RAC program to date has recouped more than two billion dollars to the Medicare trust fund. The financial risks to hospitals and the viability of some organizations cannot be over emphasized (Stefanacci, Robin & Gershwin, 2010).

Traditionally, the RN Case Managers at this hospital utilized a book version of InterQual, which was difficult and awkward to use.

Determining patients' medical necessity involves the use of complex algorithms listed by specific disease processes that can be very difficult to maneuver through (Muller, 2011). However, CMS requires InterQual guidelines be used when determining medical necessity. Medical necessity determines the severity of illness and the intensity of the service that a hospital is providing. This in turn indicates whether a patient should be admitted inpatient or observation, which is technically considered outpatient by CMS. Medical necessity denials have increased significantly over the past several years and Orland (2011) predicts that they will continue to increase which will shrink hospital margins and negatively impact many hospitals nationwide.

In addition to the financial risks associated with UR, one cannot overlook the impact of the psychological effects of structural empowerment in the work environment. Armellino, Griffin, and Fitzpatrick (2010) found that structurally empowering the work environment increases the individual or group's behavior towards achievement of an organization's goals. Structural empowerment (SE) focuses on access to power and opportunity, which includes resources, support, and information within the work environment.

One international study conducted by Yang, Liu, Huang, and Zhu (2013), found that empowering work environments that support professional practice are positively related to nursing outcomes. Their study integrated structural empowerment theory with Magnet hospital characteristics and provided empirical evidence on the relationships

between structural empowerment, professional practice environments, and organizational commitment.

This project that was implemented in February of 2013, will help the Case Management Department develop a process that will mitigate the regulatory and financial risk of the organization by taking the “guess work” out of the individual case manager’s hands and relying on InterQual software to support the medical necessity decision once the appropriate information has been entered into the system. Additionally, it will reduce the actual time spent on utilization review. Based on hundreds of reviews, the average time spent in determining a Medicare beneficiary’s UR status has been 12 minutes and 39 seconds. This was based on surveys results that were completed by the Case Managers that were conducting InterQual reviews. This information was needed for administrative approval and buy in.

The literature and case studies state in clear terms that knowledge of CMS policies and procedures is integral to surviving the current climate of healthcare. Steffanacci, et al. 2010, stated that medical necessity is playing an ever-greater role and that physicians need to partner with hospitals to ensure that the admission status is accurate which will decrease scrutiny and potential denials. This also ties in several other articles and their stance on the absolute importance of case management and the UR function that they perform. Orland (2011) described in detail how one hospital restructured their case management department to drive change and improvement processes. He found that the hospital case manager must act in partnership with the physicians to timely and effectively ensure appropriate medical necessity.

Medical necessity is a complex medical judgment that is determined by the physician based on the patient's medical history, the severity of illness, and the intensity of the treatments ordered (Hale, Fugate, & Pisarsky, 2012). The admission status needs to be correct from the time the patient is admitted or hospitals will continue to face denials. Case managers need a consistent approach to admission UR that is comprehensive and yet expeditious due to time constraints and volumes in case management staffing.

Olaniyan et al. (2009) stated that healthcare organizations should enact a strategic, organization wide approach to effectively manage and reduce denials based on medical necessity.

One cannot overlook the systematic review that was found during this literature search. Dickens (2013), conducted a comprehensive meta-analysis of business frameworks for business organizations. Several of the frameworks used a Control Self-Assessment (CSA) methodology, which identifies key business processes, early detection of risks, employee ownership of internal controls, etc. Enterprise Risk Management-Integrated Framework (ERM) is a business framework that can be applied across an organization and is designed to help identify risks and provide reasonable assurance that a business entity is able to meet its business and financial objectives. Matthews (2011) comprehensively assessed performance measures and organizational effectiveness utilizing eight different ways to measure performance.

Theoretical or Conceptual Framework

The theoretical framework to guide this project is based on Kanter's Theory of Structural Empowerment. Kanter's Theory of Structural Empowerment, which is

actually a business theory, has been expanded into the healthcare arena by Dr. Heather Laschinger. Kanter (1979) believed that improved access to resources and information and the ability to act quickly make it possible to accomplish more and to pass on more resources and information to subordinates. Organizational change agents who want a new program or policy to succeed should make sure that the change itself does not render any other level of the organization powerless. In making broad changes, key people in the level or two directly above and in neighboring functions should be involved, informed, and taken into account, so that the program will have successful buy in by all levels of employees (Kanter, 1979).

One article studied the relationship between perceptions of structural empowerment and the anticipated turnover rate among critical care nurses. Hauck, Griffin, and Fitzpatrick (2011) conducted a study in which 257 nurses, in five critical care units, completed a Conditions of Work Effectiveness Questionnaire-II (CWEQ-II). Results showed acceptable construct validity for the total CWEQ-II score $r = 0.79$, $P < 0.0001$. Further descriptive statistics showed that the nurses perceived themselves as moderately empowered by the CWEQ-II total score. The results reflected that nurses who perceive themselves as empowered have higher levels of organizational commitment. Additionally, Stewart, McNulty, Griffin, and Fitzpatrick (2010) also studied psychological empowerment and structural empowerment among nurse practitioners in the workplace. They also utilized the CWEQ-II and found $r = .31$, $P < .01$. They found that the Nurse Practitioners (NPs) valued their work and found meaning in what they do.

Research has shown that empowering work conditions are likely to result in a personal sense of empowerment, characterized by autonomy, confidence, meaningfulness, and a feeling of being able to have an impact in the organization (Faulkner & Laschinger, 2008). Faulkner and Laschinger (2008) applied Kanter's Theory to study the effects of structural and psychological empowerment on perceived respect in acute care nurses. They studied 500 randomly selected hospital nurses and utilized a predictive, non-experimental survey design. The CWEQ-II tool was used and the results supported relationships between empowerment and perceived respect in hospital nurses. Statistical data showed $r^2 = 0.24$, $P = <0.001$. Overall structural empowerment was significantly related to perceived respect ($r = 0.47$, $P = <0.001$), which showed a moderate relationship and was statistically significant.

This research was further reinforced by Armellino et al. (2010). They studied structural empowerment and patient safety culture among Registered Nurses working in adult critical care units (ACCU). They looked at the relationship between a structurally empowered work environment and patient safety culture. The study surveyed a convenience sample of 257 RN's assigned to the ACCU on a full time basis. They utilized the CWEQ-II tool as well as the Hospital Survey on Patient Safety Culture (HSOPSC) and a total of 102 surveys were returned. Pearson's correlation coefficients were computed using the CWEQ-II total SE score and percent positive score for each HSOPSC subscale. Correlations between each CWEQ-II and HSOPSC subscale supported a relationship. Significant correlations were found between the total SE score and questions on the HSOPSC, further reinforcing that improving the RN's work

environment has multiple positive effects. One drawback was the limited setting; therefore the generalizability to all health care settings is limited.

Another study by Yang et al. (2011) investigated structural empowerment theory with Magnet hospital characteristics and provided empirical evidence on the relationships between structural empowerment, professional practice environments, and organizational commitment. The study used a convenience sample of 750 full-time qualified nurses employed by five tertiary “first class” hospitals in Tianjin , China that exhibited Magnet characteristics. A total of 608 usable questionnaires were returned.

The CWEQ-II was used to measure structural empowerment in this study. The Cronbach’s alpha ranged from 0.72 to 0.89, and the total score was 0.92. The two-item global empowerment scale was significantly related to the CWEQ-II ($r = 0.704$, $P < 0.01$), providing validation. This research supported the results that there is a significant positive relationship between structural empowerment and a professional nursing practice environment. A limitation of this study was the cross-sectional nature of the data. It is unknown whether there are causal relationships among the variables (Yang et al., 2013).

Several of the articles reviewed rated a VI on the Clearinghouse Guideline scale. Four articles rated a III on the scale as well as a meta-analysis of business frameworks. It is the consensus of expert opinions of physicians and healthcare business analysts that hospital organizations are at extreme risk due to the regulatory landscape that is currently present. With healthcare change evolving so quickly, this is a pertinent, relative issue that has insufficient evidence at this time. The anecdotal evidence brought to light by the case reports/experts in combination with Kanter’s theory of Structural Empowerment will allow this author the ability to implement the clinical project. Also the use of the

Conditions of Work Effectiveness Questionnaire-II (CWEQ-II) survey tool will bring validity and reliability to the project and measure the empowerment of the case management staff after the implementation of the UR software. The overall evidence is strongly supporting this clinical project.

CHAPTER III

Project Description

The goal of this Capstone Project was to produce data that is based on a representative sample of case management staff so that the resulting information can be generalized to that target population. Based on Kanter's theory of workplace empowerment, this Project Leader hypothesized that there will be positive case manager perceptions of structural empowerment and work satisfaction after the implementation of the UR software.

Project Implementation

This project was conducted in an acute care community hospital. The Case Management department was utilized. Based on the needs assessment, this is an area that has had little actual research or study in the rapidly changing environment of healthcare. The project was a descriptive statistical study utilizing Kanter's Theory of Structural Empowerment in the hospital Case Management setting. The RN Case Managers were surveyed using the CWEQ-II tool at the end of six months of UR software that was new to the facility and department. The key stakeholders were the hospital administration and the Case Management department due to the financial investment and time spent in planning and preparation. The hospital assigned the role of Project Manager to the Case Management data analyst. There was also a Lead Clinical liaison within the department and a Lead IS person assigned to the project.

Setting

The setting of this project was carried out in a 437-bed inpatient, acute care hospital in a city with a population of approximately 73,000. The Case Management

Department is comprised of 36 RN case managers and five social workers. During the course of this project, Utilization Review was pulled out separately and a new division was created. This change occurred in April, 2013. This decreased the sample population of 36 Case Managers to eight UR Specialists; thus changing the sample population. The members of the newly created UR department work in assigned units throughout the hospital. Every unit including the Emergency Department has case management and social work coverage.

Sample

A convenience sample of eight RN Case Management UR employees were recruited for this project that was purposive in nature. Some employees were part time and could have opted out because they work sporadically. The small sample size was a limitation; however, it can be effective even with a relatively small sample size (Terry, 2011).

Project Design

This project was based on the mandates of CMS to use an InterQual medical necessity review criterion that was previously available in book form. Because of the nature of healthcare evolving rapidly, it became apparent that software of this nature was needed to take the human “guesswork” out of the equation. The CWEQ-II tool, JAS-II, ORS-II (see Appendix A), and the Background Data Questionnaire (Appendix B) were administered once they had been using the UR software for six months and consent was obtained. Lastly, with the help of the project manager at the facility, data from the McKesson software was collected to determine the length of time in minutes the staff was taking to determine medical necessity. This information was then used to determine cost

savings for the organization, based on minutes saved compared to UR Specialists average salary to determine actual productivity gained in minutes and cost savings.

Protection of Human Subjects

There were no ethical considerations for subjects in this project. This project and survey tool was totally voluntary for the eight RN participants. The project leader detailed in the letter of consent that this is strictly voluntary and that all information is highly confidential and in no way will the manager or director be privy to any data until the finished project results are revealed.

Instruments

The CWEQ-II tool was developed by Dr. Heather Laschinger as an expansion of Kanter's theory (Laschinger, Finegan, & Wilk, 2011). Variables such as support, resources, etc. can be measured by the CWEQ-II survey. This questionnaire has been extensively used in research studies and there is a website devoted to the validity and reliability of the tool (Laschinger, 2012). The project leader submitted a request to Dr. Laschinger with project information, requesting use of the survey tool and permission was received.

The CWEQ-II is a simple survey that consists of six subscales: Opportunity, Resources, Information, Support, the Job Activities Scale II (JAS-II), and the Organizational Relationships Scale II (ORS-II) that result in a Total Structural Empowerment score. Each item is scored between one and five on a Likert Scale. The overall empowerment score is calculated by summing the six subscales. Score range is between four and 20. Higher scores represent stronger perceptions of working in an empowered work environment. Content and construct validity have been established

from prior studies. The Cronbach's alpha coefficient for the Total Empowerment Scale ranged from 0.82 to 0.94, based on different studies (Hauck et al., 2011). The demographic data for this project was collected using the Background Data Questionnaire survey that requested information pertaining to gender, age, race, years in nursing, years at hospital, certification status, and highest degree held.

Data Collection

The data collection consisted of the CWEQ-II questionnaire. The CWEQ-II survey was administered six months post implementation of the UR software and was intended to measure variables that would indicate the level of satisfaction or dissatisfaction after a period of use of the software product. Another variable was the actual time spent on UR. The McKesson software has the ability to log time spent on initial case management reviews so that the Project leader could quantify the time spent on these chart reviews. All data was collected six months post implementation on time spent on initial screening reviews so that productivity increases could be evaluated.

Data Analysis

Data was collected post implementation. In addition, productivity was determined by measuring historical data based on the time involved with determining a status prior to implementation that was gathered by the Director and Project Manager during their needs assessment. This was compared to productivity post implementation of the software. The results of the survey tool were calculated using the tool, and the results yielded data showing how the case managers regarded their perceived empowerment and satisfaction.

Descriptive statistics was computed for all major study variables using Statistical Program for Social Sciences (SPSS) (2012) version, 20. Cronbach's alpha coefficient was tested for all variables. Descriptive statistics was then utilized post implementation to determine structural empowerment scores based on the CWEQ-II scores. (Fawcett & Garity, 2009).

Timeline

In January of 2012, the Director of Case Management met with McKesson representatives and viewed the product. After several additional meetings with McKesson and the IS managers at the hospital, it was felt that with the current regulatory status in healthcare and the emphasis on quality being tied directly to payment, that the software was a necessary expense to be incurred. It was placed as a capital budget expenditure for the 2012 / 2013 budget year that begins July 1 for this particular organization. The Vice President of the Nursing Division was updated on the potential project and the budget was approved. In September, 2012, McKesson met with the Director and a contract was signed. In October, 2012, IS met with McKesson and all details for an additional server was discussed and the timeline was set for the HL7 stand-alone server to be implemented. In November 2012, an official kickoff party was held. The training for staff was on January 29, 2013 with a live training representative from the McKesson onsite. InterQual UR software went live February 18, 2013.

Budget

The cost for this project was approximately \$100,000, which included the cost of the server, as a Capital Budget expense that was approved by the hospital in addition to a

yearly charge from Mckesson of \$37,691.76. There was a collaborative effort between the Case Management Department and IS.

Limitations

There were no limitations to the project proposal design.

Summary

Research has shown that workplace empowerment has a strong impact on factors related to recruitment, job satisfaction, organizational trust and respect, and organizational commitment (Laschinger et al., 2011). Employees who have access to empowerment structures are more likely to be motivated, more committed, and accomplish their work in meaningful, efficient ways. In today's regulatory landscape that is fraught with audits and denials, it is important for healthcare delivery systems to support case management departments in their UR capacities. The benefits to finding positive aspects to implementing UR software that supports increased case manager/UR Specialist productivity and job satisfaction by providing them with an empowering structure are twofold; economically it will support the cost of the program and secondly, provide a positive workplace environment.

CHAPTER IV

Results

The objective of this project was to evaluate the implementation of McKesson's InterQual software for utilization review to determine if productivity is increased in the Utilization Review Department and to determine the level of UR nurses satisfaction and workplace empowerment post implementation in a community hospital setting. A descriptive study design was used to examine the relationship of structural empowerment perceptions.

Sample Characteristics

The sample size was reduced, due to the Case Management department separating in the midst of this project. The final sample size was eight nurses that work in UR, four of whom work full time during the week, one weekender nurse, and three relief UR nurses. A total of eight surveys were returned, for a response rate of 100%, with no withdrawals and no losses. The sample is 100% female (n=8), with a mean age of 44.6 years (SD± 9.03). Their ethnicity is 100% Caucasian (n=8), and all eight nurses (100%) had a Bachelor of Science in Nursing. Only 25% (n=2) have a certification, while 75% (n=6) do not. The mean number of years in nursing practice is 18.5 (SD ± 9.75). The mean number of years employed in this hospital is 9.31 (SD ± 8.39). These demographic responses indicate a mature, long tenured group of nurses in this department (see Table 1 and Table 2).

Table 1

Demographics-UR Nurses

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Female	8	100.0	100.0	100.0
Race	White	8	100.0	100.0	100.0
Degree	BSN	8	100.0	100.0	
Certification	Y	2	25	25	25
	N	6	75	75	75
Total		8	100	100	100

Table 2

UR Nurses Demographic: Age and Years in Hospital

	N	Minimum	Maximum	Mean	Std. Deviation
Age	8	32.00	59.00	44.6250	9.03861
Yrs Nursing	8	4.00	30.00	18.5000	9.75412
Yrs Hosp	8	1.00	28.00	9.3125	8.39616
Valid N (listwise)	8				

Major Findings

The CWEQ-II was used to measure structural empowerment in this study. The Cronbach alpha for the results of the total CWEQ-II, was 0.58, and for each of the subscales: Opportunity $\alpha = 0.83$, Information $\alpha = 0.71$, Support $\alpha = 0.91$, Resources $\alpha = 0.42$.

The CWEQ-II consists of four subscales. The overall empowerment score is calculated by summing the four subscales. Score range is between four and 20. Higher scores represent stronger perceptions of working in an empowered work environment. Scores ranging from four to nine are described as low levels of empowerment, 10 to 14 as moderate, and 16 to 20 as high levels of empowerment (Laschinger Research, 2012). Summing and averaging the items obtain the mean score for each subscale. The score range is between 1 and 5. Higher scores represent stronger access to these subscales.

Descriptive statistics revealed that the UR nurses perceived themselves to be moderately empowered as measured by the CWEQ-II total score of 14.92 ($SD \pm 1.23$). The mean scores and standard deviations for each of the subscales in this study were: Opportunity $M = 4.29$, $SD = 0.68$; Information $M = 3.45$, $SD = 0.50$; Support $M = 3.91$, $SD = 0.61$; Resources $M = 3.25$, $SD = 0.43$ (see Table 3).

The Global Empowerment score is obtained by summing and averaging the two global empowerment items; the Job Activities Scale (JAS) and the Organizational Relationship (ORS). Score range is between one and five. Higher scores represent stronger perceptions of working in an empowered setting. The Global Empowerment scores for this project were $M = 3.81$, $SD = 0.37$. Descriptive statistics of the responses on the JAS indicated that the participants felt they had a high level of Formal Power, $M =$

3.79, SD = 0.31. Higher scores represent job activities that give higher formal or position power. Informal Power, measured by the ORS revealed M = 3.81, SD = 0.74. This scale is obtained by summing and averaging the subscale items. Scores range between 1 and 5. Higher scores represent stronger networks of alliances in the organization or higher informal power (see Table 3).

Table 3

Descriptive Statistics-CWEQ-II

	N	Minimum	Maximum	Mean	Std. Deviation
Opportunity	8	3.33	5.00	4.2917	.67700
Resources	8	2.67	4.00	3.2500	.42725
Information	8	2.67	4.00	3.4583	.50198
Support	8	3.00	5.00	3.9167	.61075
JAS	8	3.33	4.33	3.7917	.30538
ORS	8	2.25	4.50	3.6563	.74327
Global	8	3.00	4.00	3.8125	.37201
Empowerment					
Total Structural	8	13.33	17.33	14.9167	1.23121
Valid N (listwise)	8				

Nurses reported that they were moderately structurally empowered (M 14.92, SD 1.23). Of the four subscales on the CWEQ-II questionnaire, nurses reported Opportunity as the most empowering structure (M 4.29, SD 0.68). The other subscales of Resources, Information, and Support were all in the moderate range with no significant low scores. Additionally, the JAS (M 3.79, SD 0.30), ORS (M 3.65 SD 0.74), and Global Empowerment (M 3.81 SD 0.37) were found to have no significant correlations (see Table 4).

Table 4

Correlations of Global Empowerment, JAS II, and ORS II

		Global Empowerment	JAS	ORS
Global Empowerment	Pearson Correlation	1	.445	-.266
	Sig. (2-tailed)		.269	.524
	N	8	8	8
JAS II	Pearson Correlation	.445	1	-.413
	Sig. (2-tailed)	.269		.309
	N	8	8	8
ORS II	Pearson Correlation	-.266	-.413	1
	Sig. (2-tailed)	.524	.309	
	N	8	8	8

The McKesson reports showed that that by November, 2013, the time spent on each individual case by the UR nurse was six minutes and three seconds. This is a substantial decrease of 6 minutes and 36 seconds per case, based on the historical values of 12 minutes and 39 seconds. However, in attempting to quantify this in terms of financial savings per case screened became extremely difficult. In theory, the UR nurses are tasked with the difficult job of screening all patients that are admitted: inpatient, observation, or outpatient procedure that stays overnight. In reality, there is not a report that is available to quantify the actual number of screened patients and the number varied per the McKesson reports from nurse to nurse, depending on the UR nurses assignment. After conferring with the IS department and the financial analysts, there was consensus that the productivity would need to be determined by analyzing different metrics due to the fact that Utilization Review is a non-revenue generating department.

To examine the department productivity, both the Case Management department and Utilization Review were examined. The two cost centers were compared looking at Total Worked Hours according to job classification. Further, Total Worked Hours, Total Admissions, and Total Discharges were analyzed to calculate the Admission Worked Hours per Unit (WHPU), and the Discharges WHPU. It must be noted that the two departments cost centers did not formally split until late August.

In order to quantitate savings, the financial analyst ran a productivity report (Appendix C) with UR values showing 50% of staffing, based on one year of data from Case Management. These numbers were utilized due to the dramatic decrease in the number of employees allotted to the new UR department to screen the same number of admissions as the Case Management department. Using these values, the UR

department's 7.1 FTE's, showed WHPU of 0.73, with worked hours of 14,725, and salaries of \$518,603.

The UR department, utilizing a calculation of 50% of staffing showed Total Worked Hours of 29,785.50, with Total Admissions at 20,217, and Total Discharges of 20,421. This equated to Worked Hours per Unit Saved of 0.74. Worked hours were 15,061, based on the number of 7.2 FTE's. The translation of total salary savings was calculated as \$530,442 as seen in Appendix A. The Net Present Value (NPV) of the software system was calculated by inputting the salaries saved and systems cost-yearly, minus the initial investment (Table 5).

Table 5

Net Present Value

	Salaries saved each year thereafter	Less Systems Cost-yearly	(101,450.83)	Initial Investment
FY 2013	530,441.82	37,691.76	492,750.06	Net Cash Flow
FY 2014	541,050.65	37,691.76	503,358.89	Net Cash Flow
FY 2015	551,871.67	37,691.76	514,179.91	Net Cash Flow
FY 2016	562,909.10	37,691.76	525,217.34	Net Cash Flow
			\$1,619,677.93	Net Present Value

This shows the substantial yearly savings in Net Cash Flow that will be seen by having invested in this software. The Net Cash Flow has a 2% inflation value to show yearly average salary increases. The NPV was calculated as \$1,619,677.93, over a four-year span.

CHAPTER V

Discussion

This project focused on Utilization Review software and its effect on perceived nurse empowerment within a highly specialized nursing department. Employee empowerment is recognized as an effective means of managing today's radically restructured organizations. There is evidence to support the importance of workplace empowerment to positive organizational outcomes within nursing itself (Laschinger et al., 2009). In addition, projected productivity gains, salary reduction, and the Net Present Value of the system were quantified by financial analyses.

Implication of Findings

Descriptive statistics and alpha reliabilities for all major study variables in the CEWQ-II tool showed that nurses in this UR department perceived themselves to be moderately empowered, as measured by the total score of 14.92 ($SD \pm 1.23$). The total CWEQ-II Cronbach α was 0.58, and for each of the subscales: Opportunity $\alpha = 0.83$, Information $\alpha = 0.71$, Support $\alpha = 0.91$, Resources $\alpha = 0.42$. The mean scores and standard deviations for this study were: Opportunity $M = 4.29$, $SD = 0.68$; Information $M = 3.45$, $SD = 0.50$; Support $M = 3.91$, $SD = 0.61$; Resources $M = 3.25$, $SD = 0.43$.

Formal Power, measured by the Job Activities Scale-II revealed $M = 3.79$, $SD = 0.31$. Higher scores represented job activities that gave higher formal or position power. Informal Power, measured by the Organizational Relationship revealed $M = 3.81$, $SD = 0.74$. Higher scores represented stronger networks of alliances in the organization or higher informal power. The Global Empowerment score is obtained by summing and averaging the two global empowerment items; the JAS and ORS. Higher scores

represented stronger perceptions of working in an empowered setting. The scores for this project were $M = 3.81$, $SD = 0.37$.

The UR nurses in this newly created department reported Opportunity as the most empowering structure ($M 4.29$, $SD 0.68$). The other subscales of Resources, Information, and Support were all in the moderate range with no significant low scores. Additionally, the JAS-II, ORS-II and Global Empowerment were found to have no significant correlations.

Financial analysts within the organization utilized a calculation of 50% of staffing to show Total Worked Hours of 29,785.50, with Total Admissions at 20,217, and Total Discharges of 20,421. This equated to Worked Hours per Unit Saved of 0.74. Worked hours were 15,061, based on the number of 7.2 FTE's. The translation of total salary savings was calculated as \$530,442.

The Net Present Value (NPV) of the software system was calculated by inputting the salaries saved and systems cost-yearly, minus the initial investment. This calculation showed the substantial yearly savings in Net Cash Flow that will be seen by investing in this software. The Net Cash Flow has a 2% inflation value to show yearly average salary increases. The NPV was calculated as \$1,619,677.93, over a four-year span.

Application to Theoretical/Conceptual Framework

The findings of this project support Kanter's (1977, 1993) theory of workplace empowerment, which asserts that empowering work conditions have positive effects on organizational attitudes and behaviors. Laschinger's further work in empowerment has shown that nurses who perceive themselves as empowered have a higher level of autonomy, job satisfaction, and organizational commitment (Hauck et al., 2011). The

access to empowerment structures, such as the InterQual software that was purchased, and relationships and elements within organizational structures influenced how employees felt towards work. The results of this project supported these assumptions.

Limitations

The participants in this project worked within a very specialized area of nursing, therefore limiting generalizability to all health care settings. The two departments separating in the midst of the project greatly limited the sample size. There were no significant correlations found statistically. Additionally, there were difficulties and limitations in the analysis of productivity, given that the department had split unevenly.

Implications for Nursing

Identifying factors that contribute to work conditions that attract and retain highly qualified committed nurses can be put in place by nursing administrators. This is especially important for work redesign to promote professional nursing practice in this time of change in healthcare. Nurses that are exposed to and receptive to empowering workplaces are more likely to feel that their managers and colleagues are facilitating their ability to work effectively. By purchasing this specialized software, nursing was able to more effectively and efficiently screen all admissions. It decreased the time spent on the screening by almost 50% and enabled a new department with a small cadre of RN's to work more productively and efficiently. UR was actually placed under Patient Financial Services, providing these tenured, long term nurses new opportunities and exposure to financial, billing, and coding activities that affect the hospital revenue stream. The highest subscale score of Opportunity in the CWEQ-II can be attributed to this. Over the

next several years, this software will actually save a substantial amount of money for the organization.

Medical necessity denials have increased significantly over the past several years and particularly in 2013. These denials continue to place hospitals in financial jeopardy. By providing employees with appropriate computer software programs, hospitals can mitigate the monetary damages associated with this particular denial and recoupment and improve nurse satisfaction and commitment. These are new tools designed for health care delivery in the nursing arena. Technological advances in the area of Health Information Technology (HIT) are quickly moving development and implementation into areas of clinical and specialty practice such as UR. The potential benefits to nursing practice, quality outcomes, and productivity gains in patient care are limited only to the pace in which these interventions are designed and implemented (Health Care Information & Management Systems Society, 2009).

Recommendations

Replicating this study on a larger scale with a Specialty nursing department that has purchased new software would be helpful in further understanding the relationship between an organization providing empowering structures and perceived empowerment.

Conclusion

October 1, 2013, CMS enacted a sweeping change in how physicians can order inpatient admissions. Medicare used its broadest scope of powers with these unprecedented changes. Under the Two Midnight Rule, only physicians can order admissions. This greatly affected all the mid-level advanced practitioners that continued to have state licensing. These changes have caused tremendous upheaval nationwide as

all health systems scrambled to comply with an unprecedented federal timeline of three weeks that was given to hospitals on September 5, 2013 (Center for Medicare & Medicaid Services, 2013). Hospitals were notified that probe audits of 100% of hospitals nationally would ensue, until September 30, 2014, resulting in recoupment if the certification requirements and medical necessity components are not all in place. Due to the national outcry from the American Hospital Association, a further clarification statement was released by CMS on January 30, 2014, further elucidating the admission requirements (Center for Medicare & Medicaid Services, 2014). Medical Necessity has come to the forefront of all hospital systems, and the importance of this highly regulated admission criteria has become highlighted in the past year. Never before in the American healthcare system has it been more important financially than now, to place systems and software programs in place to support this specialized nursing that blends the clinical world with the regulatory one of American healthcare.

The total gains in productivity for this project were quite impressive. Additionally, the total amount of savings is very important financially to show the return on investment (ROI) on the software purchase. This is important for hospital leadership due to Medicare and Medicaid reimbursement decreases that went into effect October 1, 2013, as well as Medicare pre-payment denials that were implemented August 1, 2013 (Center for Medicare & Medicaid Services, 2014), and the Two Midnight Certification Rule that implemented October 1, 2013.

The results of this project provided support for Kanter's (1977, 1993) theory of structural empowerment. The 100% completed responses showed the level of nursing staff commitment and engagement to the organization. Additionally, the nurses in this

project reported having the most access to the empowerment subscale, opportunity instead of resources. With the current health care environment continually changing, UR nurses are being asked to learn new rules and regulations that are extraordinarily complex. They have been challenged to master new technology and provide valued input in new department operations. It is critical that nurse leaders support work environments that are conducive to the transfer of knowledge in practice to provide high quality care as well as support the financial health of the organization. Creating a structurally empowered work environment increases work engagement, promotes autonomy, and encourages participative decision making, as well as mitigating the financial damage that is occurring in this fast changing healthcare climate that we are currently inhabiting.

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Appendix A

CWEQ-II Tool

(3/28/2014) Kim Frazier - CWEQ-II Tool.pdf

Page 13

CONDITIONS FOR WORK EFFECTIVENESS QUESTIONNAIRE-II

How much of each kind of opportunity do you have in your present job?

	1 = None	2	3 = Some	4	5 = A Lot
1. Challenging work	1	2	3	4	5
2. The chance to gain new skills and knowledge on the job	1	2	3	4	5
3. Tasks that use all of your own skills and knowledge	1	2	3	4	5

How much access to information do you have in your present job?

	1 = No Knowledge	2	3 = Some Knowledge	4	5 = Know A Lot
1. The current state of the hospital	1	2	3	4	5
2. The values of top management	1	2	3	4	5
3. The goals of top management	1	2	3	4	5

How much access to support do you have in your present job?

	1 = None	2	3 = Some	4	5 = A Lot
1. Specific information about things you do well	1	2	3	4	5
2. Specific comments about things you could improve	1	2	3	4	5
3. Helpful hints or problem solving advice	1	2	3	4	5

How much access to resources do you have in your present job?

	1 = None	2	3 = Some	4	5 = A Lot
1. Time available to do necessary paperwork	1	2	3	4	5
2. Time available to accomplish job requirements	1	2	3	4	5
3. Acquiring temporary help when needed	1	2	3	4	5

In my work setting/job:

(JAS)

	1 = None	2	3 = Some	4	5 = A Lot
1. the rewards for innovation on the job are	1	2	3	4	5
2. the amount of flexibility in my job is	1	2	3	4	5
3. the amount of visibility of my work-related activities within the institution is	1	2	3	4	5

How much opportunity do you have for these activities in your present job:

(ORS)

	1 = None	2	3 = Some	4	5 = A Lot
1. Collaborating on patient care with physicians	1	2	3	4	5
2. Being sought out by peers for help with problems	1	2	3	4	5
3. Being sought out by managers for help with problems	1	2	3	4	5
4. Seeking out ideas from professionals other than physicians, e.g., physiotherapists, occupational therapists, dieticians	1	2	3	4	5

GLOBAL EMPOWERMENT

How much of each kind of opportunity do you have in your present job?

	1 = Strongly Disagree	2	3	4	5 = Strongly Agree
1. Overall, my current work environment empowers me to accomplish my work in an effective manner	1	2	3	4	5
2. Overall, I consider my workplace to be an empowering environment	1	2	3	4	5

Conditions of Work Effectiveness Questionnaire-II (CWEQ-II) User Guide

The CWEQ-II (Laschinger, Finegan, Shamian, & Wilk, 2001), a modification of the original CWEQ, consists of 19 items that measure the 6 components of structural empowerment described by Kanter (opportunity, information, support, resources, formal power, and informal power), and a 2-item global empowerment scale which is used for construct validation purposes. Items on each of the six subscales are summed and averaged to provide a score for each subscale ranging from 1-5. These scores of the 6 subscales are then summed to create the total empowerment score (score range: 6-30). Higher scores represent higher perceptions of empowerment. The construct validity of the CWEQ-II was substantiated in a confirmatory factor analysis that revealed a good fit of the hypothesized factor structure ($\chi^2 = 279$, $df = 129$, $CFI = .992$, $IFI = .992$, $RMSEA = .054$). The CWEQ-II also correlated highly with the global measure of empowerment ($r = 0.56$), providing additional evidence of construct validity. Details of this analysis can be found in Laschinger, Finegan, Shamian and Wilk (2001).

The 2 global empowerment items are summed and averaged to create a score ranging from 1-5. This score is not included in the structural empowerment score. The correlation between this score and the total structural empowerment score provides evidence of construct validity for the structural empowerment measure.

Appendix B

Background Data Questionnaire

This is a seven-question survey that will ask for information pertaining to your gender, age, race, years in nursing, years at hospital, certification status, and highest degree held. Please do not place your name on this paper. This is strictly to gather demographic information for the following project:

Utilization Review Software: The Impact on Productivity and Structural Empowerment in Case Management Nurses in an Acute Care Setting

1. Gender _____
2. Age _____
3. Race _____
4. Years in Nursing _____
5. Years at Hospital _____
6. Certification Status Y or N
7. Highest Degree Held:

ADN

Diploma

BSN

BA/BS

MSN

PhD

DNP

Appendix C. Productivity Reports

Productivity Report_1.xlsx - Microsoft Excel																	
Home Insert Page Layout Formulas Data Review View																	
Themes Margins Orientation Size Print Area Page Setup Width: Automatic Height: Automatic Scale: 30% Gridlines Headings Bring to Front Send to Back Selection Pane Arrange																	
AF26																	
Dept	Cost Center	Job Description	Job Code	1/12/2013	2/9/2013	3/9/2013	4/6/2013	5/18/2013	6/15/2013	7/27/2013	8/24/2013	9/7/2013	#####	#####	#####	#####	TOTAL WORKED
	1.2E+08	Director, Medical Services	100	80	80	80	80	80	80	80	80	80	0	0	0	0	1225.5
	310610	Clinical Manager	110	0	0	0	0	0	0	0	0	0	0	0	0	0	80
	310610	Systems Coord Res An	337	80	80	80	80	80	80	80	80	80	0	0	0	0	1520
	310609	Case Manager	338	1583	1671.25	1589.5	1702	216.25	208.75	216	147.5	80.5	0	0	0	0	13738.5
	310610	Utilization Review	1/4	395.75	417.81	397.38	425.50	54.06	52.19	54.00	36.88	20.13	-	-	-	-	3,433.38
	310610	Case Management	3/4	1,187.25	1,253.44	1,192.13	1,276.50	162.19	156.56	162.00	110.63	60.38	-	-	-	-	10,300.13
	310610	Credentialing Specialist	385	0	0	0	0	0	0	0	0	0	25.25	40.5	0	0	65.75
	310609	Case Mgmt Coord	388	88	80	80	80	80	80	80	80	0	0	0	0	0	1288
	310610	Registered Nurse	460	8	22.5	16.25	6.75	0	47.5	48	70.5	64.25	68.5	7.5	0	0	806.5
	310610	Social Worker	470	611.5	602.5	566	579.25	334.5	336	327.75	343.25	338.75	328.25	336.5	320	376	10514.5
	310609	ASST MANAGER II	592	0	8	0	0	0	0	0	0	0	0	0	0	0	8
	310609	Utilization Mgmt Specialis	657	160	138	146	126.75	122	99	80.5	0	0	0	0	0	0	1911
	310609	Quality Management Analy	916	80	80	80	80	80	80	80	80	0	0	0	0	0	1280
	310610	Discharge Planning Special	1230	0	0	0	0	1100.75	1112.25	1176.75	1004.5	1346.5	1386	1424.75	1269.75	1212.9	23441.05
	310609	Utilization Review Speciali	1231	0	0	0	0	265.25	176.25	245.75	0.75	5	3.25	0	0	0	2159.75
	310610	Manager Case Management	1257	0	0	0	0	0	0	0	80	80	80	80	0	0	552
	310610	P00470		0	0	0	0	0	0	0	0	0	0	0	0	0	68.5
	310610	P00460		9.5	25	23.75	3.5	45.5	23.75	28	16.5	37.25	24.5	21.5	0	0	567
		TOTAL		2,700.00	2,787.25	2,661.50	2,738.25	2,404.25	2,323.50	2,442.75	1,743.00	2,032.25	#####	1,910.75	1,589.75	1,588.90	59,221.05
Dept	Cost Center	Job Description	Job Code	1/12/2013	2/9/2013	3/9/2013	4/6/2013	5/18/2013	6/15/2013	7/27/2013	8/24/2013	9/7/2013	#####	#####	#####	#####	TOTAL WORKED
	310609	Director	100	0	0	0	0	0	0	0	12	9.5	0	0	0	0	21.5
	310609	Systems Coord Res An	337	0	0	0	0	0	0	0	0	0	20	0	0	0	20
	310609	Case Manager	338	0	0	0	0	0	0	0	80	80	80	80	104	80	839
	310609	Registered Nurse	460	0	0	0	0	0	0	0	0	0	15	0	0	0	30.75
	310609	Utilization Mgmt Specialis	657	0	0	0	0	0	0	0	80	80	81.5	80	80	76.5	798.5
	310609	Quality Management Analy	916	0	0	0	0	0	0	0	80	80	80	80	88	80	800
	310609	Discharge Planning Special	1230	0	0	0	0	0	0	0	0	0	5.25	50.25	8	22	170.5
	310609	Utilization Review Speciali	1231	0	0	0	0	0	0	0	240	240	295	298	315.5	292.5	2802.75
	310609	Manager Utilization Review	1258	0	0	0	0	0	0	0	0	0	80	80	80	80	640
	310609	Primary Rn	P00460	0	0	0	0	0	0	0	0	0	8	4.75	0	0	39.75
		TOTAL		0	0	0	0	0	0	0	492	489.5	664.75	673	675.5	631	6162.75
AVERAGE HOURLY RATE				1/12/2013	2/9/2013	3/9/2013	4/6/2013	5/18/2013	6/15/2013	7/27/2013	8/24/2013	9/7/2013	#####	#####	#####	#####	TOTAL
TOTAL																	
		Paid Expense		90,753	94,868	89,823	96,346	84,852	80,866	89,768	78,052	90,574	94,025	92,400	79,715	76,943	2,283,385
		Paid Hours		2,700	2,787	2,662	2,738	2,404	2,324	2,443	2,235	2,522	2,581	2,584	2,265	2,220	65,384
		Average Hourly Rate		33.61	34.04	33.75	35.19	35.29	34.80	36.75	34.92	35.92	36.44	35.76	35.19	34.66	34.92
	310610																
		Paid Expense		66,485	70,489	66,254	72,279	64,915	64,425	71,415	60,099	73,308	70,011	67,408	55,470	54,326	1,723,924
		Total Paid Hours		1,976	2,071	1,958	2,026	1,803	1,836	1,903	1,705	2,007	1,913	1,911	1,590	1,589	49,080
		Average Hourly Rate		33.64	34.03	33.84	35.68	36.00	35.09	37.54	35.24	36.52	36.61	35.28	34.89	34.19	35.12

Productivity Report_1.xlsx - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Themes Colors Fonts Effects Margins Orientation Size Print Area Breaks Background Print Titles Width: Automatic Height: Automatic Scale: 30% Gridlines View Print Headings View Print Bring to Front Send to Back Selection Pane Align Group Rotate

AF26	A	B	C	D	E	G	I	K	N	P	S	U	V	X	Z	AB	AD	AE	AF
51	310610		Registered Nurse	460	8	22.5	16.25	6.75	0	47.5	48	70.5	64.25	68.5	7.5	0	0	806.5	
52	310610		Social Worker	470	611.5	602.5	566	579.25	334.5	336	327.75	343.25	338.75	328.25	336.5	320	376	10514.5	
53	310610		ASST MANAGER II	592	0	8	0	0	0	0	0	0	0	0	0	0	0	8	
54	310609		Utilization Mgmt Specialis	657	160	138	146	126.75	122	99	80.5	0	0	0	0	0	0	1911	
55	310609		Quality Management Analy	916	80	80	80	80	80	80	80	0	0	0	0	0	0	1280	
56	310610		Discharge Planning Special	1230	0	0	0	0	1100.75	1112.25	1176.75	1004.5	1346.5	1386	1424.75	1269.75	1212.9	23441.05	
57	310609		Utilization Review Speciali	1231	0	0	0	0	265.25	176.25	245.75	0.75	5	3.25	0	0	0	2159.75	
58	310610		Manager Case Management	1257	0	0	0	0	0	0	0	80	80	80	80	0	0	552	
59			P00470	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68.5	
60	310610		P00460	9.5	25	23.75	3.5	45.5	23.75	28	16.5	37.25	24.5	21.5	0	0	0	567	
61			TOTAL	2,700.00	2,787.25	2,661.50	2,738.25	2,404.25	2,323.50	2,442.75	1,743.00	2,032.25	1,910.75	1,589.75	1,588.90			59,221.05	
62			Cost Center	1.2E+08															
63			Job Description	Job Code	1/12/2013	2/9/2013	3/9/2013	4/6/2013	5/18/2013	6/15/2013	7/27/2013	8/24/2013	9/7/2013	#####	#####	#####	#####	TOTAL	
64																		WORKED	
65	310609		Director	100	0	0	0	0	0	0	0	12	9.5	0	0	0	0	21.5	
66	310609		Systems Coord Res An	337	0	0	0	0	0	0	0	0	0	20	0	0	0	20	
67	310609		Case Manager	338	0	0	0	0	0	0	0	80	80	80	80	104	80	839	
68	310609		Registered Nurse	460	0	0	0	0	0	0	0	0	0	15	0	0	0	30.75	
69	310609		Utilization Mgmt Specialis	657	0	0	0	0	0	0	0	80	80	81.5	80	80	76.5	798.5	
70	310609		Quality Management Analy	916	0	0	0	0	0	0	0	80	80	80	80	88	80	800	
71	310609		Discharge Planning Special	1230	0	0	0	0	0	0	0	0	0	5.25	50.25	8	22	170.5	
72	310609		Utilization Review Speciali	1231	0	0	0	0	0	0	0	240	240	295	298	315.5	292.5	2802.75	
73	310609		Manager Utilization Review	1258	0	0	0	0	0	0	0	0	0	80	80	80	80	640	
74	310609		Primary Rn	P00460	0	0	0	0	0	0	0	0	0	8	4.75	0	0	39.75	
75			TOTAL	0	0	0	0	0	0	0	0	492	489.5	664.75	673	675.5	631	6162.75	
76																			
77																			
78																			
79			AVERAGE HOURLY RATE		1/12/2013	2/9/2013	3/9/2013	4/6/2013	5/18/2013	6/15/2013	7/27/2013	8/24/2013	9/7/2013	#####	#####	#####	#####	TOTAL	
80			TOTAL																
81			Paid Expense	90,753	94,868	89,823	96,346	84,852	80,866	89,768	78,052	90,574	94,025	92,400	79,715	76,943	2,283,385		
82			Paid Hours	2,700	2,787	2,662	2,738	2,404	2,324	2,443	2,235	2,522	2,581	2,584	2,265	2,220	65,384		
83			Average Hourly Rate	33.61	34.04	33.75	35.19	35.29	34.80	36.75	34.92	35.92	36.44	35.76	35.19	34.66	34.92		
84																			
85			310610																
86			Paid Expense	66,485	70,489	66,254	72,279	64,915	64,425	71,415	60,099	73,308	70,011	67,408	55,470	54,326	1,723,924		
87			Total Paid Hours	1,976	2,071	1,958	2,026	1,803	1,836	1,903	1,705	2,007	1,913	1,911	1,590	1,589	49,080		
88			Average Hourly Rate	33.64	34.03	33.84	35.68	36.00	35.09	37.54	35.24	36.52	36.61	35.28	34.89	34.19	35.12		
89																			
90			310609																
91			Paid Expense	24,268	24,380	23,569	24,066	19,937	16,441	18,354	17,953	17,267	24,014	24,992	24,245	22,617	557,841		
92			Total Paid Hours	724	716	703	712	601	487	540	530	515	668	673	676	631	16,235		
93			Average Hourly Rate	33.53	34.06	33.51	33.79	33.16	33.73	33.97	33.90	33.55	35.95	37.13	35.89	35.84	34.36		
94																			
95																			
96																			1,141,692
97																			557,841
98																			583,851

Productivity Pay CERME System Analysis

Ready 80%

Condensed Worked Hours per Unit

635	539	575	487	14,725
859	759	821	758	20,217
842	780	778	778	20,421
0.74	0.71	0.70	0.64	0.73
	Worked Hours per Unit			0.73
	Worked Hours			14,725
	FTE's			7.1
	Salaries			518,603
1,225.25	956.50	1,059.38	882.25	29,785.50
859	759	821	758	20,217
842	780	778	778	20,421
1.43	1.26	1.29	1.16	1.47
	Worked Hrs per Unit Saved			0.74
	Worked Hours			15,061
	FTE's			7.2
	Salaries			530,442

Net Present Value of McKesson InterQual Software

Salaries Saved Years 1-4	Less Systems Cost	(101,450.83)	Initial Investment
530,441.82	37,691.76	492,750.06	Net Cash Flow
541,050.65	37,691.76	503,358.89	Net Cash Flow
551,871.67	37,691.76	514,179.91	Net Cash Flow
562,909.10	37,691.76	525,217.34	Net Cash Flow
		\$1,619,677.93	Net Present Value