

**VISUAL TOOL IN SERVICE INDUSTRIES: EFFECTS ON INDIVIDUAL
EMPLOYEE PERFORMANCE MODERATED BY TRANSFORMATIONAL
LEADERSHIP**

by

AMY BETH MEARS

A thesis submitted to the

Graduate School-Camden

Rutgers, The State University of New Jersey

in partial fulfillment of the requirements

for the degree of Master of Arts

Graduate Program in

Psychology

written under the direction of

Chester Spell, PhD.

and approved by

Christopher Nave, PhD.

Luis Garcia, PhD

Chester Spell, PhD.

Camden, New Jersey [October, 2012]

ABSTRACT OF THE THESIS

Visual Tools in Service Industries: Effects of visual tools on individual employee performance moderated by transformational leadership.

by AMY MEARS

Thesis Director:

Chester Spell, PhD.

This study advances the literature on Lean Six Sigma (LSS) and use of visual tools. The paper focuses on understanding the association between specific visual tools developed within LSS process improvement programs in a service industry and individual job performance, as measured by objective quality assurance reviews and moderated by the type of leader (low transformational vs. high transformational). I further build on the literature by using a within- subjects archival field methodology to test my hypothesis that quality of work will significantly change after visual tool implementation. The data was obtained from 114 employees and 23 managers of a Fortune 100 customer service company. Results show that there is a significant increase in quality scores when using visual tools. Transformational leadership did not moderate this relationship; however, individuals with highly transformational managers were significantly better performers regardless of the visual tools. Implications for further study and for organizations in how

they may better design and implement organizational tools to produce positive outcomes for their employees and organizations in general are discussed.

Acknowledgements

I would like to express my gratitude to my advisor, Dr. Chester Spell, for his expert advice, insight on my methods and writing, but especially for taking this role without any professional obligation to do so. I would also like to express a special thanks to my thesis committee members, Dr. Christopher Nave and Dr. Luis Garcia, for their important feedback and support throughout this process. I would also like to express my gratitude for the support and guidance of the Graduate Program faculty, especially Dr. Charlotte Markey, Dr. Sean Duffy, and Dr. Ira Roseman. Finally, I would like to thank all of my parents, family and friends for their relentless understanding and support, but especially my brother, Justin Koenitzer, for his encouragement and technical advice, and my magnificent husband and best friend, Jason Mears, and my four children, Finn, Jack, Ellison, and baby to be. This thesis would not have been possible without their sacrifice and I am forever grateful.

Table of Contents

| | |
|----------------------|----|
| 1. Title Page | i |
| 2. Abstract | ii |
| 3. Acknowledgements | iv |
| 4. Table of Contents | v |
| 5. Introduction | 1 |
| 6. Methods | 14 |
| 7. Results | 20 |
| 8. Discussion | 23 |
| 9. Appendices | 29 |
| 10. References | 40 |

Introduction

In the current economy, companies are looking for ways to reduce costs. Many employees are given more work duties, as there are less employees, due to layoffs and downsizing. Companies are trying to save money by lowering the number of employees. Employees are expected to complete work that has increased in amount and complexity in the same number of hours, thereby increasing individual productivity expectations. Employees with expanded jobs may be unable to complete work in a timely, high quality manner. A study regarding job enlargement defined as increasing duties and scope of a job, found that this also increased training and skill needs and pay expectations (Campion & McClelland, 1991). Edwards, Scully, and Brtek (2000) found that employees with jobs that were task -and cognitively -simplified had a positive relationship with efficiency and quality of the work output, implying that increased and more complex tasks may decrease quality and production. In this environment there are limited pay increases and more complex jobs. To battle this problem some companies are introducing new tools, such as Lean process improvement, to help employees become more efficient and proficient in completing the added work (Comen & Ronen, 2009; Shah, Chandrasekaran & Linderman, 2008). The purpose of this paper is to identify factors that could increase quality and individual performance, so that individual employees can succeed in this environment.

Literature Review

The business and industrial psychology literature contains a wealth of research on organizational techniques for quality and productivity improvement. Among the more

recent is the Lean and Six Sigma (LSS) approach, which is similar to other well-known and earlier continuous improvement practices such as Total Quality Management (TQM) (Comen & Ronen, 2009). Lean principles dictate that the value of service or product is defined by what the customer wants. Companies employing Lean determine what must be done to create value by determining what processes are critical to create a product that exceeds customer expectations. The processes are then mapped out step by step. It is determined which steps are not necessary to create value and then those steps are eliminated. The result is a new *leaner* process to match only what creates value to the customer. Companies will continually evaluate the process to look for opportunities to eliminate more waste (Womack & Jones, 1996). Six sigma focuses on removing variation in the specific work that is included in the lean process, which should increase the quality of the product (Shah et al., 2008).

The literature demonstrates mostly positive outcomes of LSS implementation in general, but there is a lack of study of the *specific tools* (such as visual boards) applied within LSS to improve the processes. Employment of Lean principles has generally been found to increase quality, decrease production time, and also decrease delivery time (Shah et al., 2008; Mo, 2009). When used in conjunction with other similar process improvement measures such as TQM (Total Quality Management), LSS improvements have been also found to increase cost efficiency, quality conformity, and flexibility of companies (Cua, McKone & Schroeder, 2001). TQM and LSS techniques such as customer focus, leadership and people management increased performance of the organizations (Samson & Terziovski, 1999). Further research is needed to determine which LSS principles are driving these effects.

There are also some negative outcomes associated with LSS programs. Samson and Terziovski (1999) found that LSS process mapping and improvement, using data to track and manage things such as process and quality problems, and strategic planning, did not predict good company performance. Westphal, Gulati, and Shortell, (1999) found a negative association to performance in hospitals that adopted continuous improvement principles due to industry pressure, and copied other hospitals techniques rather than adapting LSS to their particular organization. Too much change of process based on non-normative variation could also cause problems when managing by exception. Spending more time on process improvement reduces time spent on the process which could negatively affect performance (Comen & Ronen, 2009).

One of the tools used in conjunction with Lean and Six sigma continuous improvement efforts are visual boards. Visuals provide a way for important data to be seen immediately rather than spending time on searching. They help to organize, prioritize and make impending problems transparent before they spin out of control. The tools are usually boards that are pictorial and graphical assessments of compliance with process as well as where attention is needed in the work process. They are typically color coded. Red items are in need of attention and note non compliance. Yellow items may need future attention, while green items denote process adherence. Visual boards are used historically on a team, department, unit or corporate level (Mo, 2009; Parry, & Turner, 2006; Liff, & Posey, 2004). There are common themes to companies' success in using visual boards to manage process. Creation of boards must have employee input in order to assure use and success. They

must also be easy to comprehend by all levels of employees, and only pertinent data should be placed on the board (Bilalis, Scroubelos, Antonidadi, Emiris, & Koulouritotis, 2002; Parry & Turner 2006).

There are a variety of limitations of the prior research on LSS. One is that outcomes of LSS and other earlier versions of continuous improvement efforts are typically measured in the manufacturing sector of business as opposed to the service or other industries. Shah et al. (2008) studied LSS interventions by using a survey sent to managers and supervisors of manufacturing plant operations only. Cua and colleagues (2001) used archival data from 163 manufacturing plants around the world to look at effects of continuous improvement efforts on performance of firms. Samson and Terziovski (1999) studied total quality management on 1200 manufacturing firms in Australia. Bilalis et al. (2002) also looked at the manufacturing industry and found visual tools can be effectively used to manage process. Process improvement in the manufacturing industry revolves around the completion of a tangible object with no imperfection and timely completion. Studying the manufacturing industry is helpful in understanding how visual tools as a Lean intervention can improve performance, however there is further need for study in industries such as service and administration of intangibles that may not be measured in the same way as production of objects. For example, in the service industry, proper and timely decision making is often critical to assure customers are satisfied. A decision may be a priority that cannot not be seen in a production line in the same way that a piece of furniture may be seen in a manufacturing plant. Therefore, a visual representation of an impending decision or items needed and already

investigated to make a decision, could assure that the decision maker is constantly aware of the deadline and action items to make that decision timely and properly, resulting in increased customer satisfaction.

Most of the research in the area of continuous improvement and visual tools in business has been also been limited to case studies (Mo, 2009; Liff, & Posey, 2004; Bilalis et al., 2002). While this is a valuable method of research, quantitative analysis is needed to back up the findings of the outcomes of these types of interventions. Parry and Turner (2006) used case studies of visual tools to determine their effect on performance, as well as to identify what makes the visual boards effective tools. They called for future quantitative research to obtain additional measures of success of the boards. There have been limited quantitative studies of continuous improvement implementations. Using a questionnaire, Samson and Terziovski (1999) found that continuous improvement efforts were not significant as contributors to increase in organizational performance. The study was not longitudinal and further investigation is needed to see if there is quantitative evidence in improvement over time after implementation.

Another limitation to the current body of literature to consider is that most studies of continuous improvement interventions are not tool specific. When looking at Lean improvements, these tools have not yet been studied quantitatively as to their effects on individual performance, especially in service industries. There is some research that included visual tools in a broader effort in Lean implementation. Mo (2009) measured a bundle of continuous improvement tools including visual process tracking, and found that there are positive effects on company performance. Westphal

and colleagues (1999) did empirically study hospitals which are a service industry. They found that LSS improvements that were not adapted to customer needs negatively affected organizational performance. However, they did not look at the effects of LSS tools such as visual boards, individually. Shah and colleagues (2008) looked at the effects of Six sigma tools such as standard work procedures and metrics on performance, empirically, and found positive effects on quality as discussed previously. However, they did not study the effects of visual tools individually either.

Visual tools may increase performance, and implementation of LSS interventions has mixed effects on performance when studied. Logically, if visual tools used within the context of Lean principles can increase performance of an individual employee, they would consequently increase the company performance. It is also important to understand if the time constraint due to creation and maintenance of the tools creates a hindrance on individual performance, consequently, organizational performance would be negatively impacted and such tools would be contraindicated.

As discussed, the majority of prior research consists of case studies that look at the effects of LSS on overall company quality performance in the manufacturing industry.

Studies are needed that quantitatively look at the association between specific visual tools used within LSS and individual quality of performance. Filling this gap is important because it can help determine if the visual tools used in LSS process improvement work in the ways that are believed to help organize and prioritize work effectively to help workers produce a better product, even when that product is not

tangible. The gaps in the current environment of job expansion, as well as the current need for tools to expedite production while maintaining quality, show there is a need to empirically study individual visual tools used within the Lean initiatives on individual performance (Samson & Terziovski, 1999). The aim of this study is to determine if one of these tools can improve quality, in a service industry, while aiding employees in accuracy and productivity. The results of this study will be generalizable because the study is testing a specific *way* of organizing information and not the specific information utilized. While there are other ways of displaying information visually, such as on the computer, the study will generalize graphical depiction of work in general. The information chosen to be placed on these specific boards is information that was previously organized in a textual computer program and now is visually organized. Other service organizations can use the information that is normally placed in computer textual programs and place it on a visual board as well.

Theoretical Model and Hypothesis

Typically, companies organize work through computer systems or paper trails. Computers and paper organize information textually. Computers can have infinite textual information in which important data can be missed due to distractions. Lyons, Elliot, Ricker, Weeks, and Chua (1999) found that when a distracter is between the actor (person) and target, the actor is slower and less accurate due to the struggle for internal resources in attention. Stone, Yates, and Parker (1997) studied risk taking behavior as a result of textual versus graphical warnings, and found that graphical representations of essential information, not texts, were mentally encoded to have

meaning for decision making. Butcher (2006) also found evidence that simple diagrams, rather than complex diagrams or text, facilitated learning and comprehension of information. Yamani and McCarley (2010) found further evidence for use of visual versus textual displays, noting color coding symbols increase performance with visual search for important items in a display.

Bilalis and colleagues (2002) introduced the ABC model of communication: "Activators are cues in the environment that give behavior direction. Behavior is observable actions caused by activators. Consequences are outcomes that follow behaviors." Activators can be textual or visual. Computers can be shut down and pressing items pushed out of sight, but visual displays are always present, are a viewable method of communication or activation with the least amount of distraction, and are typically not textually organized when used within LSS improvement. They are simple, color coded, graphical in nature and organized with only useful and pertinent information (Liff & Posey, 2004). Based on the research, visual tools may enhance individual performance by allowing the most effective method of organizing, displaying, and managing work. With this in mind, I propose the following hypothesis:

(H1): Employee performance will significantly change when transparent visual boards are used to organize work/ track performance.

While visual boards may be useful to increase performance; the way in which they are used is the key. The boards are a means for the manager to obtain a picture of the employee's work in progress. They are a way of displaying what is getting in the way of a goal, flagging possible problems, identifying areas of opportunity for an

employee, and celebrating victories. The manager takes the time to review and discuss the board with the individual each day. However, if the board is not used at all or not used properly by the employee, the manager will miss the opportunity for individual coaching and support to positively influence performance.

Highly transformational leaders may be the key to helping individuals use the visual boards to full capacity to increase performance. Transformational leadership is a way of leading a group which involves expressing a goal, expressing a way in which that goal can be achieved, and using the leader example and inspiration to reach the goal (Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Bass, 1999). Transformational leaders also express high expectations of performance and the ability to achieve. Another important characteristic of a transformational leader is providing individual support to their teams. Transformational leaders show their teams where they are going and how to get there (Podsakoff et al., 1990; Bass, 1999).

Transformational leaders may moderate the effects of the visual boards in a several ways. First, they may be able to influence their teams to adopt the change to implement and use the new process which will benefit performance. Changing ways in which we work is not always easy. The transformational leader will encourage the team and model acceptance of the company's new process and goals. Leading by example is a way of gaining trust in employees (Yang, 2011; Podsakoff, et. al., 1990; Palanski & Yammarino, 2011). Yang (2011) suggested that transformational leadership was significantly associated with change commitment. He felt that the supportive nature of a transformational leader had an impact on employee's ability to deal with the difficulties and uncertainty of change. He also found that

transformational leaders were able to gain commitment to quality assurance changes, such as the white board in the present study, because of the collaboration, mutual respect, and alliance on organizational goals that comes through this type of leadership. In another study of 110 customer service employees, it was noted that employees would only adopt a new quality improvement process if the process was communicated by a trustworthy leader (Lam, 1997). A similar recent study of 82 employees in an organization going through change, found that communication and participation in the change process led employees to support the new processes (Jimmieson & White, 2011). Transformational leaders are able to inspire, involve team members in process discussion, model acceptance behavior, and obtain acceptance from the team members (Podsakoff et al., 1990.)

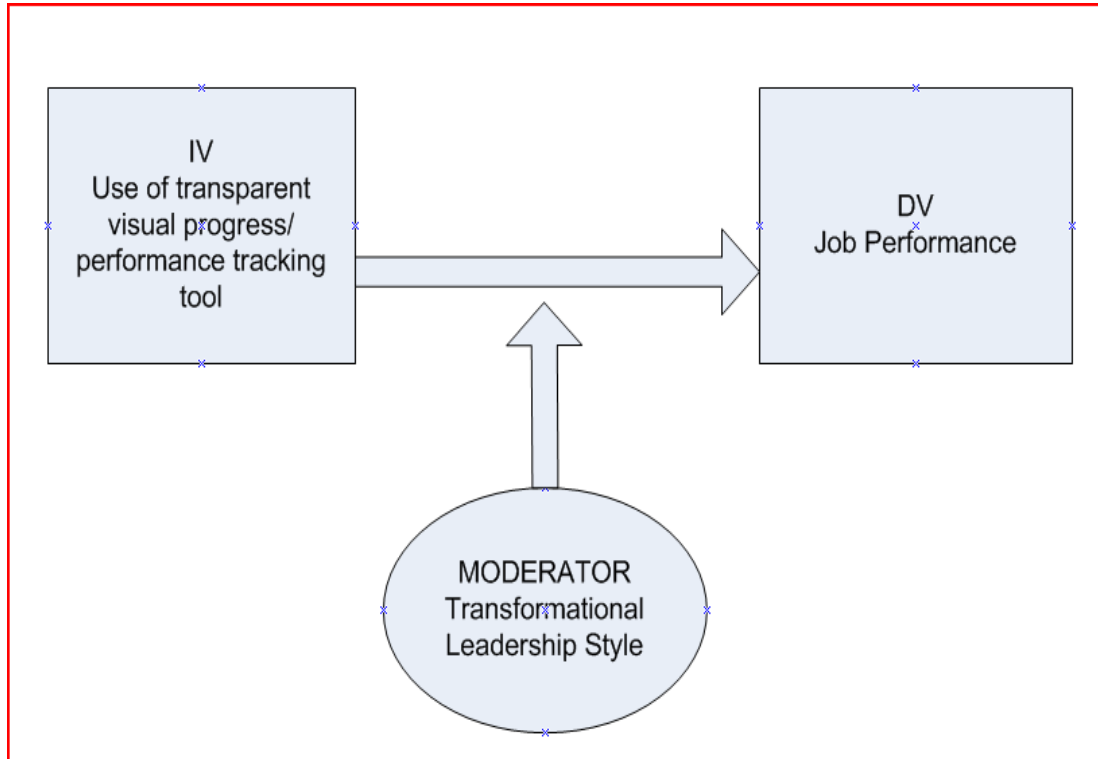
A transformational leader may use the board as a tool for individual support rather than a tool to grade on their employees on performance. Transformational leaders may take this time to discuss goals, rather than what was or was not done properly. Geyer and Streyer (1998) found that managing by exception, a reactive response, actually had a negative impact on performance. This insinuates that the supportive, proactive nature of a transformational leader will increase performance. If a transformational leader identifies a problem, they may take the time to help the individual examine what might be causing the problem and find a better way of doing work. They may provide a model of behavior to stimulate problem solving on the part of the individual employee.

A transformational leader may also take the time to discuss the goals and how the way in which individuals work within the team contributes to the team goal. This

would lead to better performance. Schaubroeck, Lam, and Cha (2007) studied teams of financial service employees and found that the positive effect of transformational leadership was mediated by team cohesion. This indicates that vision and goal of a team were the characteristics that lead to better performance. Bass, Avolio, Jung and Berson, (2003) also found that transformational leadership predicted positive performance which was mediated by team cohesion when studying platoon leaders and their platoon's performance in high stress situations. The individual visual board rolls up to a manager's visual board that the managers review with the team each week. The transformational leader would discuss goals at the review of both team and individual boards in order to inspire their team members to perform better.

The visual boards are a quality improvement initiative implemented to increase performance. If employees adopt the change fully, as well as get the greatest performance boost due to the transformational leader's proactive use of the board, the expectation would be that the transformational leadership would significantly impact the change to positively affect performance. Therefore, I propose the following hypothesis:

(H2): The effects of visual boards on performance will be moderated by transformational leadership (high vs. low).

Figure1: Theoretical Model

The visual tools described are white boards with magnets that represent insurance claims that need decisions to be made within specific time frames. The boards are divided into three sections. The first section is divided into fifteen day time frames horizontally and divided vertically by whom needs to complete an action to resolve the most high priority issue in the department (e.g. Me, Others, Completed), which is the coverage decision for the claim. The second section is divided into columns by who needs to take action, and columns show where in the process the claimant or matter is currently (e.g. independent medical exam completed/ litigation investigation completed). Magnets are moved along the sections so the employees and managers are aware when decisions and actions are pending. Colored flags are also attached to magnets to represent priority. Blue is considered a high priority special investigation

pending. Red represents when a letter is needed to be sent out by the claim handler to terminate benefits. Orange represents the fact that rework is needed, and yellow represents a claimant that has a rescheduled medical exam where the handler is waiting for results to make a benefit decision. The boards are hung inside the cubicle of each employee in their direct line of view. As the board is visible, managers review individual boards daily to discuss questions, concerns, and the proper use of the board.

Methods

Participants

Data collected for this study is archival data that is part of a larger inter-company study on effects of LSS implementation on Fortune 500 Company in the insurance service industry. The participants were 191 employees and their 29 managers. The data included quality assurance claim file handling ratings of employees, as well as archival management survey data. The employees were managers and the claims professionals that expedite the determination and administration of claims benefits to customers or handle arbitrations filed on behalf of service providers for the company. The names of the employees were deleted and each employee was assigned a random number in order to protect identity. The data itself as well as permission to use sanitized data was given by the Vice President of the department where the study was completed.

Design and Procedure

Controls

The control variables that were measured were part of the data set as well. New employees may have lower quality ratings that increase over time due to the learning curve associated with their becoming more familiar and efficient with the claims handling process within the company. This was controlled for by removing employees from the study whom had less than 6 months of experience. To control for inconsistency in number of quality reviews completed, employees that had been

excluded from any reviews due to disability or long term absence, or who had been terminated, were also excluded from the data set. Also, there was only data for 23 of the 29 managers that participated in the survey on management style. The quality assurance data from the team members of the six managers who did not provide data was not used in this study. This left a total of 114 claim adjuster's measures of performance.

Claims handlers typically handle either only complex claims or only non-complex claims. The complexity of a claim increases the difficulty of the decision making or amount of actions needed to handle the claim appropriately and in a timely manner. Visual boards may dramatically assist in organizing the complex claims for better and faster claim handling, or may take away from time needed to handle these time consuming claims. Consequently, claim complexity may be expected to have an effect on the handler's performance. Therefore, complexity of claims was controlled for as well. This was done by identifying and separating the 42% (N=48) of claim handlers who handle complex claims (exempt employees) from the 58% (N=66) who handle non-complex claims (hourly employees).

Manager and employee tenure may also affect performance. If managers and employees are doing the job for a longer period of time, their knowledge and technical skill base may be higher than newer employees. However, if employees have been doing a job in one way for many years, a change such as the implementation of LSS may be more difficult to adapt to and the resistance to change may negatively affect performance. Only manager tenure (M=9.25 years) was part of the archival data set and was used as a control as well.

Performance discipline, or a heightened action plan for improving poor performance, may also affect results of the quality reviews regardless of the intervention. This will not be controlled for as performance discipline information is not provided in the data. This will be discussed further in the limitations section. There is also a possibility of order effects compromising the result due to the fact that employees will be assessed before and then after the intervention. Order effects were not controlled for as this is an archival data set and all employees were instructed to start using the visual board at the time of implementation per company policy.

Measures

A within subjects design will was used. The independent variable that was measured was the intervention of visual boards for managing a workload of critical claims decisions rather than utilizing a textual computer program. Parry and Turner (2006) found that when employees are engaged in creating visual boards, the content and usefulness will then help create an environment for engagement and success of use. After extensive process mapping that included employees, managers and a professional LSS leader, a new lean process was developed and tested. Several employees included in this archival data set were randomly selected to help create the structure of the visual boards that became the intervention in the study. Several layouts of the board were tested, and the current version was finalized. Each participant was then provided with standard procedure training in order to utilize visual boards to manage their own claims. Visual boards were used as a tool for workload distribution and management by the managers of employees in this study, as noted as valuable in Liff and Posey, 2004. Managers were also trained to review

individual visual boards in a daily “Gemba” walk, which is a review of the board to match their exception reports, assess any noted bottlenecks, or audit claims in order to assure any intercessions needed were administered swiftly to avoid delay in the claims process. Employees prepared for the “Gemba” walk daily and this also helped assure that the boards were not tuned out by employees. The employee’s performance was measured for six months prior to the implementation of the visual board, as well as six months after the implementation of the board.

To measure the moderator variable of transformational leadership, a scale was used by the company (see Appendix C), which was previously developed by Podsakoff and colleagues (1990) and used in several other studies (Schaubroeck et al., 2007; Podsakoff, et al. 1996; Yang, 2011). Its validity was recently reestablished by comparing self and observer ratings to assure consistency (Kruger, Rowold, Borgmann, Staufenbiel, & Heinitz, 2011). The scale consists of thirteen transformational leadership measurement statements (among other items) that were rated by managers using a Likert scale from 1 (strongly disagree) to 5 (strongly agree) (e.g. “As a manager, I let the individual contributors’ know that the best performance/service is important”; “As a manager, I encourage individual contributors that they should not settle for second best performance/service”; “As a manager, I encourage individual contributors that they rethink their performance/service problems in new ways”). The scale ratings were summed for each manager. Transformational leadership had two levels (low transformational leader qualities and high transformational leader qualities). The range of transformational scores was 30 to 64 with 57 as the median number. A median split was applied to determine the

difference between high and low transformational leaders. The scale was used by Yang (2011) to measure that transformational leadership and the effects on change acceptance and job satisfaction. Additionally, Kruger et al. (2011) found the study was a valid measure of transformational leadership. Therefore, the measure was considered a good predictor of transformational leadership for use in the current study.

The number of effective files prior to and after the intervention was the measure of the dependent variable of performance. Each month an objective review of three randomly chosen claim files was completed on each participant in the study. It is important to note that these reviews were consistent across employees. A review was conducted on the files assigned to each claim handler that are presented to quality assurance specialists to analyze. The review of each claim file consisted of a set of questions that was designed to assess whether the handling procedures and tasks were completed properly and in a timely way (see appendix A). A rubric was created by management and individual contributors, and each task item was ordered in importance as Critical, Key, Procedural and Administrative (see Appendix A2). Then, the type and number of missed tasks was tallied and compared with a rating model (Appendix B). The rating model was created and approved by the national quality assurance analysts, middle and executive managers, of all claims handlers nationwide. The file handling was rated as effective, partially effective or ineffective. For example, if an employee did not make the proper coverage decision, (i.e. affording claim benefits to someone who is not eligible for the same), then according to the task rubric, a Critical task was missed. The rating model would then be utilized

to determine that a Critical task completed improperly would constitute one ineffective file rating for that employee, for that month. An effective file is an acceptable measure, to the company, of a claim handling that meets all requirements for cost management, timeliness, customer service, proper decision making and law abidance. The archival data set used in the study contained the quality reviews completed for six months prior as well as six months after the intervention of the visual board for each participant, which resulted in a possible eighteen effective files prior to and after the intervention.

Results

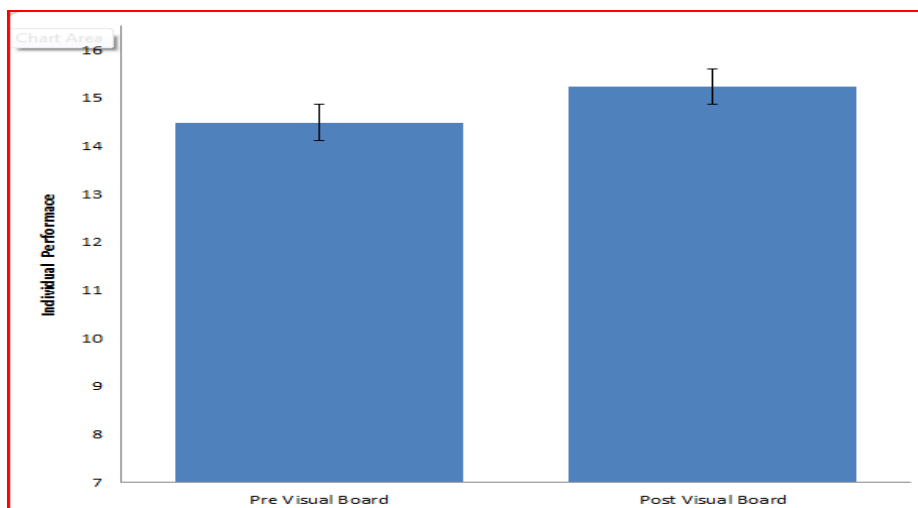
To test my hypotheses, I used repeated measures MANCOVA. The independent variable and moderator variables were categorical, with one continuous control variable, and I measured the dependent variables multiple times. I used the test to evaluate whether employees had significant change in quality performance scores when using visual boards to organize work/ track performance. The independent variable of visual tool use had two levels (pre visual board and post visual board implementation). The moderator variable of transformational leadership had two levels (low transformational qualities and high transformational leader qualities) as explained previously. The control variables consisted of manager tenure (continuous), and complexity of claims which had two levels (complex and non-complex). The continuous dependent variable was performance scores. The means and standard deviations of performance as a function of the visual boards are presented in Table 1. The RM-MANCOVA indicated there was a significant main effect of change in performance when visual board were utilized, $F(1, 108) = 5.341$, $p = .02$, partial $\eta^2 = .05$. As seen in Figure 3, employees had significantly higher performance scores after implementation of the visual boards ($M = 15.23$, $SD = 1.89$) than before the boards, ($M = 14.29$, $SD = 2.44$). There was also a significant interaction between the covariate of manager tenure and performance, $F(1, 108) = 5.7$, $p = .02$, partial $\eta^2 = .05$. , such that the longer a manger had been in his/her current position, the poorer the employees performance. This indicates that the assumption that manager tenure negatively affects the use of the visual boards to improve performance is correct. There were no significant interactions among the covariate of complexity of

file, $F(1, 108) = .408$, $p = .12$, or of the moderator variable of transformational leadership, $F(1, 108) = .003$, $p = .95$. This shows that transformational leaders do not significantly impact performance through the utilization of the board, however, transformational leadership was significantly related to overall performance regardless of board usage, $F(1, 108) = 4.61$, $p = .03$, partial $\eta^2 = .04$. In general, those with high level transformational leaders performed significantly better ($M = 15.27$, $SE = .29$) than those with low level transformational leaders ($M = 14.5$, $SE = .29$), regardless of the use of a visual board. This finding is not surprising given the literature supporting the benefits of transformational leadership in general.

Table 1. Means and Standard Deviations for Performance (number of effective files) as a Function of Visual Boards

| <i>Visual Board Implementation</i> | <i>Transformational Leadership Type</i> | <i>M</i> | <i>SD</i> |
|------------------------------------|---|----------|-----------|
| Pre Visual Board | Low | 14.48 | 2.35 |
| | High | 14.50 | 2.58 |
| TOTAL | | 14.49 | 2.44 |
| Post Visual Board | Low | 14.92 | 1.81 |
| | High | 15.65 | 1.93 |
| TOTAL | | 15.23 | 1.89 |

Figure 1. Main Effect of Visual Boards on Individual Performance



A multiple regression, on the data described above, was performed subsequently in order to corroborate the choice of a median split to determine whether a leader was considered high or low transformational. Table 2 shows the correlations. The results are similar to the RM-MANCOVA. The ANOVA indicated there was a significant main effect of change in performance when visual board were utilized, $F(1, 108) = 6.52, p = .01$, partial $\eta^2 = .05$. There were no significant difference in the outcome when adding the variable of Transformational Leadership; $F(1, 108) = 3.22, p = .02$. This shows, again, that transformational leaders do not impact performance through the utilization of the board, $F(1, 108) = 3.22, p = .02$.

Table 2. Zero-Order Correlations Among Variables

| Correlations | 1 | 3 | 3 |
|--------------------------------|----------|----------|----------|
| 1. Visual Board Use | 1.0 | 0 | .17* |
| 2. Transformational Leadership | 0 | .33 | .07 |
| 3. QA Score | .17* | -.03 | 1.0 |

* $p < .05$

Discussion

The goal of the study was to determine whether visual tool use would have an effect on the performance of employee's quality of claims handling, and if this relationship is moderated by the transformational leadership management style. This was specifically measured by performance scores of claims handlers. The results supported the first hypothesis, that individual visual boards would impact performance. The scores of claim handlers for six months after the implementation of the visual tool were significantly higher than the six months prior to the intervention. Every effective file would be one additional happy customer or shareholder, which is meaningful from a company perspective. This also shows that the visual boards are practically helpful for claim handlers and managers whose year-end performance review and raise depends on the results of the performance measure used in this study. Again, if it is easier for employees to get an increasing amount of work completed in a more efficient way, which will improve customer satisfaction, employee satisfaction and the company's bottom line. In contrast to the second hypothesis, that transformational leadership would moderate this relationship, it was found that transformational managers have better performing employees regardless of the visual boards.

The present study provides new evidence that there is an association between visual tools and individual performance enhancement not only in manufacturing settings, but in customer service oriented companies as well. When studying the use of the claims process organization tool displayed on a whiteboard directly in front of employees, it was found that the individuals in the study had a significant increase in

number of effectively rated claim files. This means that production time, quality of work and proper and timely decision making improved for participants when using the visual tool for claim management, as compared to when not using the tool. The results support the use of the tool in other service oriented companies and warrant further analysis to determine if the practical significance is repeated or increased over time.

It was also found that the covariate of manager tenure does have a significant negative effect on performance when applying Lean visual tools. This may be due to the fact that leaders that have been with a company longer may be more resistant to change perhaps due to being more set in their way of conducting business. This may impede on individuals understanding of the new way, which may lead to lack of use of the helpful tool. This may also instigate any individual's feelings of angst, fear or resistance to the change.

Prior studies have shown both positive associations of visual and graphic tools on group production (Mo, 2009), process variation errors (Parry & Turner, 2006), and organizational performance (Liff & Posey, 2004). Negative associations have been found with organizational level outcomes, such as performance, when using continuous improvement methods including visual tools if not tailored to the company needs (Westphal et al., 1999) and based on abnormal variation rather than identified process problems (Comen & Ronen, 2009). The present study contributes to this literature by looking at individual performance outcomes from individual use of these tools, designed by the people that use the tool. It also contributes to the literature by examining how these tools can be utilized in a customer service oriented

industry, rather than mainly manufacturing settings as the majority of former studies observed. Prior studies focused on the company wide or unit tracking of an item and the process as it goes through a manufacturing plant (Samson & Terziovski, 1999). The current study found the practical importance of individual use of a visual aid to look at the claim handler decision making process in an insurance industry, where decisions directly affect customer benefits administration. Finally, the study contributes to the literature, as there is little research on the effects of transformational leadership within the confounds of lean improvements. While there was no significant effect of transformational leadership on performance through the use of visual boards, we see that transformational leadership in general improves performance, and can be used in conjunction with these tools to improve performance in any company.

This study is unique in that it reviews individual performance outcomes of using a visual aid to track work and make decisions. This can help generalize the effects of visual tools for use in other settings such as education for work progress tracking and decision making for students in which textual learning is not successful. For example, some students may have difficulty keeping assignments and study time organized and prioritized. This individual visual board tracking may be an effective way for teachers and students to maintain transparency of work progress and proper systemization to assure individual quality of learning.

Limitations:

There are several limitations of the present research. The study used archival data of a pre and post -test quasi experiment due to the nature of the implementation of the

intervention of the visual boards in the company studied. This led to limitations on availability of a control group. While Samson and Terziovski (1999) called for research similar to the current study that would include pre-testing, participants were not randomly chosen as all employees were directed to use the new boards per office protocol. Though years of monthly performance data was available for the pre- test condition, as the implementation is new, only six months of post -test data was available when the analysis was completed. It would be useful to continue the study over time to determine long term effects of the boards on performance (Shah et al. 2008) in order to rule out effects of time such as the possibility of increased initial performance due to participant knowledge of management review of the new tool.

Also, over time, the board may become part of the background of the cubicle and the effects may decrease as the initial interest in using the board wears off. As noted previously, due to the nature of the data, there was no way to rule out order effects of the implementation of the tool. Future study should include either a staggered or reverse implementation in different groups to rule out any possible order effects.

The range of transformational scores was 30 to 64 with 57 as the median number. A median split was applied to determine the difference between high and low transformational leaders. This method was chosen to allow analysis of a categorical moderating variable due to the need to do a repeated measures test as this is the way the data was received. Future research could break the data down to specific characteristics of a transformational leader and then analyze each individual characteristic on performance of individuals. Also, with a larger sample, one could dichotomize the transformational leader variable by segmenting into quarters, for

example, and categorizing the top 25% as high and the bottom 25% as low and then cut out the middle 50% from the analysis to provide an even sharper view of high and low.

Other limitations applied as well. The sample size is smaller as some employees were removed from the data set due to either lack of long term data (those that were new or were on disability for long periods of time) or because they were terminated. There is no specific measurement of production available to use in the study which may have also been a helpful measure. Finally, performance ratings are not able to be controlled for, (including attitude, teamwork, customer phone service ratings, following personal development plans, and meeting unit goals on a yearly basis) as they were not available in this data set. This would be helpful to rule out that the direction of performance of the employee over time was not the cause of the increased or decreased quality scores. In sum, a longer period of study, larger sample, and exploration into a measure of proper utilization is needed to determine the true effects of the boards (Samson & Terziovski, 1999).

Future Directions:

There are a number of directions for future research. As discussed previously, it would be useful to study the long term effects of visual tools in settings other than business. Graphic representations and visual tools have been found to increase learning (Stone et al., 1997) and now quality, when used to organize work. Perhaps visual tools could help struggling students in an educational setting, or even to assist patients with long term illness to understand and coordinate their own care to assure better health outcomes. Also, future research on the effects of this visual tool and

similar Lean tools on the stress level of employees could help understand further how the tool may work to help employees' overall individual outcomes. This line of research should not only focus on other service industries, but possibly on the effects of similar type tools in other countries and cultures. It would be beneficial to study these types of tools in a virtual setting, due to growing number of virtual and global spread employees, recently. Lastly, it would be helpful to study cross functional teams and visual tool implementation to learn about the possible effects of cross learning among functions via readily displayed single functional job visual tools (Shah et al., 2008). For example, teams of four employees with different job functions that have a visual tool to track their own portion of the total process within the team may be able to do their own job better if they are able to see the organization and priority of another function of the same process. It is important to find innovative ways to increase employee performance at a time when expectations are growing, in order to assure the health and well-being of the employee and the company placing these new demands on staff. Lean process improvements such as the use of visual tools are one of these new ways of working. It is equally important to study these tools to assure that they are indeed helping the workforce rather than placing additional and fruitless demands on an already taxed group. In general, it is found that visual tools, when designed by employees and within view of both employees and managers, are most effective at organizing and increasing quality of work. Customer service and then overall company performance should increase, when the quality of work increases as well. This study is one step toward finding out what works to boost individual performance levels without causing contradictory outcomes.

Appendices

| | |
|---|-----------------|
| APPENDIX A: QAR Question- MEDICAL MANAGEMENT RUBRIC | Criteria |
| 01BGD04: CR/CS involvement: Single if one medical management CCR or CS handled the file, even if handled by Fast Path for the initial call (ICP). If Fast Path team kept the file for additional time due to a green strategy that eventually changed to yellow, the response will be Multiple. 01BGD07: | |

| | |
|--|---|
| <p># of IME Requested: The number posted here will result in the IME question being asked for each IME on file.</p> <p># of PAR Requested: The number posted here will result in the PAR question being asked for each PAR on file.</p> | |
| <p>02COV02:</p> <p><u>Was the coverage phase handled appropriately?</u></p> <p>Coverage decision is incorrect: Decision to provide coverage or type of coverage was incorrect.</p> <p>Valid policy not established: Coverage assignors not contacted to appropriately add or remove coverage when needed.</p> <p>Other coverages are not appropriately identified, investigated or resolved: Additional coverages such as med pay (MD and DE) were available but not noted or utilized.</p> <p>Coverage denial letters were not sent timely: Denial letter should be sent within 60 days.</p> <p>Coverage denial letters were defective: Letters did not reference policy language/statutes.</p> <p>Posting did not properly reflect the key elements of the coverage decisions: Posting is not detailed enough to provide an understanding of the investigation.</p> <p>Host vehicle not properly determined: The vehicle the claimant was in at the time of the loss was not investigated/determined/noted, especially if IVNI.</p> <p>Inappropriate coverage limit applied: Limits applied incorrectly for either low limit, or low limit applied when standard coverage should have applied.</p> <p>Coverage question required waiver investigation: For MD only-DMV check not completed to r/o waiver, copy of policy not requested for passengers or drivers other than our insured, or Views not reviewed to r/o waiver on our own policy.</p> <p>Health Care Primary option selected and not identified: HC primary not noted.</p> <p>PIP coverage option was not correctly identified: Option should be posted in the billing note. (if wage/essential claim is presented and the option missed,critical)</p> <p>NJ Deemer not appropriately handled: Incorrect state coverage applied.</p> <p>System coverage code was incorrectly applied: Incorrect CVCD (LIMP when should be NFMP, etc.)</p> <p>Deductible misapplied: Deductible applied incorrectly</p> <p>Reservation of Rights letters were not sent timely: ROR letter should be sent as soon as a coverage issue is known.</p> <p>Coverage Dispute Resolution (CDR) process not followed: Process outlined in job aid was not followed.</p> <p>Coverage investigation or determination not resolved timely: 30 day timeframe</p> | <p>Critical</p> <p>Critical</p> <p>Critical</p> <p>Key</p> <p>Key</p> <p>Procedural</p> <p>Key</p> <p>Critical</p> <p>Critical</p> <p>Critical</p> <p>Procedural</p> <p>Critical</p> <p>Administrative</p> <p>Critical</p> <p>Key</p> <p>Procedural</p> <p>Procedural</p> |
| <p>04ELI01:</p> <p><u>Was the eligibility phase handled appropriately?</u></p> <p>Household or Residency issues not investigated properly: POR, Decision Net search needed, FCS utilization.</p> <p>Non-standard vehicle involved and not identified, investigated or resolved: Vehicle involved does not meet the definition of auto per our policy and endorsement.</p> <p>Owned but not insured vehicle not identified, investigated or resolved: Insured occupying vehicle not insured under our policy and no investigation to confirm insurance with another company.</p> | <p>Critical</p> <p>Critical</p> <p>Critical</p> |

| | |
|--|---|
| <p>Permissive Use issue not investigated properly: Investigation required and handler did not recognize this or complete the investigation.</p> <p>Criminal or Intentional Acts not investigated properly: Investigation required and handler did not recognize this or complete the investigation.</p> <p>Striking Vehicle type was not determined for pedestrian claim: Commercial vs. PPV</p> <p>Collateral sources available (WC, Medicare, Disability) and not correctly applied: Restricted driver not investigated properly: Restricted driver (critical) potential was noted in coverage screen, however claims handler did not note or investigate.</p> <p>Police Report needed to further investigation and not obtained: Police report needed to confirm accident facts/injury/involvement.</p> <p>Home Office or local management involvement: Management or HO opinion needed or should have been notified and were not.</p> <p>Posting did not properly reflect the key elements of the eligibility investigation/decision: Notes posted to the file should be clear and show thought process as to how a determination had been made. C&E Template not posted.</p> <p>Eligibility decision was incorrect: Claimant was provided benefits when he/she was not eligible. Claim was denied when the claimant was eligible.</p> <p>Delay letter was needed and not sent: Notify claimant in writing as to what is needed for an eligibility determination.</p> <p>Eligibility investigation or determination not resolved timely: 30 Days</p> | <p>Key</p> <p>Critical</p> <p>Critical</p> <p>Key</p> <p>Key</p> <p>Administrative</p> <p>Procedural</p> <p>Critical</p> <p>Key</p> <p>Procedural</p> |
| <p>05MI01:</p> <p><u>Was the medical investigation handled appropriately?</u></p> <p>Initial Loss history/ISO not investigated or posted: Standard work not followed</p> <p>Vehicle damages not considered: Damages should be posted along with claim handler's thoughts as to causality of injuries, possible low impact.</p> <p>Natural causes /pre-existing conditions not investigated: Co-morbid conditions (diabetes, obesity, etc.) are present but claims handler did not investigate in reference to their impact on claimant's injuries and recovery.</p> <p>Prior records not obtained or evaluated: Prior records needed regarding prior injuries and conditions if these may have affected the claimant's injuries or recovery.</p> <p>Subsequent ISO follow-up (every 6 months): Follow up ISO runs needed to r/o subsequent accidents.</p> <p>Recorded interview not considered when necessary for causality investigation: RIs not obtained when needed with claimant, witnesses, third party.</p> <p>Allowed pre-cert vendor to make the medical decision when not appropriate: Lack of ownership of medical management.</p> <p>Medical care nurses were not appropriately consulted: Nurses should be utilized to help set accurate reserves, life expectancies, and make medical management decisions when necessary.</p> <p>Posting is not sufficient to reflect the key elements of the investigation: Posting should show a clear thought process and understanding of the claimant's injuries, treatment and next steps.</p> | <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> |
| <p>06NMI01:</p> | |

| | |
|--|----------------|
| <u>Was the non-medical investigation handled appropriately?</u> | |
| <u>If No, the following options will appear:</u> | |
| Process Defects | |
| Did not review the claim within 2 business days after file was transferred: Claim status note outlining status of reassignment and action plan within 2 business days. | Administrative |
| Did not lay out specific action plans after investigation: Action plans include next steps based on injuries and treatment information. No need to copy and paste PPS info into the notepad as treatment should be commented upon when laying out action plans. | Procedural |
| Did not set up appropriate cycle time for next file review: File needed either a shorter or longer cycle. | Administrative |
| Posting is not sufficient to reflect the key elements of the investigation: Based on the notes, it is unclear as to what the medical management CCR/CS has determined in the investigation. | Procedural |
| Did not keep the customer informed as to the status of the file: Follow up should be completed, especially regarding IMEs, treatment plan denials, etc. and any questions the claimant has answered. | Procedural |
| Ineffective Decisions | |
| Did not recognize or address issues raised by other handler (Intake, Peer): Fast Path noted issue with claim and handler did not note or investigate same. | Procedural |
| Fraud signs not properly recognized or referred: Low impact, intentional acts, jump ins, etc. | Key |
| Did not recognize UM/UIM exposure: BI claim likely but claim has not yet been set up; no recognition of this by the medical management handler. | Procedural |
| Did not execute the action plans effectively: Action plans not followed timely or at all. | Procedural |
| Mandatory Medicare reporting was not handled appropriately: If FP has not obtained Mandatory Medicare reporting info, it is the Medical Management handler's job to obtain and post same so as to avoid violation of the law and heavy fines. | Procedural |
| Claims strategy not appropriately adjusted: Strategy was not updated based on new information. | Administrative |
| Subrogation | |
| Commercial Vehicle was not investigated properly: Commercial vehicle involved and no referral made after info was obtained. | Key |
| Out of State Vehicle was not investigated properly: Out of State vehicle involved and no referral was made after information was obtained. | Key |
| Dram opportunities were not investigated properly: Dram investigation was not completed prior to sending referral, or referral was not sent. | Key |
| Mechanical Defects were not investigated properly: Mechanical Defects possibly caused the MVA but no investigation was completed prior to referral, or referral was not sent. | Key |
| Medical Malpractice was not recognized or referred: Possible Medical Malpractice without investigation or referral. | Key |
| Uninsured 3rd Party was not noted and referred: Referral for uninsured third party was not recognized/referral was not completed. | Key |
| Concurrency was not recognized or referred: Concurrency was missed/referral not completed. | Key |
| Police report was not requested: Police report not obtained in | Key |

| | |
|---|--|
| <p>order to r/o subrogation potential.</p> <p>Did not contact appropriate EIP, attorneys or providers within 2 business days after file was transferred: Timeframe: 2 business days.</p> <p>Did not appropriately address handling recommendations from Fast Path team: Fast Path team noted possible subrogation but Medical Management handler did not follow up on same.</p> <p>Subro opportunities not properly recognized or referred: Opportunities/referral not sent to subro timely for DE.</p> <p>Underwriting issues not properly identified and addressed: Underwriting not notified of potential issues, such as DWI.</p> | <p>Administrative</p> <p>Key</p> <p>Key</p> <p>Administrative</p> |
| <p>07PRA01: Par 1</p> <p><u>Was the Par referral(s) handled appropriately?</u></p> <p>Spectrum information was not utilized to move the claim forward: PPS information not utilized to make medical management decisions.</p> <p>Posting is not sufficient to reflect PAR decisions and actions: PAR occurred with denial but handler did not note same or consider next steps due to the outcome or PAR occurred incorrectly and CCR/CS did not note same or notify management.</p> <p>Escalated case note as a result of PAR not addressed timely: Case note was not addressed timely.</p> | <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> |
| <p>09IR01: IME 1</p> <p><u>Was the IME referral(s) handled appropriately?</u></p> <p>Process Defects</p> <p>IME denial letters were not sent timely: IME letter should be sent within three days of the IME.</p> <p>TOB date was not posted in Spectrum: TOB should be posted as soon as results of the IME are known.</p> <p>IME denial letters were defective: Information on the denial letter was incorrect.</p> <p>Did not recognize and address errors on vendors' reports: IME was defective in some way and claims handler did not note same.</p> <p>IME referral process was not followed:</p> <p>IME referral did not have right specialties: IME set up with the incorrect specialty</p> <p>IME referral did not have appropriate questions: IME was appropriate but handler did not have IME doctor answer questions appropriate to the case.</p> <p>IME referral did not include appropriate medical information: Appropriate records were not obtained in order for IME doctor to complete an informed record review.</p> <p>Did not submit new medical information: Additional information received that would have been pertinent to the IME doctor's decision and was not sent to PPS for his/her review.</p> <p>Ineffective Decisions</p> <p>Decision to set up IME referral was incorrect: IME referral was made when not necessary.</p> <p>Decision to set up IME referral was not timely: IME needed prior to or after the date the referral was made.</p> <p>Medical care nurses were not appropriately consulted: MCC could have provided additional information prior to making the IME decision but was not consulted.</p> <p>Management not properly involved: Management needed in making IME decision but not involved.</p> | <p>Key</p> <p>Administrative</p> <p>Procedural</p> <p>Administrative</p> <p>Key</p> <p>Procedural</p> <p>Administrative</p> <p>Administrative</p> <p>Key</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> |

| | |
|--|--|
| <p>Litigation team not properly involved: IME would affect arbitration, or recent arbitration would help make a better decision and litigation team was not involved.</p> <p>Negotiation opportunity not appropriately recognized and addressed: CCR/CS could have avoided an arbitration filing by negotiating directly with the provider.</p> <p>Lack of Communication/Follow-ups: Follow up was needed to move the file forward but was not completed or necessary information was not obtained.</p> <p>Did not follow up with EIP/Provider to confirm future treatment plan prior to IME: Lack of follow up resulted in an unnecessary IME.</p> <p>Did not appropriately contact EIP to explain IME processes and schedules:</p> <p>Did not appropriately contact EIP to explain IME results:</p> <p>Others</p> <p>Posting is not sufficient to reflect IME decisions and actions: Posting in vision does not reflect decisions made based on IME results, or posting does not explain need for IME.</p> <p>Documents not properly labeled and stored in E-folder:</p> <p>Did not provide customers' complaints to the right person: Did not escalate pertinent issues to management.</p> | <p>Administrative</p> <p>Administrative</p> <p>Key</p> <p>Administrative</p> <p>Administrative</p> <p>Procedural</p> <p>Administrative</p> <p>Administrative</p> |
| <p>12LWES01:</p> <p><u>Were the lost wages/essential services handled appropriately?</u></p> <p>Wage payment not calculated properly appropriately?</p> <p>Wage loss claim not confirmed with employer: 7 days or less lost wages required a call to employer to verify wages; greater than 7 days wage and salary forms and disability note are needed.</p> <p>Wage payment not posted properly: Note in the notepad re: wage payment, calculation form uploaded to e-folder.</p> <p>Wage forms not sent to employer when required: For claims greater than 7 days</p> <p>Wage claim not investigated timely: Wage claim not investigated when it was known that claimant lost time from work.</p> <p>State determination letter not obtained when required: Refers to Temporary State Disability Benefits; Determination letter required when more than 7 days are missed and claimant may be eligible for TSD.</p> <p>Disability slip not obtained when required: Greater than 7 days</p> <p>Essential Services payment not calculated properly:</p> <p>Essential Services payment not posted properly: Note in notepad outlining thought process, result of investigation and payment amount.</p> <p>Essential Services not confirmed with essential services provider: Phone call to essential service provider must be made to verify services.</p> <p>Essential Services forms were not properly sent: Known potential for essential services claim and forms not sent.</p> <p>Essential Services forms/proof of payment documentation not properly obtained: Receipts or other proof of payment not received prior to payment being issued.</p> <p>Essential Services claim not investigated timely: Essential services claim not investigated when it was known that essential services were provided.</p> | <p>Key</p> <p>Key</p> <p>Procedural</p> <p>Key</p> <p>Key</p> <p>Procedural</p> <p>Key</p> <p>Procedural</p> <p>Key</p> <p>Key</p> <p>Key</p> <p>Key</p> |
| <p>13FMW04:</p> | |

| | |
|--|--|
| <p><u>Was the form work handled appropriately?</u></p> <p>New Jersey Formwork</p> <p>Standard policy Application form (NJL2017) not sent properly: Incorrect form sent/sent late/not sent at all for standard policy</p> <p>Basic policy Application form (NJL2018) not sent properly: Incorrect form sent/sent late/not sent at all for basic policy</p> <p>Standard policy with Medical Expenses Only form (NJL2020) not sent properly: Incorrect form sent/sent late/not sent at all</p> <p>Med Pay form (NJL2011) not sent properly: Incorrect form sent/sent late/not sent at all</p> <p>Health Insurance Primary policy (NJL2016) not sent properly Incorrect form sent/sent late/not sent at all</p> <p>Health Insurance Primary policy with no available health insurance form (NJL2012, NJL2017) not sent properly and (NJL2017) form not sent properly: Incorrect form sent/sent late/not sent at all</p> <p>Affidavit of No Insurance form (NJL2001) not sent properly: Incorrect form sent/sent late/not sent at all/sent when not needed</p> <p>Lack of follow up for necessary formwork: Lack of follow up which caused a delay in receipt of formwork</p> <p>Formwork not signed and dated</p> <p>Correspondence grammatically incorrect</p> | <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> |
| <p>14BMGMT02:</p> <p><u>Was the bill processing handled appropriately?</u></p> <p>Bills not paid timely: NJ: Paid within 60 days or 105 if properly delayed; DE: within 30 days of receipt; MD: within 30 days of receipt</p> <p>Bills not paid correctly:</p> <p>Bills not appropriately delayed/coded: Bills delayed for incorrect reason or if multiple reasons for delay, all reasons were not listed; bills delayed when unnecessary</p> <p>Bills not timely delayed</p> <p>Bills not properly denied/coded: Bills denied for incorrect reason, or if multiple reasons for denial, all reasons were not listed. Bills denied when unnecessary. Bills not denied timely</p> <p>Required forms not received prior to processing of bills: Claim by claim basis: PIP app, proof of residency, AONI, etc.</p> <p>Direction to Pay (DE and MD) was incorrectly posted</p> <p>Bills paid without sufficient SSA: SSA not posted, posted with insufficient funds when bill payment would exceed that amount.</p> <p>Non-final system payments noted in financial screen: System updates of LCE to cover payment of bills due to claims handler posting inadequate reserves.</p> <p>Communication with CBU was not appropriate: Instructions to CBU were not correct; contact with CBU not completed when necessary.</p> <p>Interest was not properly addressed: Damages note needed outlining reason for interest payment.</p> <p>Did not move bills appropriately within bill review system(s).</p> <p>Alternate Address not used appropriately: No note posting rationale for sending payment to alternate address or not sent to alternate address when warranted.</p> <p>Clock starts date posting is not appropriate</p> <p>Voided payment not properly addressed: Voided payments received but claims handler did not timely address payment</p> | <p>Key</p> <p>Key</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Key</p> <p>Key</p> <p>Administrative</p> <p>Administrative</p> <p>Procedural</p> <p>Administrative</p> <p>Procedural</p> <p>Procedural</p> <p>Procedural</p> <p>Key</p> |

| | |
|--|---|
| with delay, payment or denial. | |
| Death Benefits calculation was completed incorrectly | Procedural |
| Death Benefits calculation was not posted: Posting should be in notepad | Procedural |
| 15RES02: <u>Was the reserve set up appropriately?</u> Authorization is not posted: SSA was not posted once the claim was okay to pay. LCE Reserve is not set up timely: Initial reserve set w/in 5 business days, subsequent changes posted as new information is received within 5 business days. LCE Reserve level is not appropriate: LCE does not reflect the most likely overall payout amount. ECE Reserve is not set up timely: Set when expenses will be needed. ECE Reserve level is not appropriate: ECE does not reflect the most likely overall payout amounts. Reserve rationale is not posted sufficiently: Detailed note needed; selected if note was not posted at all or if detail was lacking. Did not update the reserve throughout the life of the claim: Did not update the reserve as warranted based on new information. | Administrative Critical Key Key Key Procedural Critical |
| 15RES04: Actual LCE reserve at time of review or prior to closing XXX What LCE reserve should be: XXX Actual ECE reserve at time of review or prior to closing XXX What ECE reserve should be XXX | |
| 18FRES02: <u>Was the file resolution handled appropriately?</u> Did not follow up proactively to move the case forward: Claim remained open longer than necessary due to lack of follow up/review. Timing of closure inappropriate: Claim closed prematurely resulting in reopening potential. Did not follow wrap-up protocol: Phone call to claimant optional and if no response, letter; letters to all providers to confirm no additional treatment, no outstanding bills. Did not transfer file to Subro or Lit team properly: Subro or lit were still active on the file but CCR/CS did not appropriately forward the claim owner assignment. Resolution rationale is not posted sufficiently: File was closed without sufficient detail posted as to reason for closure. | Procedural Procedural Procedural Procedural Procedural |
| | |

| | |
|--|--|
| | |
| <p><u>26OHG01: The overall handling of this file is:</u></p> <p>A) Effective: All Critical Timeframes Met; and All Critical, Key and Procedural Tasks Completed; and Most Administrative tasks complete (with no impact on outcome)</p> <p>B.) Partially Effective: File does not meet effective or ineffective criteria.</p> <p>C.) Ineffective: Critical task not completed Critical Task completed untimely, regardless of impact; or Key Task not complete; or Key Task completed untimely with financial impact; or Some Procedural tasks not complete; or Some procedural tasks completed late with financial impact; or Significant amount of procedural tasks completed untimely with no impact; or Significant amount of Admin Tasks not complete</p> | |

APPENDIX A (2):**Task definitions**

Critical: Vital processes that must be completed timely and properly in order to assure the success of the claim. These items are so essential that even if the claim handler corrects improper handling, they will be considered ineffective regardless of impact.

Key: Essential processes that must be completed timely and properly in order to assure quality claims handling.

Procedural: Activities which are needed to assist in completing Key tasks that in and of themselves may not affect the outcome of the claim, but collectively will affect the outcome of the file.

Administrative: Tasks required for appropriate claim handling and or internal office procedures, but may not impact the overall outcome of the file.

APPENDIX B:

Rating Model

| | Critical | Key | Procedural | Administrative |
|--------------------|---|--|--|---|
| Effective | <ul style="list-style-type: none"> ✓ Completed appropriately ✓ Completed Timely | <ul style="list-style-type: none"> ✓ Completed appropriately ✓ If completed untimely, must have no impact to file | <ul style="list-style-type: none"> ✓ Completed appropriately ✓ If completed untimely, must have no impact to file | <ul style="list-style-type: none"> ✓ Completed appropriately ✓ If completed untimely, late, or incorrectly, must have no impact to file ✓ Limited to 1-2 violations |
| Partial | N/A | N/A <i>(Interpretation= if a key or procedural task was late with no impact it can't be anything better than partially effective)</i> | <ul style="list-style-type: none"> ✓ Not completed ✓ Not completed timely with financial impact on the file ✓ Only 1 violation required | <ul style="list-style-type: none"> ✓ Not completed appropriately; or ✓ Completed late or incorrectly with financial impact on the file ✓ Numerous violations required (3) |
| Ineffective | <ul style="list-style-type: none"> ✓ Not completed appropriately; or ✓ Not completed timely | <ul style="list-style-type: none"> ✓ Not completed; or ✓ Completed late or incorrectly with financial impact on the file ✓ Only 1 violation required | <ul style="list-style-type: none"> ✓ Not completed; or ✓ Completed late or incorrectly with financial impact on the file ✓ 2 or more violations required | <ul style="list-style-type: none"> ✓ Not completed appropriately; or ✓ Completed late or incorrectly with financial impact on the file ✓ Significant amount of violations required (4+) |

References

- Bass, B.M.; Avolio, B.J.; Jung, D.I; Berson, Y. (2003). Predicting Unit performance by assessing transformational and transactional leadership. *Journal of Applied Psychology*, 88, 2, 207-218.
- Bass, B.M. (1999). Two Decades of Research and development of Transformational Leadership. *European Journal of Work and Organizational Psychology*, 8, 1, 9-32.
- Bilalis, N., Scroubelos, G., Antonidakis, A., Emiris, D., and Koulouritotis, D. (2002). Visual factory: basic principles and the ‘zoning’ approach. *International Journal of Production Research*. 40, 15, 3575–3588.
- Butcher, K. (2006). Learning from text with diagrams: Promoting mental model development and inference generation. *Journal of Educational Psychology*, 98, 1, 182–197.
- Campion, M., & McClelland, C. (1991). Interdisciplinary examination of the costs and benefits of enlarged jobs: A job design quasi experiment. *Journal of Applied Psychology*, 76, 2, 186-198.
- Comen, A. & Ronen B. (2009). Overdosed management: How excess of excellence begets failure. *Human Systems Management*, 28, 3, 93-99.
- Cua K.O., McKone, K. E., & Schroeder, R. G. (2001). Relationships between implementation of TQM, JIT, and TPM and manufacturing performance. *Journal of Operations Management*, 19, 675-694.
- Edwards, J. R., Scully, J.A., & Brtek, M. D., (2000). The nature and outcomes of work: A Replication and Extension of Interdisciplinary work-design research. *Journal of Applied Psychology*, 85, 6, 860-868.
- Geyer, A. L. J & Steyrer, J.M., (1998). Transformational leadership and objective performance in banks. *Applied Psychology: An International Review*, 47, 3, 397-420.
- Jimmieson, N.L. & White, Katherine, M. (2011). Predicting Employee Intentions to support organizational change: An examination of identification processes during a re-brand. *British Journal of Social Psychology*, 50, 331-341.
- Kruger, Rowold, Borgmann, Staufenbiel, & Heinitz; (2011). The discriminant validity of transformational and transactional leadership: A Multitrait-multimethod analysis of norms for the German Transformational Leadership Inventory. *Journal of*

- Personnel Psychology*. 10, 2, 49-60.
- Lam, Simon S.K., (1997). Influencing tactics on successful implementation of quality improvement policies. *Psychological Reports*, 80, 1155-1158
- Liff, S., & Posey, P., (2004). *Seeing is believing: How the new art of visual management can boost performance throughout your organization*. New York: AMACOM.
- Lyons, J., Elliot, D., Ricker, K.L., Weeks, D.J., & Chua, R. (1999). Action- centered attention in virtual environments. *Canadian Journal of Experimental Psychology*, 53, 2, 176-187.
- Mo, J. P. (2009). The role of lean in the application of information technology to manufacturing. *Computers in Industry*. 60, 266-276.
- Palanski, M. E & Yammarino, F. J (2011). Impact of behavioral integrity on follower job performance: A three study examination. *The Leadership Quarterly*, 22, 765-786.
- Parry, G. C., & Turner, C. E. (2006). Application of lean visual process management tools. *Production Planning and Control*, 17, 1, 77-86.
- Podsakoff, P.M., MacKenzie, S.B., Moorman, R.H., Fetter, R. (1990). Transformational Leader Behaviors and Their effects on Followers' trust in leader, satisfaction and organizational citizenship behaviors. *Leadership Quarterly*, 1,2,107-142.
- Podsakoff P.M., MacKenzie, S.B., Bommer, W.H. (1996).Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship behaviors. *Journal of Management*. 22, 2, 259-298.
- Samson, D. & Terziovski, M. (1999). The relationship between total quality management practices and operational performance. *Journal of Operations Management*, 17, 393-409.
- Schaubroeck, J., Lam, S.K., Cha, S.E. (2007). Embracing Transformational Leadership: Team values and the impact of leader behavior on team performance. *Journal of Applied Psychology*, 92, 4, 1020-1030.
- Shah, R., Chandrasekaran, A., & Linderman K. (2008). In pursuit of implementation patterns: the context of lean and six sigma. *International Journal of Production Research*, 46, 23, 6679–6699.
- Stone, E. R., Yates, F. Y., & Parker, A. M. (1997). Effects of risk taking behavior and graphical displays on professed risk -taking behavior. *Journal of Experimental*

- Psychology: Applied*, 3, 4, 243-256.
- Westphal, J.D., Gulati R., & Shortell, S.M. (1999). Customization or conformity? An institutional and network perspective on content and consequences of TQM adoption. *Administrative Science Quarterly*, 42, 366-394.
- Womack, J. & Jones, T. (1996) *Lean thinking*. New York: Simon and Shuster Ltd.
- Yamani, Y., & McCarley, J.S. (2010). Visual search asymmetries within color-coded and intensity-coded displays. *Journal of Experimental Psychology: Applied*, 16, 2, 124–132.
- Yang, Y.F. (2011). Leadership and Satisfaction in change commitment, *Psychological Reports*, 108, 3, 717-736.
- Yang, Y.F. (2011). Leadership and change commitment in the life insurance service context in Taiwan: The mediating-moderating role of job satisfaction. *Perceptual and Motor Skills*, 112, 3, 889-914.