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Organizational communication and change: A case study on the implemenation of an innovation at a Florida medical facility

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Organizational Communication and Change: A Case Study on the Implementation of an Innovation at a Florida Medical Facility

by

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ABSTRACT

This study examined how employees at a Florida medical facility felt regarding the upcoming change to a paperless system and whether a training program administered by the organization was effective in reducing anxiety, increasing understanding of the need for the change, increasing employee confidence using the new computer system, changing employee perceptions of the new system, and helping employees view the change as an organizational improvement. The results indicated that the training program marginally reduced anxiety, but did not significantly increase user confidence or understanding of the need for the change. While participants viewed the change as an organizational improvement, this view was only superficial. When means were examined by occupation, age group and gender, pre-training results indicated that the medical staff and older participants exhibited the most anxiety, understood the reason for the change the least and had the lowest confidence in their ability to use the practice management system. These same participants appeared to benefit the most from the training program. They reported reduced anxiety and increased confidence using the innovation. Post-training, younger participants and those who identified their occupation as “other” indicated increased anxiety levels and slight reductions in their confidence using the

practice management system. The medical staff and older participants appeared to benefit the most from the training program.

CHAPTER 1

Introduction

Research in organizational communication has demonstrated that change efforts are difficult and disruptive. Studies have shown that for a change effort to be successful, communication is necessary, and that communication must be strategic and allow for both one-way and two-way communication. It has been shown that including both forms of communication gives employees the means through which to gather the necessary information to reduce the uncertainty that accompanies change (Kramer, 2004). This is because with change comes an upheaval of routine. "Organizational actors overwhelmingly favor familiar routines derived from past experience … to vague, uncertain visions of the future" (Ford, 2001, 636). When left unchecked this uncertainty builds into anxiety, which results in resistance (Kramer, 2004).

Communication studies have shown that in times of change, anxieties arise, but many of these research studies focus on change efforts that involve company downsizing. These change efforts are expected to generate anxiety because they disrupt more than everyday work routines; they also result in a disruption of employee livelihood. In these instances, a lack of proper communication between an organization and its employees regarding the change effort resulted in a drop in employee morale, yet another obstacle to overcome during an already strenuous time.

Other studies have shown that nearly all change efforts are met with resistance, some less so than others, depending on the severity of the change and its implications for

affected employees. For example, a change in organizational procedures is expected to meet less resistance and generate less anxiety than a change that calls for downsizing. This is because the former implies a need to learn something new and adjust a work routine, while the latter threatens other aspects of the employee's life.

"Human beings do not resist change automatically; however many people do resist being changed [or] having changes imposed on them" (Lorenzi & Riley, 2000, 117).

> Organizational change normally involves some threat, real or perceived, of personal loss for those involved. This thread may vary from job security to simply the disruption of an established routine. Furthermore, there may be trade offs between the long and short run. As an individual, I may clearly perceive that a particular proposed change, in the long run, is in my own best interests, and I may be very interested in seeing in happen, yet I may have short-run concerns that lead me to oppose particular aspects of the change or even the entire change project (Lorenzi & Riley, 2000, 117).

Diffusion of innovations theory of mass communications postulates that change efforts possess characteristics that make them more likely to be accepted, and that communication is essential to facilitate the understanding and realization of those characteristics for an innovation to go from an abstract concept to an accepted and adopted solution (Rogers, 1995).

This research will study the effectiveness of a communication effort at a Florida medical facility for the acceptance and adoption of an innovation. It uses a survey approach to measure the dissonance and disruption of a new technology and whether its adoption is facilitated through the use of communication. It seeks to find a link among resistance, anxiety, and understanding and will use organizational change theory, uncertainty reduction theory, and aspects of diffusion of innovations theory to analyze the results.

The medical facility is a “multidisciplinary group of physicians, surgeons, and health care providers” (www.floridamedicalclinic.com) that brings together primary care physicians and multi-specialty physicians in one location to provide patients with a complete health care experience.

In the Fall of 2006, the medical facility introduced a new technology into the everyday activities of the hospital that would affect both doctors and employees. It is the “biggest change for most of [their] employees’ day to day activities that [the medical facility] has ever had” (Joe Delatorre, Interview 03/30/06). The change involves transferring the entire medical records system to a server thus becoming a paperless facility. The innovation was launched October 24 and within the span of six months it was expected that all departments would have changed over. The change would have many benefits for the hospital, such as facilitating the exchange of patient records between doctors. By going paperless, the medical facility would require employees, especially doctors, to change the way they are accustomed to doing their jobs significantly. Doctors would no longer have their paper charts with their patient’s medical history. Instead, these records would be kept on a server from which doctors could share the information and avoid performing duplicate procedures such as blood work or X-rays. The change included adding computers to the exam rooms to allow for access to patient charts while doctors see with their patients. This new technology was expected to save time, money, make the overall health care experience easier for patients as well as facilitate the everyday activities of the hospital staff.

Directors at the medical facility understood that this change was an enormous undertaking and informed employees that the change would taking place. The

organization believed that the individuals who would pose the biggest challenge in this change would be medical staff, particularly those who did not regularly use the computer system was in place prior to the change effort. Other hospital employees were already accustomed to using a system very similar to the one being implemented on a daily basis and with the change over would only need to adjust to minor changes, such as the order in which the system requests information.

The medical staff, on the other hand, did not use the original computer system nearly as often, with some of the doctors not using it at all. For these individuals the transformation was a severe change and the medical facility expected that without proper training the change would meet a lot of resistance.

As a result, the organization conducted training programs for the medical staff. Doctors would be divided into beginner and advanced user groups. Advanced users would have some working knowledge of the current computer system, from already having many of their patient files on the current server and were able to navigate through it with ease (J. Delatorre, 03/30/06). The rest of the physicians fell into the beginner category. The advanced users were trained and expected to use the new system by the October 24 launch date. Physicians categorized as beginners were trained with their departments for the later launch dates. The first group of beginner physicians began their training in November and were expected to be ready to change over to the new system by December 11. Because physicians are so busy, they posed a special challenge. They had to learn the new system, but do so while still handling their regular patient load. To accommodate this, there were four, four-hour training session offered on Saturdays. During the span of these four hours, the physicians would be taught how to use the new

system, and would be allowed to return to any other training session if they felt they need extra help in any particular section.

The goal of the program was to get doctors to transition from a traditional medical documentation system to an electronic medical records system (J. Delatorre, interview 03/30/06). In doing so, the training would "get the advanced users to fully understand and be comfortable with the new software, and get the basic users [to] an intermediate level of familiarity with the program" (J. Delatorre, Interview 03/30/06). Ideally, doctors would become acclimated to the program and feel comfortable using it on a daily basis, understand the benefits that would follow its implementation, and demonstrate less resistance to using the new technology.

The medical facility understood that users at the beginner level would likely not reach an advanced user stage after the training program; however, the intention was to make them feel comfortable using the new system, so they would be more inclined to accept it and continue making strides in learning the program with daily use.

The thought behind this training program resembles many of the deductions from organizational communications theories and mass communications theories in that the medical facility expects that the communication and training will help in reducing resistance to change while increasing understanding and, in turn, result in the acceptance and adoption of the new technology. They plan to accomplish this by showing the medical staff how to use the innovation.

This research study examined the effectiveness of the training program in familiarizing, explaining, and adopting the new computer system among the medical staff

at the Florida medical facility within the context of organizational change and uncertainty reduction theories.

Not unexpectedly, then, this research set out to determine the effectiveness of the training program in increasing user knowledge of the new computer system and understanding of its benefit, reducing user resistance and feelings of uncertainty towards the new system and increasing acceptance and adoption of the innovation.

CHAPTER 2

Literature Review

In this day and age organizational change is inevitable. Businesses today are fast-paced and globally minded. With the onset of globalization, advances in technology and amount of available information, change is not an exception but a rule. Organizations must adapt to keep up with societal trends and market demands. "As organizations attempt to cope with a progressively more turbulent economic, technological, and social environment, they rely increasingly on their employees to adapt to change" (Stanley, D.J., Meyer, J.P. & Topolnystsky, L., 2005, p. 429). Considering change is such a large and necessary part of any organization; organizations must find ways to implement necessary changes in the most efficient way possible.

A great deal of research has gone into the effective implementation of organizational change. This research has indicated that implementing organizational change is no easy feat, and it often encounters significant opposition. Change brings with it an uprooting of routine and comfortable tasks, which results in discomfort for organizational members.

> The typical employee spends at least eight hours a day doing, in general, fairly routine tasks… There's a tangible agreement that if the employee does X, and does it well and on time, the employee will receive Y in compensation…. There is also a psychological contract between employee and company: As long as the employee fits into work and social patters, he or she "belongs" (Managing Change and Transition, 2003, p. 85).

Change represents a redrafting of the social and psychological agreement.

> When major change must be implemented, there is a need for the organization to acquire new attributes that often call for new norms of behavior. Members' previous identifications, which involve cognitive,

> behavioral and affective components and which were once functional, become a hindrance to the implementation of change …. Major change implies the loss of a system of relationships with coworkers, customers or other stakeholders, and a particular conception of one's work, status and role within an organization (Chreim, 2002, p. 1123).

During times of organizational change these agreements are more difficult to meet. Tasks change, and it is more difficult to complete work well and on time. "Change always requires the effort to learn the new, which is a loss in terms of time and energy that could have been used elsewhere" (Lorenzi & Riley, 2000, p. 120). This results in social changes that leave organizational members feeling out of place. Individuals seek out this identification because "it provides the possibility of inclusion in social groups …. Member identification satisfies a number of individual needs including needs for safety, affiliation, self-enhancement and meaning in one's life" (Cherim, 2002, p. 1120).

Changes can cause feelings of anxiety and loss, and are the reasons attributed to the resistance organizations face during periods of change (Managing Change and Transition, 2003).

Feelings of anxiety and loss are a result of uncertainty. "Giving up familiar attitudes, behaviors and perspectives that emanate form one's identifications opens the possibility for the uncertain and creates fear of the unknown, leading people to hold on to past identifications" (Chreim, 2002, p.1123). Organizations must find effective ways to reduce uncertainty, anxiety, and feelings of loss in order to reduce resistance, and as a result, effectively implement a change effort. It is necessary to provide meaning and background to change, so that organizational members are once again able to identify with the organization. Communication provides the opportunity to furnish meaning

(Cherim, 2002). Research has indicated that communication is necessary in any effective change effort (Managing Change and Transition, 2003).

> Communication is an effective tool for motivating employees, for overcoming resistance to an initiative, for preparing people for the pluses and minuses of change, and for giving employees a personal stake in the process. Effective communication can set the tone for a change program and is critical to implementation from the very start" (Managing Change and Transition, 2003, p. 60).

Unfortunately, this seemingly simple solution is "often used poorly or thoughtlessly" (D'Aprix, 1996, p. 3). It is necessary to have a powerful rationale to help reduce or fight the cynicism that results from uncertainty and confusion (D'Aprix, 1996). If communication is not used properly, it can worsen the situation. For example, research indicates that "when personal experiences contradict persuasive efforts by [an] organization, the latter's discourse is ignored and members will rely on their past experiences to guide their interpretations" (Chreim, 2002, p. 1133).

To be effective, communication should be strategic. Strategic communication is "a process by which…an organization deliberately manages its communication proactively…" (D'Aprix, 1996, p.5). Strategic communication requires planning and forward thinking. This is not to say that all communication efforts must be planned and scripted, but for an organization to be aptly prepared, its members and communicators must have a clear understanding of what to expect.

Communication and Uncertainty Reduction

As discussed earlier, uncertainty is the primary cause associated with change resistance. "Because organizational change by its very nature is not linear, the most frequent psychological state resulting form organizational change is uncertainty (

Jimmieson, N.L., Terry, D.J & Callahan, V.J., 2004, p. 11). Uncertainty reduction theory, a formal communication theory, "attempts to explain human communication behaviors in uncertain situations" (Kramer, 2004, p.4). Uncertainty is a fundamental experience. On an average day most adults spend their time in groups and organizational settings more than in any other activity. Understanding how they manage uncertainty is of grave importance.

Jimmieson et al (2004) talk about the different kinds of uncertainty associated with organizational change. Those include role conflict, role ambiguity, and role overload. Individuals experience role conflict when role expectations after a change are in direct opposition to past expectations. Likewise, role ambiguity happens when old expectations are not replaced with new, clear-cut expectations. Additionally, "employees may experience role overload when too many tasks are assigned in a given time period or when new job duties go beyond employees' current knowledge skills, and abilities" (p. 11).

To ensure that change programs minimize uncertainty, information exchange is crucial. "When profound organizational change is imminent, employees go through a process of sense-making, in which they need information to help them establish a sense of prediction and understanding of the situation" (Jimmieson et. al., p. 12). Generally, "when individuals feel that they are receiving insufficient information, they experience uncertainty and as a result dissatisfaction. Conversely, when they feel they are receiving sufficient information, they experience certainty and as a result will experience satisfaction and confidence in their organizational roles" (Kramer, 2004, p. 42). This is of concern to organizations because with dissatisfaction comes various problems, namely,

low productivity and employee turnover. Therefore, during times of change it is vital to communicate with employees every step of the way. Otherwise, employees will seek to subdue their fears by searching for information elsewhere. This is a particularly dangerous alternative because the information they will rely on will likely be based on speculation and half truths.

If employees can not receive information from formal sources they will turn to informal sources, such as the grapevine or rumor mill. Unfortunately, these informal sources can carry with them incomplete information or incorrect information that may increase anxiety (Kramer, 2003).

> Results from research examining how individuals manage uncertainty as a result of organizational change are fairly consistent… Due to a lack of adequate information surrounding organizational changes, organizational members experience uncertainty. The uncertainty frequently leads to dissatisfaction and intentions to leave. Additional communication with organizational supervisors or other members results in uncertainty reduction and more positive feelings toward the organization and intentions to remain in the organization (Kramer, 2004, p. 55).

One can conclude, then, that uncertainty reduction theory demonstrates the need for internal communication in an organization, especially during times of change.

Communication leads to understanding, understanding reduces uncertainty, and as a result reduces resistance. But how does this sequence of events take place? What makes communication effective? What kind of communication is necessary to reduce uncertainty, reduce resistance, and ensure successful implementation of change programs?

The diffusion of innovations theory of mass communications takes a look at how innovations are accepted by groups and individuals and the strategic communication necessary to achieve this acceptance.

Diffusion of Innovations: Theories of Mass Communications

Diffusion of innovations theory of mass communication provides a theoretical framework for the adoption of new ideas by individuals or members of a social system. It evolved from the two-step flow model (Severin & Tankard, 2001). According to diffusion of innovations, an innovation is "an idea, practice or object that is perceived new by an individual or other unit of adoption" (Rogers, 1995, p. 11). Diffusion of innovations, then, is "a social process in which subjectively perceived information about a new idea is communicated. The meaning of an innovation is thus gradually worked out through a process of social construction" (Severin & Tankard, p. 208).

It is important to note that this theory takes into account the uncertainty that innovations and technologies bring with them. As mentioned, uncertainty is the primary motivator for resistance to change. Diffusion of innovations postulates that "an innovation generates a kind of uncertainty in that it provides an alternative to present methods or ideas…" (p. 208) An innovation's rate of adoption is affected by the degree to which adopters view the innovation as having relative advantage, trialability, observability, and reduced complexity.

Rate of Adoptionon

Innovations possess characteristics that affect the rate at which they are accepted and adopted. These characteristics are based on the "perceptions of the innovation, characteristics of the people who adopt the innovation, or fail to do so; and contextual factors, especially involving communication, incentives, leadership, and management" (Berwick, 2003, p. 1970).

Both Rogers (1995) and Berwick (2003) postulate that between 49 and 87 percent of variance in the rate of adoption can be attributed to the perceptions individuals have regarding an innovation. Rogers referred to these as: relative advantage, compatibility, complexity, trialability, and observability.

Relative advantage refers to the "degree to which an innovation is perceived as better than the idea it supersedes" (Rogers, 1995, p. 15). Relative advantage can be measured according to various terms. It is, essentially, the perceived benefit of the change. "Individuals are more likely to adopt an innovation if they think it will help them" (Berwick, 2003, p. 1971). It can have economic advantage, social prestige, convenience, and satisfaction, among others (Rogers, 1995). The more advantage is perceived, the more useful the innovation is considered.

> This idea is a more complicated idea than it appears … because for most people who accept or reject an innovation, benefit is a relative matter – a matter of the balance between risks and gains and of risk aversion in comparing the known status quo with the unknown future if the innovation is adopted. The relative calculation of value involves risk and benefit. The more knowledge individuals can gain about the expected consequences of an innovation … the more likely they are to adopt it (Berwick, 2003, p. 1971).

Another aspect that assists in the diffusion of an innovation is its compatibility. This refers to the "degree to which [it] is perceived as being consistent with the existing

values, past experiences and [current] needs of potential adopters" (Rogers, 1995, p. 15). In other words, a change must resonate with the perceived needs and belief systems of an individual or organization (Berwick, 2003). The more an innovation strays from the values of an individual or an organization the more challenging its adoption. "The adoption of an incompatible innovation often requires the prior adoption of a new value system," this is a relatively slow process and it is important to know ahead of time if such an undertaking is in the works (Rogers, 1995, p. 16).

An innovation's complexity refers to how difficult it is to understand and use (Rogers, 1995). "Generally, simple innovations spread faster than complicated ones" (Berwick, 2003). "Some innovations are readily understood by members of a social system," these will be adopted more easily than those that are more complicated (Rogers, 1995, p. 16). Familiarity and understanding reduce uncertainty. As discussed, the less uncertainty an innovation creates the less resistance it will meet. This makes understanding a key component in the adoption of an innovation.

Giving individuals the opportunity to experiment with an innovation can positively affect adoption. This experimentation is referred to as trialability. In organizations, it is sometimes wise to implement change processes on a trial basis in one department to see how successful the innovation will be. If the innovation is successful within that department, its success can be used as a reason to adopt it throughout the organization. Trialability and observability are closely connected. If the results of an innovation are visible to other individuals, and considered positive, those individuals are more likely to adopt it (Rogers, 1995).

To successfully implement any change effort, organizational leaders must understand how these characteristics apply to their specific change effort. This way, communication efforts can be specifically tailored to focus on the areas of change that will encounter the most resistance. For example, a change efforts' relative advantage may be easy to see; however it may be a complex change. Communication should be concentrated on the change efforts' complexity more than on its relative advantage.

Employing change agents to diffuse information

Communication is an essential part of the diffusion of innovations theory; it is, after all, a mass communications theory. "Diffusion is a particular type of communication in which the message content that is exchanged is concerned with a new idea. The essence of the diffusion process is the information exchange" (Rogers, p.17). Considering that organizational change efforts are forms of innovation, then communication is also essential in successfully implementing a change program.

As mentioned earlier, the diffusion of innovations theory evolved from the two-step flow theory of mass communications. The two-step flow model uses opinion leaders as communication agents because of the influence they have on message receivers. According to the two-step flow theory, "influences stemming from the mass media first reach 'opinion leaders', who, in turn, pass on what they read and hear to their every-day associates for whom they are influential" (Katz, 1957, p. 61). In the two-step flow theory, communication usually takes place between homophilous individuals (Severin & Tankard, 2001). "Homophily is the degree to which two or more individuals who interact are similar in certain attributes" (Rogers, 1995, p. 19).

It should come as no surprise that diffusion of innovations also takes into account the influence that change agents have in the adoption of a new idea. However, unlike in two-step flow, “one of the most distinctive problems in the diffusion of innovations is that the participants are usually quite heterophilous” (Rogers, p.19). Generally, change agents or “early adopters” (Berwick, 2003, p. 1972) are more technically savvy than the individuals with whom they are communicating. In the case of organizational change, the communications specialist is usually more informed about what is taking place with the change program than the employees he or she is communicating with. Also, it is common in many organizations for decision making to come from above and filter down through the organization. As a result, the individuals affected and adopting the change are inherently different from those imposing or communicating the change. “This difference frequently leads to ineffective communication as the participants do not talk the same language” (Rogers, p.19). To overcome the heterophily, change agents often employ the use of aides “recruited from the local population” for a more successful communication process (Severin & Tankard, 2001, p.211). These aides, often referred to as change agents, are typically, well connected socially, and, watched among the “early majority” (Berwick, 2003, p. 1972). The early majority, the first wave of individuals to which an innovation is diffused, “learn mainly from people they know well, and they rely on personal familiarity, more than on science or theory, before they decide to test a change” (p. 1972).

David J. Stanley, John P..Meyer and Laryssa Topolynytsky (2005) speak of the benefits of employing change agents in their study of employee cynicism and change resistance. Their findings indicated that while communication is important in overcoming

change resistance, management faces an additional challenge when that resistance is based on employee cynicism. Employee cynicism is distinguished from other forms of resistance because it is "based on the disbelief in motives [which] cannot be easily addressed with facts and figures" (p. 457). To address the distrust in organizational motives, the researchers suggest management "identify trusted individuals within an organization, who once convinced of the sincerity of managements' motives, can help to gain the support of employees at large" (p. 458).

Nancy Lorenzi and Robert Riley (2000), in their studies of change management in health care organizations, found that past medical advances were primarily stand-alone systems, affecting limited and specific areas. However, as time has passed, more and more advances were affecting more heterogeneous groups and areas. As a result, major challenges to innovation success are behavioral. "Effective leadership can sharply reduce the behavioral resistance to change" (p. 116). "Creating change starts with creating a vision for change and then empowering individuals to act as change agents to attain that vision" (p. 118).

The communication process between early adopters and the early majority is referred to by Ikujiro Nonaka, Georg von Krogh and Sven Voelpel (2006) as organizational knowledge creation. According to Nonaka et al., "organizational knowledge creation is the process of making available and amplifying knowledge created by individuals … and connecting it with an organization's knowledge system" (p. 1179). In their research they address the concept of knowledge activists. Knowledge creation theory states that knowledge is "created locally, where tasks are attended to, problems defined and resolved."

Therefore a knowledge activist must be able to share that knowledge beyond the context and into the remaining areas of the organization. They do so by coordinating knowledge creation, initiatives, and determining opportunities for knowledge sharing. A knowledge activist will "bring different knowledge sets and introduce 'creative abrasion' that leads to conflicting ideas but also new possibilities to create knowledge" (p. 1187).

Many studies tout the benefits of effective communicators. To ensure an innovation is heard and accepted, the communication method plays a key role. Change agents control the dissemination of information in such a way as to "provide an overall direction for the knowledge creation" (Inonaka, et al., 2006, p. 1188). As a result, it is imperative that organizational leaders take heed to identify the correct change agents for individual change efforts. Studies have found that "opinion leaders [are] not concentrated in the upper brackets…but [are] located in almost equal proportions in every social group and stratum" (Katz, 1957, p. 72). In his analysis of research done on opinion leaders, Katz (1957) found that there are certain traits that make a person more likely to be an opinion leader: (1) who the person is (possessing certain value sets), (2) what the person knows, and (3) who the person knows. "Influence is often successfully transmitted because the influencee wants to be as much like the influential as possible" (p. 73); however, what an individual knows and how accessible he or she is will also play an important role.

In order for change agents to be successful, they must be selected carefully. Electing opinion leaders based solely on their position in an organization is a guarantee for success.

> Opinion leaders and the people whom they influence are very much alike and typically belong to the same primary groups of family, friends and

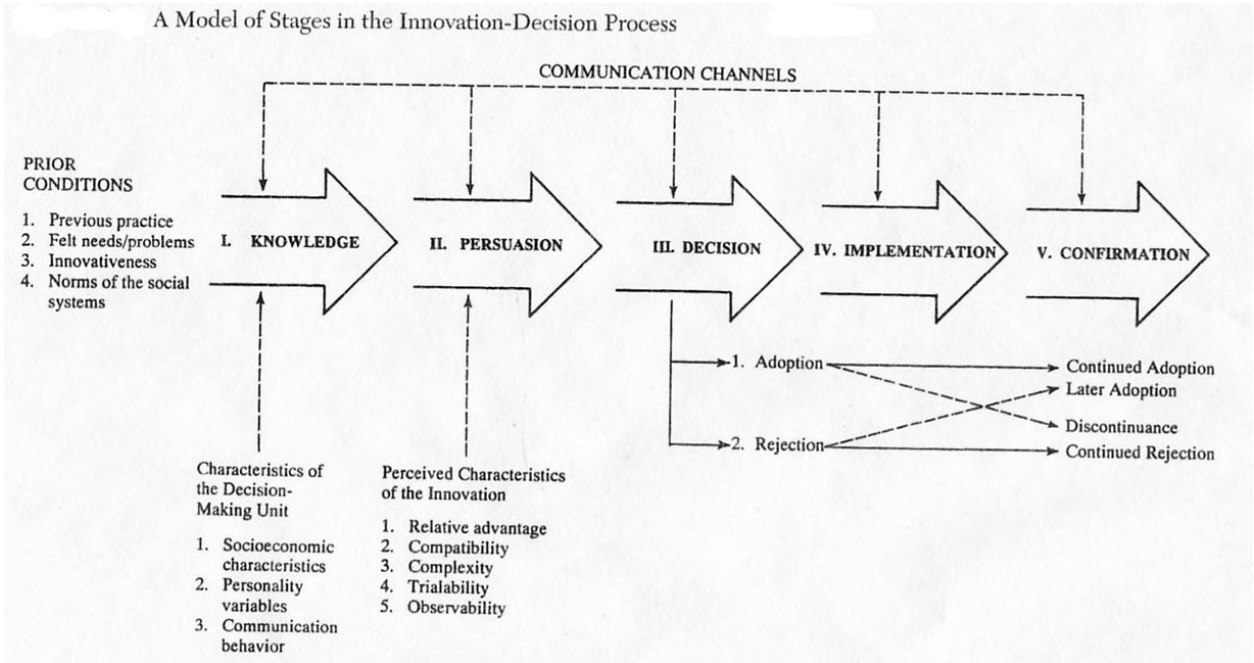
> coworkers. While the opinion leader may be more interested in the particular sphere in which he is influential, it is highly unlikely that persons influenced will be very far behind the leader in their level of interest. Influentials and influencees may exchange roles in different spheres of influence (Katz, 1957, p. 77).

There must be a level of trust and respect among the communicator and those with whom he or she is communicating for there to be any influence.

The Innovation-Decision Process

A communication process must undergo a series of steps in order to achieve a successful change effort. The decision-innovation process "is the process through which an individual passes…to [reach] implementation and use of [a] new idea" (Rogers, 1995, p. 20). Knowing the stage of the innovation decision process is essential to the communication process. This knowledge allows for proper preparation of communication messages. The process consists of five stages as illustrated in Figure 1.

Figure 1.



The knowledge stage of the process is when a group or an individual learns about the innovation. During this stage individuals mainly seek "information that reduces uncertainty" (Rogers, 1995, p.21). Therefore, the knowledge stage is an "information-seeking and information-processing activity" (p. 165). Here individuals seek to learn what the innovation is and in which ways it will affect them. Diffusion of innovations theory states that during this stage there are three types of knowledge gathering: awareness-knowledge, how-to knowledge, and principles-knowledge.

During awareness-knowledge an individual knows that the innovation exists; how-to knowledge is the information necessary for using the innovation; and principles-knowledge is "information dealing with the function principles underlying how the innovation works" (Rogers, 1995, 166).

In the knowledge stage, information exchanged is generally one-way. This is when communicators educate individuals about an innovation. However, the communicators must soon prepare for a two-way communication process. Once individuals are aware of the innovation, it is only a matter of time before they will have questions. Furthermore, additional research has demonstrated that two-way communication practices are more favorable than one-way communication.

The persuasion stage of the decision process occurs when individuals form attitudes towards the innovation. It is during this stage that an individual "becomes more psychologically involved with the innovation" (Rogers, 1995, p. 168). At this time, providing "evaluation information," is most likely to reduce the uncertainty associated with the "innovation's expected consequences" (p. 21). Organizations must take heed to provide individuals with avenues to gather this information and take the initiative to

provide channels for two-way communication. It is during this time that individuals are more likely to seek information from their peers. If there is no information available to reduce uncertainty, then individuals will rely on information they receive through the grapevine and the speculations of their peers. It is wise for organizations to keep up-to-date on the information disseminated through the grapevine as it is an information-rich indication of individuals' attitudes towards change (Rogers, 1995).

After the persuasion stage comes the decision stage. During this stage individuals engage in "activities that lead to a choice to adopt or reject the innovation" (Rogers, 1995, p.21). One of the best ways to cope with the "inherent uncertainty about an innovation's consequences is to try out the new idea on a partial basis" (Rogers, p. 171). Testing out a change program in one department and then spreading it to others can aid its adoption. A trial by others "provides a kind of vicarious trial for an individual." (Rogers, p. 171). It also provides an organization with valuable information. Trial runs will make difficulties with implementation visible. This can help prepare communicators for roadblocks in widespread implementation and result in a smoother transition for the change effort. Once decision makers come to an understanding on the best approach, the implementation and confirmation stages will begin.

During the implementation phase individuals put the innovation to use and during the confirmation stage they seek reinforcement on the decision to accept the innovation (Rogers, 1995). If there is no opportunity for a trial run, then adoption problems become visible during the implementation stage. Change implementers must then evaluate and revise message strategies to keep the process moving forward. It is important to note, that

communication is essential throughout the adoption on any innovation, from beginning to end.

Innovations in Organizations

Diffusion of innovations research initially focused on how individuals adopt or reject an innovation. Later studies stressed the "implementation stages involved in putting an innovation to use in an organization" (Roger, 1995, p. 371). The implementation decision process is much more complex within an organization. It "typically involves a number of individuals, each of whom plays a different role in the innovation-decision process. Further, implementation amounts to mutual adaptation in which the innovation and the organization change in important ways" (p. 372).

For innovations in an organization there appear to be three kinds of innovation-decisions.

1. Optional innovation-decisions – choices to adopt or reject an innovation that are made by an individual independent of the decisions by other members of a system.
2. Collective innovation-decisions – choices to adopt or reject an innovation that are made by consensus among the members of a system.
3. Authority innovation-decisions – choices to adopt or reject an innovation that are made by a relatively few individuals in a system who posses power, status, or technical expertise (Rogers, 1995, p. 372).

In addition, innovativeness in organizations is related to individual leader characteristics, internal organizational structure and external organizational characteristics.

Research has indicated that centralization in organizations is negatively associated with innovativeness. This means the more power is "concentrated in an organization the less innovative the organization tends to be" (Rogers, 1995, p. 380). This is because the leaders are making the change decisions and filtering them down within the organization. The problem with this is leaders are often poorly equipped to identify problems because they are not in the midst of everyday organizational activities, or in the

trenches. Their decisions are met with resistance because employees feel that the individuals making those decisions do not understand what employees' everyday jobs are really about (Rogers, 1995).

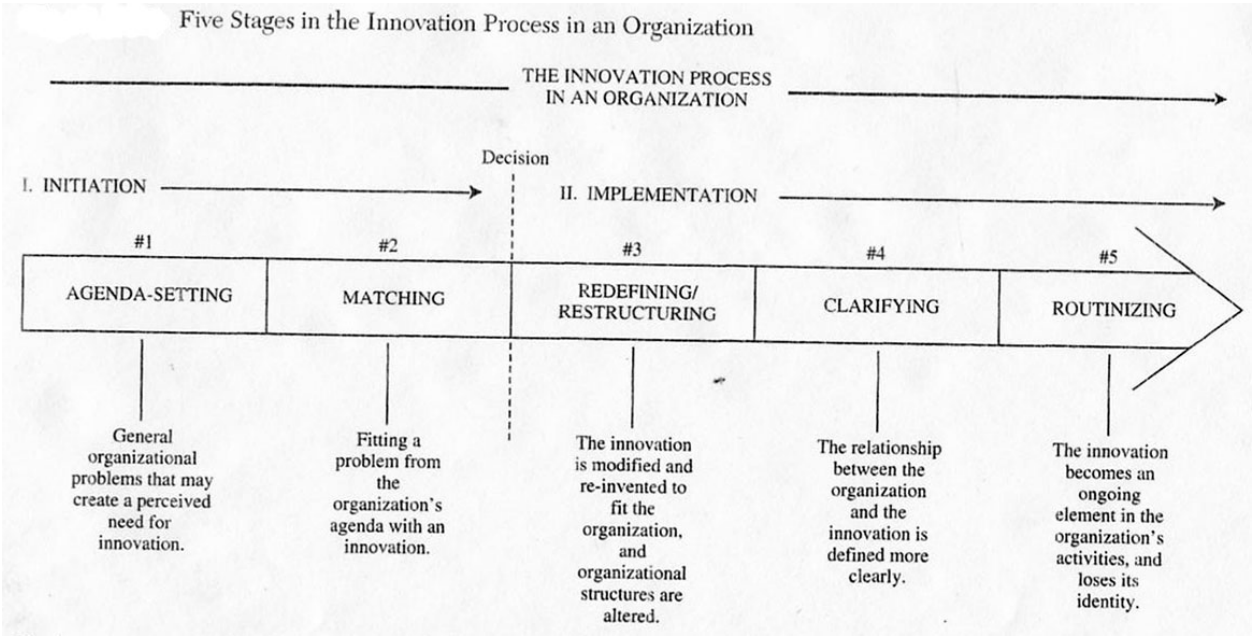
Another organizational characteristic that can affect the adoption of organizational change is its degree of formalization. Rogers describes this as the 'degree to which an organization emphasizes following rules and procedures in the role performance of its members" (p. 380). This can hinder the consideration of innovations, but may encourage their implementation. Strictly following rules can affect creativity because people are often not encouraged to think outside the box. However, if an organization decides to implement any kind of change effort, employees that are used to adhering to rules may simply follow suit with organizational decisions (Rogers, 1995).

Organizational interconnectedness can also affect the adoption of an innovation. Interconnectedness in an organization is the degree to which "units in a social system are linked by interpersonal networks" (Rogers, 1995, p. 381). This can be very useful in spreading innovations throughout the organization, but it can also make things very difficult, it is all contingent upon employee reactions to the change effort.

When it comes to organizational research and innovations, studies have primarily focused on the implementation rather than the adoption or rejection of innovations. This is because organizations are often seen as "constraints or resistances to innovations" (Rogers, 1995, 391). On the other hand, the difficulties faced by an organization in implementing a change effort can also be attributed to an ill fit between the innovation and the organization (Rogers, 1995).

The innovation-decision process for organizations consists of similar steps as that for individuals. However, it is divided into two parts, as illustrated in Figure 2. The first phase is the initiation subprocess and the second phase is the implementation subprocess (Rogers, 1995).

Figure 2



Initiation Phase

The initiation phase occurs when all the information gathering and planning for the adoption of an innovation takes place and ends once the organization make a decision to adopt. The initiation stage consists of agenda-setting and matching processes. During agenda-setting an "organizational problem that may create a perceived need for an innovation is defined" (Rogers, 1995, p. 391). It is an ongoing process within organizations. To continue operating efficiently, an organization must understand the steps it must take to improve. During agenda-setting problems are identified and prioritized; often a time consuming task (Rogers, 1995).

Once problems are identified and prioritized the matching stage begins. This is when organizational problems are fit with appropriate innovations or change efforts. It is when "organizational members attempt to determine the feasibility of the innovation in solving the organization's problem…" and it includes "thinking about the anticipated problems that the innovation might encounter if it were implemented" (Rogers, 1995, p. 394)

Implementation Phase

Once an organization decides to adopt an innovation the implementation subprocess begins. It consists of three stages: redefining/restructuring, clarifying and routinizing (Rogers, 1995).

During the first stage, an innovation is worked to fit the organization's needs and structure more closely. At the same time, organizational structure is modified to fit the innovation. To a certain degree, both the innovation and the organization must change. "This mutual adaptation must occur because the innovation almost never fits perfectly in the organization in which it is to become embedded" (Rogers, 1995, p. 395).

Next comes the clarifying stage. This occurs when an innovation is put to use in an organization so that the innovation's meaning becomes clearer to its members. It consists of a "social construction." "When a new idea is first implemented in an organization it has little meaning to the organization's members" (Rogers, 1995, p. 399). This results in uncertainty. The clarifying stage is when questions about the innovation are answered so that organizational members can gain a common understanding. Common understanding occurs over time through a social process of human interaction.

Finally, comes the routinizing stage. It is when the innovation has become a regular part of the everyday activities of organizational members. At this point the innovation processes is complete.

Change Communication: Two-Way vs. One-Way Communication

So far, the theories discussed have illustrated the need for effective and appropriate communication to implement successful change programs. Additionally, several research studies have demonstrated the importance of continued communication during change efforts.

In one such study, Goodman and Truss, 2004, analyzed two organizations' communication strategies when implementing their change programs and the effects the strategies had on the employees. In particular, the study focused on the timing of the change messages, the use of appropriate media, and their effect on employee uncertainty. For each organization the researchers used the following approaches:

> A review of company documentation; unstructured interviews or electronic communication with a small number of staff to ascertain the principal issues in the change program and to provide essential background information; three semi-structured interviews in each organization with senior managers to explore the design and purpose of the communication strategy; and a questionnaire of a random selection of two-thirds of employees in each organization, excluding senior management, to uncover reactions to the change and communication strategies (p. 221).

The semi-structured interviews yielded important information. One of the organizations primarily used one-way communication, while the other company used a combination of one- and two-way communication. These communication efforts consisted of face-to-face communication, and a reward system to celebrate individuals' successes during the change program. Results from employee surveys demonstrated that

employees in both organizations preferred face-to-face, two-way communication about change programs and that they would like their opinions to be included in the decision making process (Goodman & Truss, 2004).

Overall, the research results were quite interesting. The study found that both organizations were unsuccessful in the implementation of their change processes even though one of the organizations used two-way communication. Findings indicated that the organization still neglected some key elements in its communication strategy. Their research indicated that management was "out of touch with employee concerns…and they did not understand how the changes would affect them" (Goodman &Truss, 2004, p.225), which indicates the importance of keeping employees in mind when developing any communication strategy. According to the findings, communication should be two-way, and employees should be given the opportunity to provide feedback. Also, as a part of any communication strategy, organizational leaders should continuously evaluate the results to ensure that strategies continue to be effective by revising approaches that are not providing results.

Employee Involvement in Change Efforts

These research findings go hand in hand with the findings of Prashant Bordia, Elizabeth Hobman, Elizabeth Jones, Cindy Gallois and Victor Callahan, 2004. Bordia et al., studied uncertainty in organizations during times of change. They hypothesized that "management communication and participation in decision-making would reduce uncertainty and increase feelings of control" (Bordia et al., 2004, p.507). Uncertainty, defined as "an individual's inability to predict something accurately" is the source of stress that often causes resistance to change in organizations (p. 508).The study focused

on individuals' level of uncertainty during change and the ways in which this uncertainty can be reduced.

As cited earlier, effective management communication is one way to reduce uncertainty. However, Bordia's et al., study (2004) went a step further. This study also proposed that participation in decision-making would positively aid the management communication process in effectively implementing organizational change. Literature on this topic typically indicates that participation in decision making has a positive impact. "It has been shown that when employees are involved in the implementation of new programs they are more likely to perceive the program as being beneficial. Employee involvement in tactical decisions has been found to lead to employee acceptance or openness toward change" (Bordia et al., 2004, p.515).

The findings of the study support the findings of Goodman and Truss. "Management communication is effective in reducing uncertainty about strategic aspects of change," but to "reduce feeling of uncertainty…participative strategies are required" (Bordia et al., 526). The study also found that "by being involved in and contributing to decision-making, employees experience less uncertainty about issues affecting them and feel more in control of the change outcomes" (p. 526).

Information Access and Its Effects

Tourish, Paulsen, Hobman and Bordia (2004), also studied the effects of organizational change on levels of trust and uncertainty in employees. Their findings were similar to those discussed previously, with one notable exception. This study provided a unique opportunity to observe and study those affected negatively by the change efforts as well as those affected positively. This research focused on a downsizing change effort in a hospital. Subjects affected negatively were those employees who were let go, while those affected positively were those who did not lose their jobs. This study demonstrated that individuals undergoing change efforts are all affected similarly regardless of which end of the spectrum they fall into. Tourish et al. (2004) found that the communication efforts espoused by the organization were largely to blame for the anxiety levels held by both groups of employees. By holding back information, senior managers left middle and lower level managers with little or no information to pass on to employee concerns. As a result, middle and lower level managers could not elaborate or appease employees. They received the same amount of information as employees did and were at a loss when it came to answering questions. Therefore, employees were left to speculate and rely on rumors to gather information.

The results of this study provide further evidence of the importance of effective communication efforts. Organizational change often rouses feeling of fear that lead to resistance. Effective communication can lower these constraints and the tendency to rely on rumors as sources of information. Most importantly, it emphasizes the effects of change. Both those who are affected by changes and those who are not will suffer the same amount of distrust and uncertainty when provided with insufficient information.

Another important finding to take notice of is that research participants indicated that information alone would not have been enough to lower their uncertainty levels, further emphasizing the importance of two-way communication. Employees felt it was necessary to be able to ask questions and have the opportunity to engage in discussions regarding what is to be expected during a change effort (Tourish et al., 2004).

Internal Communication and Employee Motivation:

The necessity of communication is obvious from the findings of the previous studies. However, studies have only discussed the need for communication strategies, not the reason internal communication is successful in aiding change efforts.

> "As the trend toward organizational change continues, strong internal communication programs will increase in importance. Bridging the gap between employees and managers has become a critical goal for organizations today. Massive organizational changes…have turned traditional employee confidence and loyalty to uncertainty, antagonism and fear about the future" (Heidelberg, 1999, p.5)

Heidelberg (1999) proposes that internal communication is not only necessary during times of change, but it has a greater purpose than that of persuasion. Internal communication serves as a tool for understanding and fostering employee motivation. Due to the psychological side effects of change, it has been noted that employees undergo an emotional process that in turn leads to change resistance in order to fight the anxieties that change brings. When internal communication is seen as more than just a one-way attempt at persuasion it opens up an avenue for employee motivation. In order to maintain employees motivated they must have a sense of job satisfaction.

Therefore, internal communication can serve for more than just change implementation. It can help shape and establish an organizational culture that fosters high levels of employee morale and therefore high levels of employee motivation.

Given the scope and nature of the change taking place at the medical facility and the findings from previous studies on communication and change management, it would seem obvious to assume that the organization's training program would be beneficial to the implementation of their change effort. This study sought to determine if the training program is not just beneficial, but also effective in facilitating the adoption of the new electronic medical records technology among its most discerning and resistant members. The audience for this training program posed a more difficult hurdle because doctors at the medical facility are not employees, but shareholders and board members who could ultimately decide to take their practice elsewhere. For them, it is not just a matter of adopting a change their employer is enforcing, loss of status or uncertainty in their position, but instead it is a matter of how this change will ultimately be of benefit to the everyday operations of their medical practice. If they are to change their set ways, they must understand the beneficial implications of the new software.

The medical facility's decision to implement this innovation was an authority innovation decision (a top down decision). A select group of individuals, possessing the power and expertise, chose the innovation and then filtered the decision to the rest of the members of the organization (Rogers, 1995).

As a result, this research study set out to determine the effectiveness of the training program in:

- Increasing user knowledge of the new computer program
- Increasing user understanding of the benefits of the new computer program
- Reducing user resistance and feelings of uncertainty towards the new computer program

- Increasing user acceptance and adoption of the innovation

Research Hypotheses:

H1: Communication training reduced participant anxiety about the change.

H2: Communication training increased user understanding of the need for the innovation.

H3: Communication training improved levels of confidence using the innovation.

Research Questions:

R1: How did the training communication affect participant groups (occupation, gender, age)?

R2: Did participants in the training believe the training functionally reduced anxiety and improved acceptance of the change?

R3: How did participants perceive the changes?

R4: Were the changes viewed as organizational improvements?

CHAPTER 3:

Methodology

This research employed a multiple methods approach to obtain information in this study. Both survey and qualitative data helped find trends that determined the rise or fall of anxiety and uncertainty levels (quantitative) and allow for a more detailed understanding of the 'why' behind any group changes discovered (qualitative).

Doctors were divided into beginner and advanced user groups. Advanced users had some working knowledge of the current computer system from already having many of their patient files on the current server, and were able to navigate through it with ease (J. Delatorre, 03/30/06). The rest of the physicians fell into the beginner category. The advanced users were trained and expected to use the new system by the October 24 launch date. Physicians categorized as beginners were trained with their departments for the later launch dates. The first group of beginner physicians began their training in November and were expected to be ready to change over by December 11, with subsequent groups training and going live over the span of six months. Because physicians are so busy, they posed a special challenge. They had to learn the new system, but do so while still handling their regular patient load. To accommodate this, there were nine, four-hour computer-based training sessions offered on Saturdays through the beginning of April (see Appendix D). During the span of these four hours, the physicians were taught the how-to's of the new system, and were given the opportunity to return to any other training session if they felt they need extra help in any specific section.

In doing so, the training would "get the advanced users to fully understand and be comfortable with the new software, and get the basic users [to] an intermediate level of familiarity with the program" (J. Delatorre, Interview 03/30/06). Ideally, doctors would become acclimated with the program and feel comfortable with using it on a daily basis, understand the benefits it would bring and demonstrate less resistance to using the new technology.

The medical facility understood that users at the beginner level were unlikely to reach an advanced user stage after the training program; however the intention was to make them feel comfortable using the new system, so they would be more inclined to accept it and continue making strides in learning the program with daily use.

Quantitative Methodology

Data for this study was collected using two questionnaires (in a pre- and post training setting) surveying employee groups participating in the training program. The first questionnaire (see Appendix A) was used to assess their attitudes towards the new practice management system prior to the training program, and the second (see Appendix B) to assess their attitudes regarding the practice management system after the training program to determine if there is any change. Secondary research has indicated that organizational change management is dependent on communication to reduce anxieties and feelings of uncertainty that often result in resistance to an organizational innovation.

A total of 90 members of the medical staff (physicians, physician assistants and nurse practitioners) were required to undergo training. However, because the full conversion into a paperless facility was spread over six months, not all departments were trained at the same time. Each group has approximately five to ten individuals. This research

focused on the first employee groups undergoing training that were classified as beginners. Because of the size of the group participating in the training program, all trainees were asked to participate, making the survey sample a purposive sample. Surveying several training groups would allow the researcher to gather information from a representative sample.

Survey methodology was used to gather as much information from the group as possible within a relatively short timeframe. This research study used surveys to gather information on any behavioral changes in attitude (anxiety and uncertainty levels) regarding the innovation and change effort, resulting from the training program.

Seven-step, Likert-scaled questions were employed to determine any change in attitude toward the innovation that helped facilitate its adoption and to gauge whether participants felt theoretical components of the Diffusion of Innovations Theory were present in the implementation of the innovation.

Qualitative Methodology

Qualitative data collection, in the form of open-ended questions, was added to the questionnaires (see Appendix A and B) to give the research a level of depth and detail that would otherwise be absent from the survey instrument. Quantitative data would allow the researcher to determine if there is any change in behavioral attitude toward the innovation as a result of the communication effort, but would not provide any details regarding the reasons for any change in behavior, or the reasons for the feelings of anxiety and uncertainty (if any are found). Qualitative questions would give the researcher more details regarding the whys behind the behavioral changes that may occur.

Qualitative data collection would make it possible to answer the proposed research questions. Adding the open-ended questions to the end of the survey instrument provided a way to gather detailed information from this group of individuals about how they felt about both the changes and the need for the change. As mentioned earlier, the medical staff was a busy group, and they were already setting aside time to attend the training sessions. In-depth interviews and focus groups would require more imposition on their already taxed schedules and it was determined they would not be as effective. It was decided that having a representative and captive sample of employee groups present at the training sessions was the ideal time to gather the necessary information. Keeping the qualitative portion of the research as part of the survey instrument would make the process easiest for participants, while still providing a well-rounded understanding of the concerns and attitudes participants hold toward the change program.

Although 90 individuals will undergo training, this study involved a representative group, although small. The results of this the study are treated as a case study from which others can examine the pros and cons of the approach taken by the Florida medical facility to implement an innovation. It serves as a reference to some of the obstacles organizations may face during times of change.

CHAPTER 4

Results

This section reviews the results of various statistical analyses to determine the influence of training on the use of new technology on group participants. Specifically, participants in the medical field were trained in the use of a new computer system.

As discussed in the methodology, the researcher administered a survey before and after each training session. Participant responses were analyzed to determine if there were changes in reported anxiety, confidence and understanding toward the need for the innovation. Analysis included Chi-Square, analysis of variance (ANOVA), and paired t-tests. The researcher also examined responses according to participant age group, occupation and gender.

Breakdown of Training Participants

Survey questionnaires were made up of Likert-scale questions and open-ended questions to gather as much information as possible on participant attitudes toward the new practice management system.

Thirty participants took part in the training classes in which the researcher administered the survey questionnaire. The original training schedule called for only medical staff to participate in the training. However, due to scheduling difficulties, staff members in the medical offices (e.g., office managers and medical assistants) were included in the training communication program with their respective group of doctors (doctors and their staff members would participate in the training program together).

Of the 30 participants, 60 percent (N=18) identified themselves as part of the medical staff (physicians or nurses) and 40 percent as “other” (N=12). Thirty-seven

percent were under 41 years of age and 60 percent were over 40. Forty-seven percent of participants were male (N=14) and 53 percent (N=16) were female. Only 29 respondents (97 percent) provided information on their age, while all 30 provided information on their occupation.

Survey Questions

In order to determine participant anxiety, confidence, and understanding of the need for change, respondents were asked to rate their level of agreement, on a scale of one to seven (with one meaning "strongly disagree" and seven meaning "strongly agree"), with various statements in the survey instrument. Pre- and post-training questions aligning to anxiety addressed participant comfort with the upcoming change, their view on the amount of time given to prepare and plan for the change, the practice management system's user-friendliness as well as the training program's usefulness. Those related to understanding the need for the change addressed the innovation's potential benefits, as well as asked if participants understood the reason for the change. Finally, statements aligning to confidence were related to participant's view of the practice management system's usability, their expectations of the training program (if they expect it will be difficult, then likely not confident in their ability to learn/use innovation) and whether those expectations were met.

Means for individual survey instrument questions are found in Appendix D and E, grouped according age, gender, and occupation. The means for individual questions were aggregated to create one variable for anxiety, confidence, and understanding pre- and post-training.

Quantitative Results

Table 1: Summed Means Pre- and Post-training

		Pre-training		Post-training	
		Mean	Std. Deviation	Mean	Std. Deviation
Total Group N=30	Anxiety Levels	4.95	1.247	5.30	1.100
	Confidence Using the Innovation	5.03	1.235	5.29	1.117
	Understanding Need for Change	4.83	1.623	4.69	1.595

Table 1 shows the summed means of questions related to anxiety, confidence, and understanding the need for change before and after training. Participants reported increased means for anxiety (+ 0.35) and confidence (+ 0.26), indicating that after training participants felt more comfortable and less anxious about the upcoming change and more confident about their ability to use the practice management system. However, participants reported decreased means for understanding (- 0.14) the need for the change, which indicates that the training program did not appear to increase their understanding of the innovation's relative advantage or explain why they needed to make this change.

Table 2-A: Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Anxiety Pre- & Post-training	30	.663	.000
Pair 2	Understanding Pre- & Post-training	30	.739	.000
Pair 3	Confidence Pre & Post-training	30	.685	.000

Table 2-B: Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Anxiety Pre – Anxiety Post	-.34762	.97230	.17752	-.71068	.01544	-1.958	29	.060
Pair 2	Understanding Pre – Understanding Post	.14444	1.16383	.21249	-.29014	.57903	.680	29	.502
Pair 3	Confidence Pre – Confidence Post	-.26121	.94003	.17163	-.61223	.08980	-1.522	29	.139

T-tests were run on the summed means from Table 1 to determine if the changes in mean were significant. Tables 2A-B show the results of the paired samples t-tests. The decrease in anxiety reported after training, although not significant, is approaching significance ($p=0.06$). While $p>0.05$, and not within the 95 percent confidence level, it is relatively close, and could have been affected by the small size of the sample population.

The increased mean related to confidence was not significant ($p=0.139$), as shown in Table 2-B. This suggests that while we saw a positive change in participant confidence levels, that change was not significantly different from the mean reported pre-training. The same can be said for means related to understanding the need for change ($p=0.502$).

To get a better understanding of the training program's effect on participants, the researcher also examined participant responses to questions related to anxiety, confidence, and understanding the need for the change according to participant age, occupation, and gender. Table 3 shows summed means for age groups, and Table 4 and 5 the results of ANOVA tests and crosstabs, respectively, used to determine significance.

Age Groups

Table 3: Summed Means by Age Group

		0-40 (N=11)		Over 40 (N=18)	
		Mean	Std. Deviation	Mean	Std. Deviation
Pre-training	Anxiety Levels	5.73	1.011	4.47	1.189
	Confidence Using the Innovation	5.87	.796	4.50	1.212
	Understanding Need for Change	5.60	1.262	4.33	1.701
Post-training	Anxiety Levels	5.75	.745	4.98	1.213
	Confidence Using the Innovation	5.85	.714	4.90	1.199
	Understanding Need for Change	5.62	1.245	4.19	1.585

According to Table 3, prior to undergoing training younger participants (ages 40 and under) felt less anxious (m=5.73), more confident (m=5.87), and understood the need for change (m=5.60) better than participants over 40. Participants over age 40 reported an anxiety mean of 4.47, a confidence mean of 4.50 and a mean of 4.33 for their understanding of the need for the change. While younger participants still reported higher means than older participants after undergoing training, their means remained relatively the same, with changes of only 0.02 in either direction. On the other hand, older

participants, reported lowered anxiety with a mean increase of 0.51, and increased confidence with a mean increase of 0.40. However, while younger participants appeared to remain the same in their reported understanding, older participants reported a decrease in their understanding of the need for the change by 0.14.

Table 4: One-way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Anxiety Pre	Between Groups	10.823	1	10.823	8.530	.007
	Within Groups	34.256	27	1.269		
	Total	45.078	28			
Anxiety Post	Between Groups	4.039	1	4.039	3.567	.070
	Within Groups	30.571	27	1.132		
	Total	34.609	28			
Understanding Pre	Between Groups	10.954	1	10.954	4.542	.042
	Within Groups	65.120	27	2.412		
	Total	76.074	28			
Understanding Post	Between Groups	14.080	1	14.080	6.529	.017
	Within Groups	58.221	27	2.156		
	Total	72.301	28			
Confidence Pre	Between Groups	12.866	1	12.866	11.091	.003
	Within Groups	31.322	27	1.160		
	Total	44.188	28			
Confidence Post	Between Groups	6.126	1	6.126	5.600	.025
	Within Groups	29.533	27	1.094		
	Total	35.659	28			

Table 5: Chi-Square Tests Anxiety (pre) by Age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.797[a]	19	.407
Likelihood Ratio	26.359	19	.120
Linear-by-Linear Association	6.722	1	.010
N of Valid Cases	29		

a. 40 cells (100.0%) have expected count less than 5. The minimum expected count is .38.

Table 6: Chi-Square Tests Anxiety (post) by Age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.072[a]	15	.597
Likelihood Ratio	17.362	15	.298
Linear-by-Linear Association	3.268	1	.071
N of Valid Cases	29		

a. 32 cells (100.0%) have expected count less than 5. The minimum expected count is .38.

Table 7: Chi-Square Tests Understanding (pre) by Age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.505[a]	20	.427
Likelihood Ratio	27.406	20	.124
Linear-by-Linear Association	4.032	1	.045
N of Valid Cases	29		

a. 42 cells (100.0%) have expected count less than 5. The minimum expected count is .38.

Table 8: Chi-Square Tests Understanding (post) by Age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.629[a]	18	.205
Likelihood Ratio	30.178	18	.036
Linear-by-Linear Association	5.453	1	.020
N of Valid Cases	29		

a. 38 cells (100.0%) have expected count less than 5. The minimum expected count is .38.

Table 9: Chi-Square Tests Confidence (pre) by Age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.629[a]	16	.124
Likelihood Ratio	30.178	16	.017
Linear-by-Linear Association	8.153	1	.004
N of Valid Cases	29		

a. 34 cells (100.0%) have expected count less than 5. The minimum expected count is .38.

Table 10: Chi-Square Tests Confidence (post) by Age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.231[a]	19	.442
Likelihood Ratio	25.174	19	.155
Linear-by-Linear Association	4.810	1	.028
N of Valid Cases	29		

a. 40 cells (100.0%) have expected count less than 5. The minimum expected count is .38.

One-way ANOVA test results (Table 4) indicate pre-training means for anxiety between the two age groups are significantly different (p=0.007), but the Pearson's Chi-Square test (Table 5) indicates that this difference may have occurred by chance (p=0.41). Post-training, the ANOVA test (Table 4) indicates that there is no longer a

significant difference between participant anxiety according to age group (p=0.07) and the Pearson's Chi-Square (Table 6) again indicated this change could have occurred by chance (p=0.60). Tables 7 and 8 show that means for understanding the need for the innovation were significantly different between the age groups both before (p=0.04) and after (p=0.02) training, as were means for confidence (pre-training p=0.003; post-training p=0.03). Tables 8-10 show that the relationship between age groups and understanding and confidence could have happened by chance (p>0.05).

Occupation

The following tables show the summed means for reported anxiety, confidence, and understanding the need for change according to participant occupation (Table 11) as well as the ANOVA and Pearson's Chi-Square tests to determine significance (Tables 12-18).

Table 11: Summed Means by Occupation

		Medical Staff (N=18)		Other (N=12)	
		Mean	Std. Deviation	Mean	Std. Deviation
Pre-training	Anxiety Levels	4.52	1.204	5.61	1.039
	Confidence Using the Innovation	4.50	1.179	5.82	.859
	Understanding Need for Change	4.04	1.598	6.02	.674
Post-training	Anxiety Levels	5.27	1.277	5.35	.818
	Confidence Using the Innovation	5.17	1.307	5.44	.780
	Understanding Need for Change	4.16	1.76149	5.49	.869

Table 11 shows that prior to training, the medical staff was more anxious (m=4.52), less confident (m=4.50) and had a lower understanding of the need for change

(m=4.04) than other participants. Others reported means of 5.61 for anxiety, 5.82 for confidence and 6.02 for their understanding of the need for change. After training, the medical staff reported decreased anxiety (m=5.27), increased confidence (m=5.17) and a slightly better understanding for the change (m=4.16). Others indicated slightly higher anxiety (m=5.35), lower confidence (m=5.44), and decreased understanding of the need for change (m=5.49).

Table 12: One way ANOVA by Occupation

		Sum of Squares	df	Mean Square	F	Sig.
Anxiety Pre	Between Groups	8.574	1	8.574	6.570	.016
	Within Groups	36.541	28	1.305		
	Total	45.116	29			
Anxiety Post	Between Groups	.041	1	.041	.033	.858
	Within Groups	35.075	28	1.253		
	Total	35.116	29			
Understanding Pre	Between Groups	28.006	1	28.006	16.201	.000
	Within Groups	48.401	28	1.729		
	Total	76.407	29			
Understanding Post	Between Groups	12.711	1	12.711	5.830	.023
	Within Groups	61.052	28	2.180		
	Total	73.763	29			
Confidence Pre	Between Groups	12.482	1	12.482	11.012	.003
	Within Groups	31.737	28	1.133		
	Total	44.219	29			
Confidence Post	Between Groups	.459	1	.459	.360	.553
	Within Groups	35.724	28	1.276		
	Total	36.183	29			

Table 13: Chi-Square Tests Anxiety (pre) by Occupation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.972[a]	19	.338
Likelihood Ratio	28.244	19	.079
Linear-by-Linear Association	5.511	1	.019
N of Valid Cases	30		

a. 40 cells (100.0%) have expected count less than 5. The minimum expected count is .40.

Table 14: Chi-Square Tests Anxiety (post) by Occupation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.833[a]	15	.142
Likelihood Ratio	28.105	15	.021
Linear-by-Linear Association	.034	1	.854
N of Valid Cases	30		

a. 32 cells (100.0%) have expected count less than 5. The minimum expected count is .40.

Table 15: Chi-Square Tests Understanding (pre) by Occupation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.972[a]	20	.399
Likelihood Ratio	28.244	20	.104
Linear-by-Linear Association	10.629	1	.001
N of Valid Cases	30		

a. 42 cells (100.0%) have expected count less than 5. The minimum expected count is .40.

Table 16: Chi-Square Tests Understanding (post) by Occupation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.889[a]	18	.399
Likelihood Ratio	25.471	18	.112
Linear-by-Linear Association	4.997	1	.025
N of Valid Cases	30		

a. 38 cells (100.0%) have expected count less than 5. The minimum expected count is .40.

Table 17: Chi-Square Tests Confidence (pre) by Occupation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.708[a]	17	.159
Likelihood Ratio	30.337	17	.024
Linear-by-Linear Association	8.186	1	.004
N of Valid Cases	30		

a. 36 cells (100.0%) have expected count less than 5. The minimum expected count is .40.

Table 18: Chi-Square Tests Confidence (post) by Occupation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.639[a]	19	.547
Likelihood Ratio	23.240	19	.227
Linear-by-Linear Association	.368	1	.544
N of Valid Cases	30		

a. 40 cells (100.0%) have expected count less than 5. The minimum expected count is .40.

The one way ANOVA (Table 12) shows that prior to training the difference in anxiety means between medical and non-medical staff were significant (p=0.02), while post-training they were not (p=0.85). The means for understanding were significantly different before (p=0.00) and after (p=0.01) training. The difference in confidence means for this group were significant before training (p=0.003) but not after (p=0.55).

Pearson Chi-Square tests in Tables 13-18 indicate these differences could have happened by chance with p>0.05.

Gender

The following tables show the summed means for reported anxiety, confidence and understanding the need for change according to participant occupation (Table 19) as well as the ANOVA and Pearson's Chi-Square t-tests to determine significance (Table 8).

Table 19: Summed means by gender

		Female (N=16)		Male (N=14)	
		Mean	Std. Deviation	Mean	Std. Deviation
Pre-training	Anxiety Levels	5.46	1.016	4.37	1.260
	Confidence Using the Innovation	5.65	.847	4.31	1.245
	Understanding Need for Change	5.80	.876	3.73	1.590
Post-training	Anxiety Levels	5.46	.931	5.11	1.277
	Confidence Using the Innovation	5.58	.819	4.95	1.336
	Understanding Need for Change	5.48	.987	3.79	1.704

According to Table 19, prior to participating in the training program female participants were less anxious (m=5.46) than males (m=4.37); more confident (m=5.65) and understood the reason for the change better (m=5.80). Males reported means of 4.31 for confidence and 3.73 for understanding. After training, female participants reported the same levels of anxiety, while males reported decrease anxiety (m=5.11). Females indicated slightly lower confidence (m=5.58) after training, and decreased understanding of the need for the change program (m=5.48). Male participants felt slightly more confident (m=4.95) and their understanding for the change appeared to remain relatively the same with a minor increase in mean (+0.06).

Table 20: One-way ANOVA by gender

		Sum of Squares	df	Mean Square	F	Sig.
Anxiety Pre	Between Groups	8.984	1	8.984	6.963	.013
	Within Groups	36.131	28	1.290		
	Total	45.116	29			
Anxiety Post	Between Groups	.925	1	.925	.758	.391
	Within Groups	34.191	28	1.221		
	Total	35.116	29			
Understanding Pre	Between Groups	32.038	1	32.038	20.219	.000
	Within Groups	44.369	28	1.585		
	Total	76.407	29			
Understanding Post	Between Groups	21.413	1	21.413	11.453	.002
	Within Groups	52.350	28	1.870		
	Total	73.763	29			
Confidence Pre	Between Groups	13.322	1	13.322	12.072	.002
	Within Groups	30.897	28	1.103		
	Total	44.219	29			
Confidence Post	Between Groups	2.917	1	2.917	2.455	.128
	Within Groups	33.267	28	1.188		
	Total	36.183	29			

Table 20: Chi-Square Tests Anxiety (pre) by Gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.937[a]	19	.661
Likelihood Ratio	21.680	19	.300
Linear-by-Linear Association	5.775	1	.016
N of Valid Cases	30		

a. 40 cells (100.0%) have expected count less than 5. The minimum expected count is .47.

Table 21: Chi-Square Tests Anxiety (post) by Gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.143[a]	15	.310
Likelihood Ratio	23.635	15	.072
Linear-by-Linear Association	.764	1	.382
N of Valid Cases	30		

a. 32 cells (100.0%) have expected count less than 5. The minimum expected count is .47.

Table 22: Chi-Square Tests Understanding (pre) by Gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.304[a]	20	.274
Likelihood Ratio	32.091	20	.042
Linear-by-Linear Association	12.160	1	.000
N of Valid Cases	30		

a. 42 cells (100.0%) have expected count less than 5. The minimum expected count is .47.

Table 23: Chi-Square Tests Understanding (post) by Gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.634[a]	18	.205
Likelihood Ratio	31.045	18	.028
Linear-by-Linear Association	8.418	1	.004
N of Valid Cases	30		

a. 38 cells (100.0%) have expected count less than 5. The minimum expected count is .47.

Table 24: Chi-Square Tests Confidence (pre) by Gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.286[a]	17	.312
Likelihood Ratio	26.546	17	.065
Linear-by-Linear Association	8.737	1	.003
N of Valid Cases	30		

a. 36 cells (100.0%) have expected count less than 5. The minimum expected count is .47.

Table 25: Chi-Square Tests Confidence (post) by Gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.152[a]	19	.447
Likelihood Ratio	26.408	19	.119
Linear-by-Linear Association	2.338	1	.126
N of Valid Cases	30		

a. 40 cells (100.0%) have expected count less than 5. The minimum expected count is .47.

One way ANOVA (Table 19) tests for gender illustrate that prior to training both anxiety (p=0.01) and confidence (p=0.002) means were significantly different between males and females. However, after training anxiety (p=0.39) and confidence (p=0.13) means were not significantly different. Means for understanding the need for change were significantly different between genders both before (p=0.00) and after (p=0.002)

training. An examination of Pearson Chi-Square tests (Table 20-25) indicate that any significance established in the ANOVA could have occurred by chance ($p>0.05$).

Independent samples t-tests

The researcher also ran independent samples t-tests to determine significance between participant groups and their reported anxiety, confidence and understanding. These tests yielded the same results as one way ANOVA tests. Tables illustrating results from the independent t-tests are found in Appendix F.

Qualitative Results Pre-Training

This section will examine the responses to the open-ended questions included in the pre-training survey. These questions were used to gather additional detail about participant attitudes toward the practice management system that would shed some light on the quantitative results.

First, respondents were asked what three words best described their feelings about the clinic's upcoming change to a paperless facility. Four general trends arose from participant responses to this inquiry: feelings of anger, anxiety, readiness, and indifference. Within these four trends, it was possible to identify various subcategories that shed some light on the possible drivers behind respondents' feelings regarding the change initiative.

Some participants identified having a positive response to the implementation of a new computer system. Responses included: "good," "glad," "happy," "excited," "optimistic," "needed," "important," "necessary," and "positive." Within the positive responses to the change, participants identified reasons for their optimistic attitude. They identified an understanding of the need for the change, citing expectations of a "current,"

"innovative," and "modern" program that would result in "decreased overload," improved workflow and "better patient care." One participant called the innovation a "light at the end of the tunnel."

However, it is important to note that not all participants had positive feelings about the practice management system and not all of those who identified positive feelings toward the innovation felt fully prepared to undergo the change. One participant said, "I have a busy office and learning something new along with doing your daily work is hard, but after we get used to this, I think it will be great."

Prior to receiving the training communication, participants said they felt anxiety and concern regarding the change effort. Responses included: "anxious," "nervous," "worried," "concerned," "uncomfortable," and "unsure." Much like before, responses were grouped into subcategories that helped identify the drivers behind the anxiety. Time constraints were among the reasons for concern. As with those who felt that the innovation would improve workflow, there were others who worried that learning new procedures would be "very time consuming," affecting workflow and, as a result, patient care. Among his questionnaire responses one participant expressed how he felt the innovation would affect his responsibilities, "slowing down my work, more things for me to do."

Still, others identified feelings of anger, resentment, and resistance toward the practice management system. Some of the terms these individuals used to describe their feelings toward it included: "bad," "inefficient," "terrible," "worthless," "frustrating," and "fear." Upon closer look, these individuals also provided some insight into why they felt this way. Some participants felt the change effort was chaotic and disorganized,

which would correlate with their negative view of the change. Others stated the change was unnecessary ("needless") — in stark contrast to the individuals who felt the clinic was due for a change that was "modern," "innovative," and "current." However, as one participant pointed out "change is always reluctant" and there will always be individuals that would rather keep things the same.

Finally, respondents also indicated indifference toward the change effort. Stating they were just fine or did not know how they felt.

Next, participants were asked to identify any concerns they had regarding the change effort. This question was designed to provide insight into the feelings that participants identified in the previous question. The majority of respondents identified at least one concern regarding the practice management system and only a small number stated they had no reservations regarding the upcoming change. Those who declared entirely positive feelings regarding the change tended to have no concerns; however, there were still some of those who had worries.

As identified in the previous question, participants had concerns regarding time constraints related to the innovation. Among them were the following: concern the program would take too long to learn, cause a slow transition into the new system, and result in too much time consumed in seeing and evaluating the patient which disrupts the workflow. One respondent felt "it [would] take too much time to see and evaluate patients."

Time concerns went hand-in-hand with concerns regarding efficiency and patient care. There was anxiety related to how the new computer system would affect the timeliness of patient care and volume and whether it would have a negative effect on

doctor-patient relationships as a result of depersonalization. One respondent said, “I am concerned about its effects on throughput, patient relations (too much time spent on computer rather than patient) slowing [the] patient care process.” It appears employees were concerned that the new computer system would require they spend more time entering data into the system and less time speaking with the patient and devoting the necessary one-on-one time that develops the doctor-patient relationship.

The next area of concern was related to technological difficulties and information sharing. Participants were worried about what to do in the event of technological difficulties such as system failures and how they would affect workflow and patient care. They demonstrated concerns about “misinformation,” system security, “lost information,” a lack of information sharing and with learning a new computer system.

Participants were then asked how they first heard about the upcoming change effort in order to identify the primary form of communication regarding the change with employees. Many participants indicated that they first heard of the change in meetings with their supervisors, management, the board, or the CEO. Others indicated they heard it from their peers and the grapevine, while others said they received one-way communications such as memos and emails.

They were also asked to identify the different types of communication they received about the change initiative prior to implementation. Participants cited verbal forms of communication most often, indicating that the organization primarily used two-way forms of communication, among them: information received at board meetings, meetings, from supervisors and training classes and sessions. Others identified written or one-sided forms of communication such as booklets, pamphlets, memos, mailers, and

literature. There were several participants who indicated they did not receive any form of communication and others who commented on the time lapse between communications and implementation. For example, one participant said, "[I] received communication but it was very slow starting, so when we did start to [implement] the system, most had forgotten."

Participants were asked whether they felt the change initiative was necessary and why they felt that way. Responses indicated that a large number of respondents felt the change was needed at the medical facility. So, although many respondents have indicated anxiety and concerned feelings regarding the change initiative, they demonstrated some understanding of the reason behind the change, and that the reason is not without merit. Responses included the following: the ability to provide improved service and care to patients, improvements in obtaining patient records, the need to keep up with technology ("keep up with the times" and "all systems will eventually become paperless"), the ability to advance clinical research ("allow for clinical research"), and time-saving qualities. However, there were still a number of individuals who indicated resistance to the change initiative. Many of these individuals did not elaborate, simply saying "no," they did not feel the change was necessary. One respondent said, "Maybe. I have been told, but am not convinced that there is a positive setup in patient care and management." A lot of participants indicated that the training program was needed in order to help them feel more comfortable using the computer system.

Finally, participants were asked to speculate on whether they felt there was anxiety related to the change effort in their department and what they thought was causing it. Respondents indicated that there were anxiety issues resounding in their

departments. Some of the reasons given for this were fear of the unknown and concerns regarding their ability to properly use the new computer system. One participant said, “Some people are not feeling they can do it.” Another participant said, “Everyone is worried about their role and its effect on their daily tasks.” Other concerns included the failure to provide information and loss of data; effects on workflow (“nervous about time consumption”) and patient care.

Qualitative Results Post-Training

After the training program, participants were asked another series of questions to gauge if the training was effective in reducing any anxiety or resistance participants had regarding the new computer system and provide additional detail to the post-training quantitative results.

First, participants were asked to identify any concerns with the new computer system that were not covered during the training program. Most participants stated they had no concerns without elaborating, and others simply did not answer. However, of the individuals who identified concerns the trends were related to the following: workflow and responsibility, patient care and experience (“How will it affect patient flow and volume [?]”), time, and technology. As with the concerns encountered prior to undergoing the training program, individuals were concerned that the new system would affect workflow because they would have difficulty going through their everyday tasks and as a result patient care would suffer. Time concerns were also present, as they were prior to the training, although it was not mentioned as much as before the training program. Finally, there were still participants who indicated concerns regarding technological difficulties, mainly, how to address patient care and daily tasks in the event

of a computer malfunction. As one participant put it, “How will we take care of patients when the computer is down?”

Then, participants were asked what three words best described how they felt about using the new computer system on a daily basis. As with the questionnaire administered prior to the training program, several trends arose. Among them were: confidence and comfort, anxiety and worry, and frustration.

Many respondents indicated they were happy with the computer system after undergoing the training program. Responses included “comfortable,” “relaxed,” “confident,” “excited,” “convenient,” “modern,” “interesting,” “hopeful,” and “necessary.” One respondent said, “I like [the practice management system], I am looking forward to going paperless.” Some stated they understood the programs’ time-saving qualities, referring to it as “convenient [and] time saving.”

However, not everyone felt comfortable moving forward. There were still respondents who indicated they felt anxious about using the new computer system. Responses included worried, “still fearful,” confused, “apprehensive,” and “overwhelmed.” From responses, it could be determined that some of the anxiety individuals felt had to do with their feelings that using the program would take up too much of their time and that it ran slowly. “Too slow (I find the computer freezes up),” one participant pointed out.

Participants were next asked if there was anything they would change about the training program and, if so, what it would be. A lot of respondents stated they would not change anything about the training program. Of the individuals who felt otherwise, they

stated a need for additional time in training, or one-on-one time to facilitate understanding and comfort.

Finally, participants were asked if there was anything they would change about the communication they received regarding the change initiative prior to implementation. Although most participants said no, some indicated they would have preferred more one-on-one time and clearer communication. One participant said, “Even though there was plenty of communication [it] was somewhat confusing and unorganized with too many changes.”

CHAPTER 5

Discussion

This research study set out to determine the effectiveness of a training communication at a Florida medical facility in acclimating participants to its upcoming change to a paperless facility. The training program was intended to instruct participants, with a specific focus on the medical staff, on how to use the new practice management system.

This section addresses the hypotheses and research questions set forth in this study in light of the results shown in the previous chapter. It will discuss whether the training communication functionally reduced participant anxiety toward the change, increased participant understanding of the need for the innovation, and increased participant confidence using the practice management system. Additionally, trends in qualitative responses to the open-ended questions will help determine whether participants viewed the change as an organizational improvement, if the training communication helped change participant perception of the change, and if it increased change acceptance and reduced resistance. It will also address how the training program affected the different participant groups (occupation, age, gender).

Hypotheses

H1: Communication training reduced participant anxiety about the change.

As shown in the previous chapter (Table 1), participants reported a higher mean for anxiety (m=5.30) after training, indicating they felt more comfortable and less

anxious about the upcoming change. A paired t-test (Table 2-B) shows the change in mean was approaching significance (p=0.06); however, H1 is rejected.

According to means for individual questions (Appendix D, Table 30 and Appendix E, Table 39), after training participants were slightly more comfortable adopting the practice management system (+0.56), likely because they were satisfied with the training (m=5.00) as they felt they were able to ask questions freely (m=6.03), making training user-friendly (m=5.80). As a result, participants believed they were more likely to use the practice management system after undergoing training (m=5.60)

H2: Communication training increased user understanding of the need for the innovation.

Table 1 shows that overall understanding about the need for the change decreased after the training program by 0.14. But t-test results indicate that the decrease in mean is not significant (p=0.50), therefore not illustrating a change in attitude. Consequently, H2 is rejected.

Still, it is interesting to note that this is the only theme for which the training program had the opposite effect as intended (although that effect was relatively minor). The means for anxiety and confidence had positive movements, as predicted, while understanding means shifted in the opposite direction from what was anticipated.

The training program did not appear to address the innovation's potential benefits, instead focusing more heavily on system usage. Accordingly, it did not appear to illustrate how the changes might help streamline work and improve efficiency. Instead, while participants viewed the change as "modern" and "convenient" (as seen

in qualitative data) they did not seem to link these qualities to the innovation's benefits. They were more concerned with the amount of time it would take them to feel comfortable using the system to fully consider its advantages in the long run. They were focused on how workload would be affected while they became accustomed to the changes. Some felt that it would take too much time to input data ("time-consuming," "too slow"), or get used to the changes and therefore slow them down. This can account for the lower means, which can be seen pre- and post-training for the statement, "I understand the need for this change." Prior to training, participants had a mean of 5.57 (Appendix D, Table 29) and after it was 5.40 (Appendix E, Table 38).

It is possible that these benefits will reveal themselves over time, once use of the practice management system has become second nature and it is easier to step back and see the big picture.

H3: Communication training improved levels of confidence using the innovation.

While Table 1 shows there was a positive increase in participant reported confidence means, this change was not significantly different ($p=0.14$), which suggests there was no marked change in attitude. As a result, H3 is rejected. The change in mean could have resulted by chance.

As seen in Appendix E, Table 40, participants were satisfied with the training ($m=5.00$). It covered information pertinent to system usage ($m=5.40$), was useful ($m=5.80$) and the trainer provided appropriate feedback ($m=5.63$), resulting in participants believing that others would benefit from undergoing training ($m=5.90$). However, this did not seem to make participants significantly more comfortable with the

innovation. While they felt the program was user-friendly (m=5.60), they were not as secure about their ability to use the practice management system with little assistance (m=4.97) or fit it easily into their daily work routine (m=4.53).

Research Questions

This section addresses the research questions proposed for this study by examining quantitative results for the total group of participants along with qualitative data gathered from the survey's open-ended questions.

R1: How did the training communication affect participant groups (occupation, gender, age)?

Pearson Chi-Square tests in Chapter 4 show that pre- and post-training significance and similarities observed within groups could have resulted by chance ($p>0.05$), making it difficult to identify if the changes in means occurred as a direct result of training. As a result, the following discussion on the potential effects of training according to participant groups is based in speculation.

Younger participants (under age 41) did not seem to benefit very much from the training program, as their means for anxiety, confidence and understanding remained relatively the same after undergoing training. Participants over 40, on the other hand, reported shifts in their anxiety, confidence and understanding.

Before training, anxiety levels between these two groups were significantly different, while after training, t-tests indicate they are not ($p=0.07$). This seems to imply that the reported anxiety levels after training were similar, thus training appeared to reduce older participants' anxieties and bring them to a level that approached those of younger participants (who reported little anxiety to begin with). However, confidence and

understanding remained significantly different both before and after training. While older participants reported higher summed means for confidence (+0.40), younger participants felt significantly more secure moving forward. This could be because younger participants are more accustomed to using technology, as they have been exposed to it more often during their work. Younger participants were more likely to be a part of the office staff, and their jobs require they use the current computer system with more frequency than the medical staff to schedule patients, requests lab tests, etc. Additionally, younger individuals are more likely to be dexterous with technology as they, in a sense, grew up with it.

Summed means for understanding the need for the change decreased (-0.14) for participants over 40, moving them farther from younger participants. The training focused more on the innovation's usage. As discussed earlier, qualitative data indicated that participants were focused on the amount of time if would take them to feel comfortable enough with the new system and how this would affect efficiency and workflow in the meantime. It is possible that because of these concerns, participants were not able to focus on the long-term benefits, once using the practice management system became second nature. As a result, they felt they understood the reason for the change less (with a summed mean slightly better than neutral m=4.19). Younger participants felt relatively confident before and after training. Upon closer inspection (Appendix E, Table 35) they felt they understood the need for the change (m=6.00) and agreed that changing to a paperless clinic would benefit the clinic (m=5.36), patients (5.36), and their relationship with patients (m=5.64).

When summed means for anxiety, confidence, and understanding are observed according to occupation, we see that the medical staff reports decreased anxiety, and increased confidence and understanding after training, while “other” participants report increased anxiety, and reduced confidence and understanding. Prior to training, the means between the medical staff and “others” were significantly different. This significance remains for confidence and understanding after training, but not for anxiety. It appears that “other” participants over estimated their ability to learn and use the system, and the training adjusted their expectations.

Finally, the researcher checked for any differences in summed means according to participant gender. Females had significantly higher means than males for all measures. A closer look revealed that all male participants were physicians, the group the medical facility knew would be the most resistant, as they have the least interaction with the current computer system and thus would have to change their daily routine the most. This explains their relatively low summed means, which at their highest were only slightly better than neutral. The training appeared to benefit males and not females. After training, male summed means for anxiety increased to where they were no longer significantly different than females’ anxiety summed means (which remained the same after training). Males also reported increased summed means for confidence, while females’ confidence means decreased. However, it seemed the training simply adjusted female expectations, as their confidence levels remained high (m=5.58). When it came to understanding the need for the change, the training appeared to affect females as opposed to males. The men’s summed means remained relatively the same (+0.06) while the women’s dropped by 0.32.

These results appear to indicate that the training was more successful with specific groups. Members of the medical staff, which predominantly over 40 years of age and male (all male participants were physicians), appeared to benefit the most from the training program. This could have something to do with the fact that the training was led by another member of the medical staff, specifically a physician. This individual may have served as a change agent for these specific groups, as he is a trusted peer, and likely speaks their "same language." Additionally, the medical facility anticipated these groups would pose the most difficulty, as they would have to adjust the most to the change. Therefore, it appears that the training specifically focused on their needs, which could be why there were no large changes in summed means individuals who were not members of this group, which included most females and participants under age 41. Further research on tailoring training to specific groups could yield interesting results.

R2: Did participants in the training believe the training functionally reduced anxiety and improved acceptance of the change?

Quantitative data indicated that, overall, participant's experienced a reduction in anxiety, although t-tests indicated that the reduction was only marginal ($p=0.060$).

Based on quantitative data, the training helped reduce participant anxiety by increasing their confidence using the practice management system. It also demonstrated that all participants felt positively about the training they received.

In the qualitative data, a decrease in resentment and anxiety was observed, although it was not fully alleviated. This could account for some of the decreases in means observed in the age group analysis and some of the areas where the mean increases were not very considerable.

The resistance and anxiety that were identified in the qualitative responses were related to: concerns about time constraints, work disruption, technical difficulties, learning a new computer system, and misinformation.

The training program appears to have provided sufficient information for some to reduce anxiety related to the usage of the practice management system, but didn't seem to address other areas of concern. This was confirmed in the qualitative data when participants were asked if they had any concerns about the computer system that were not covered in the training program. A large portion said they had no concerns. The participants that identified concerns said they were concerned with the time it would take them to feel comfortable using the system ("difficulty getting tasks completed") and how this would affect workflow ("How will it affect patient flow and volume [?]"). Another concern was how to address patient care and workflow in the event a system failur. As one participant put it, "How will we take care of patients when the computer is down?" All of this explains the quantitative results, where the group reported reduced comfort with the amount of time they were given to prepare for the change and some participant groups experienced decreases in anxiety variable means. They did not feel the training addressed all of their concerns, or maybe for some, training brought concerns to their attention they had not considered.

Respondents did seem somewhat more open to the clinic's change after training, with a much larger set of positive responses including, "comfortable," "modern," "hopeful," and "modern."

Overall, the group experienced favorable changes in anxiety and confidence variables, and reported less anxiety and resistance in the post-training open-ended

questions. The training appears to have functionally (although marginally) reduced anxiety and resistance. However, it is important to note that participants were not completely sold on the innovation. While they were more comfortable with using the practice management system, they did not emerge from training as new-found supporters; as can be seen in both qualitative and quantitative data. They still felt "concern[ed]," "anxious," "nervous," and "overwhelmed," but these emotions were mixed, as some of these same individuals said they were "hopeful" and "excited."

R 3: How did participants perceive the change?

Qualitative and quantitative data demonstrated that participants were divided about the upcoming change prior to the training. There were some who were ready for the change and simply wanted instruction on how to use the new computer system. These individuals felt "positive" about the change; that it was "needed" and "modern … [and] convenient." Some were slightly against the change because they were nervous about how to use the practice management system or whether it would be beneficial. One individual said he was "optimistic" but "apprehensive" and found the change "frustrating." And others were in complete opposition, saying that it was "worthless," "terrible," "bad," "inefficient," and could result in depersonalizing patient care. As stated in Chapter 4, one individual said, "I am concerned about its effects on throughput, patient relations (too much time spent on computer rather than patient), slowing patient care process."

After the training communication, quantitative data indicated a positive movement in participant attitude about the change, but qualitative data indicates the movement represents varied degrees of acceptance. The individuals who were already

proponents of the change, but were unsure how to use the innovation, had an improved outlook about the change. They said it was “convenient,” “modern,” and “necessary.” One participant said it was “cost effective, efficient, [and might] decrease overload.” Those who were concerned and apprehensive about the change because of their concerns with using the system had mixed results as did the ones who were in complete opposition. For the former, some perceived the change as necessary once they learned how to use it. One participant described it as “user-friendly, [and] necessary.” Others had new concerns once they finished training like, “Will patient value decline [?].” They felt more comfortable with using the practice management system, but were concerned about computer failures and how that would affect workflow (“difficulty getting tasks completed”) and patient care.

The same happened with the participants who were against the change altogether. Some reported they were still unsure but hopeful. These individuals were concerned with the time it would take them to feel comfortable and how that would affect patient care and workflow in the meantime. One participant said he felt the system was “complicated” and would “take excessive time.” There was also a concern for technology glitches. And finally, others were simply not convinced. One said, “Half of my job duties I have yet to understand.” They remained resistant.

R 4: Were the changes viewed as organizational improvements?

Quantitative data indicated a decrease in participants’ understanding for the need to change to a paperless system. While some participants still indicated they understood the need to change, they were not as confident in the practice management system’s benefits as they were prior to training. It is likely that these individuals gave the practice

management system more credit than due, and when they actually used it in training, they had more realistic expectations.

While some felt the innovations was “modern” and “convenient,” it is possible they have not fully considered the long-terms benefits once everyone was comfortable with the changes in place. And this can account for the lower quantitative means related to the innovation’s benefits. After all, participants had some concerns about how long it would take them to learn and be comfortable with the system and how that might negatively affect workflow during that time. Some felt that it would take too much time to input data, or get used to the changes and therefore slow them down.

Since the quantitative data puts the means above neutral, and qualitative data indicates some acknowledgement of the benefits the innovation would potentially realize, it can be said that participants viewed the change as an organizational improvement. But, it is important to keep in mind that this view was only superficial.

CHAPTER 6

Conclusions

The size of the sample population taken for this study is not sufficient to generalize results to the medical facility's employee population, nor to the population at large for that matter. However, survey results can be looked at to see how well they line up with organizational change theory and communication theory.

One of the most evident findings is that although organizational and communication change theories espouse the importance of communication, it is important not to regard it as some sort of magical cure-all. Overall, participants indicated reduced anxiety and increased confidence using the innovation, but on the whole the changes were not dramatic. This not only shows that communication is not a magic remedy, it also demonstrates that it must exist over time, as opposed to one all-encompassing communication session. It is not possible to cover everything in the necessary detail without overwhelming those receiving the information.

It is evident that medical facility's training program was not able to do it all. Participants' understanding of the need for the change decreased after undergoing training. While the change was not significant ($p>0.05$), the fact that there appeared to be no change in attitude about the innovation's relative advantage merits mention. As discussed earlier, Rogers' Diffusion of Innovations theory (195) considers understanding an innovation's relative advantage a main driver in bringing individuals around to accepting change rather than resisting it. Seeing as individuals felt less confident regarding the need or benefits the practice management system would bring after training indicates there is still work to be done. Without this component, the medical facility will

continue an uphill battle against change resistance because its members will continue to search for meaning, as uncertainty is still present. “Individuals are more likely to adopt an innovation if they think it will help them” (Berwick, 2003, p. 1971).

Because the training program focused more on innovation usage, and was somewhat successful (marginally) in reducing anxiety, it is possible that continued communication about the practice management system and prolonged exposure and usage will help participants better understand the innovation’s relative advantage and as a result the reason for the change initiative. According to Roger’s (1995) Diffusion of Innovations theory, this is known as the clarifying stage in the initiation phase. It occurs when an innovation is put to use in an organization so that the innovation’s meaning becomes clearer to its members. It consists of a “social construction.” “When a new idea is first implemented in an organization it has little meaning to the organization’s members,” which is what appears to be happening in this particular case (p. 399).

This research only focused on the training communication, and as a result it is not possible to draw conclusions about any additional communication participants may have received. This is considered a limitation of this study. Perhaps a longitudinal study would indicate a change in participant attitude regarding the organization’s change effort. It would be interesting to see if anxiety and confidence continue to benefit over time, and whether time will also play a significant factor in exposing the innovation’s relative advantage.

That being said, this research study does not discredit the importance and necessity of communication in change facilitation. Study participants, in their qualitative responses, indicated that they would benefit from additional one-on-one sessions or more

individualized training sessions (“more one-one-one”). This goes hand-in-hand with findings from Goodman and Truss’s 2004 study, where employees indicated a preference for two-way communication.

Moreover, participants responded positively to the training they received, as illustrated by quantitative data (Appendix E). It is because of this that this research concludes that the training communication was somewhat useful and beneficial. Participants strongly felt that others should take part in the training course. However, it is simply not possible to address a large change effort during one training session. As one participant stated, “[We] should have training over several sessions.”

Another training program attribute that merits mention, is that it was led by a member of the physician staff and not a representative from the software company that provided the innovation to the medical facility. It was evident from interaction in the training sessions that participants felt comfortable around the doctor who provided the training and regarded him a knowledgeable individual. There were no negative responses related to the training program and its facilitator’s ability to communicate information to participants (Appendix E).

The medical facility employed a change agent as the face of the training program supporting the practice management system. However, it would have likely benefited from employing more than one change agent. Not doing so places too much responsibility on one individual and increases chances for failure. Moreover, having more than one individual advocating this change would have provided participants additional people to turn to with questions, and would lend the change effort more credibility.

Another approach that may have been beneficial was to train a group of individuals through implementation before rolling the change effort out to the entire staff. Rogers (1995) referred to this as observability. If the change effort is successful in one department, and remaining organizational members are able to observe this success, they are more likely to be receptive to adopting the innovation as well. Furthermore, rolling out a change effort in one department before doing so in the remainder of the organization can help with strategic planning. Organizations are able to identify pitfalls and work to address them before implementing a change throughout. By not employing this method, the medical facility's change effort seemed haphazard. Training sessions were postponed for long periods of time while the organization addressed roadblocks, which did not go unnoticed. In the qualitative section of the research, one individual pointed out that from start to implementation the change effort "was very slow starting so when we did start to [implement] the system, most had been forgotten." Another individual said, "Even though there was plenty of communication, the communication was somewhat confusing and unorganized with too many changes."

Overall, the training program was minimally successful in reducing anxiety, but did not increase confidence and participant understanding of the need for the change.

The researcher encountered some limitations in her study. The small sample size made it difficult to draw a better understanding of participants' view of the change and training. The medical facility's training session postponement added to this limitation. The researcher had difficulty staying informed of when training would restart, and missed training sessions that would have made it possible to collect additional survey questionnaires.

As mentioned before, having only studied the training communication program also limited the conclusions that could be drawn. This study may have benefited from a longitudinal component that would have identified the effect of time and exposure to change acceptance or resistance.

Additionally, there is an opportunity to expand and focus this research specifically into the field of public relations, to emphasize or study the need for tailored and strategic communications to enact successful change efforts. While this study focused on the training communications directed at a small group, an extension of this research could include the study of multiple communication vehicles, seeing as two-way and one-on-one communication is often time consuming and not always feasible. A study such as this one could shed additional light on effective communication tools during different facets/stages of a change program. As a participant in this study pointed out, the communication received outside of training from the initial announcement of the upcoming change to the change implementation was sporadic, and made the effort seem haphazard. What types of communication efforts would have helped alleviate this? When is one-way communication more effective than two-way communication? How much and what types of communication vehicles are best employed when?

Also, expanding the sample size or possibly extending the research over multiple hospitals or medical facilities could yield generalizeable results, especially considering the continued increase in the use of technology in the workforce. As more medical facilities switch to electronic practice management, what opportunities exist for training?

This study showed a marked difference between medical staff members and non-medical staff members regarding their comfort, understanding and anxiety related to

adopting the change to a paperless facility. The training communication appeared to resound more effectively among the medical staff than others. This supports a closer look into the need for strategically-tailored training and communication approaches for specific audiences. Would individuals who were not members of the medical staff have benefited from different forms of training? Would they have needed less one-on-one? Was their training jeopardized by those who were not as advanced as they were with the computer system? What is it about training programs that make them resonate better for some people than for others? Further research on this topic may yield interesting results.

Yet another area that merits investigation is the appropriate development of interactive, multimedia training programs. As stated earlier, two-way communication, or one-on-one training is time-consuming and in this day and age not always viable. How can training communication work effectively in the digital age? How much can be taught through software programs and what needs additional attention from trainers?

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Appendices

Appendix A

Pre-Survey with variable coding

Survey I

1. Please select one: V1 (1=physician; 2=nurse/nurse practitioner; 3=other)
_ ___ Physician __ ___ Nurse _ ___Nurse practitioner
__ __Other:_____v1-a_____ qualitative answer

2. Please select one: _____ Female _____ Male V2 (female=1; male=2)

3. Age: _____ V3 = numerical value

Please select on a scale of 1 to 7, 1 being strongly disagree and 7 being strongly agree, the accuracy of the following statements as they pertain to you. V4 – V18 (Numerical value on a scale of 1-7)

4. I use the current software system regularly (3 or more times per week) V4

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

5. I feel comfortable changing to a paperless system (practice management system). V5

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

6. I feel I need this training program in order to properly use the new software system. V6

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

7. I think the new software program will be beneficial to my everyday work activities. V7

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

8. I think the clinic will benefit from the new software system. V8

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

9. I think this training program will be useful in acclimating me to the new system. V9

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

10. I feel we will have enough time in training to cover the information I will need to use the new software program. V10

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

11. I feel we have been given adequate time to prepare for the upcoming change to a paperless facility. V11

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

12. I understand the need for this change. V12

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

13. Doctor-patient relationships will improve because of this change. V13

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

14. There was sufficient planning for this change. V14

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

15. I believe patients will benefit from the clinic becoming a paperless facility. V15

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

16. I expect this computer software will be easy to learn. V16

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

17. I expect the new computer system will be easy to use. V17

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

18. I expect this training program to be user-friendly. V18

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

Please answer the following questions fully. V19 – V24 = qualitative data

19. List three words that describe how you feel about Florida Medical Clinic changing to a paperless system. V19

    1. _____
    2. _____
    3. _____

20. Do you have any concerns regarding the change over to a paperless system? If so, what are they and why do you feel this way? V20

_____

_____

_____

_____

_____

_____

_____

_____

21. How did you first hear about this change? V21

_____

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_____

22. What kind of communication did you receive about this change prior to implementation? V22

_____

_____

_____

_____

_____

_____

23. Do you think this training and change is necessary? Why? V23

_____

_____

_____

_____

_____

_____

_____

24. Do you think this change is causing anxiety in your department? If so, how and why? V24

_____

_____

_____

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_____

_____

Appendix B:

Post-Survey with variable coding

Survey II

1. Please select one: V25 (1=physician; 2=nurse/nurse practitioner; 3=other)
___ Physician _____ Nurse ____Nurse practitioner
____Other:_____v25-a_____ = qualitative data

2. Please select one: _____ Female _____ Male V26 (female=1; male=2)
3. Age: _____ V27

Please select on a scale of 1 to 7, 1 being strongly disagree and 7 being strongly agree, the accuracy of the following statements as they pertain to you. (V28 – V51 = a numerical value from 1-7)

4. I was a regular user of the previous software system (3 or more times per week) V28

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

5. I feel comfortable with the new computer system. V29

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

6. I feel satisfied with the training I received regarding the new computer system. V30

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

7. The trainer was able to communicate ideas clearly with me. V31

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

8. I believe I will be able to effectively use the new computer system with minimal assistance on a day-to-day basis. V32

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

9. The program will help improve the clinic's relationship with patients. V33

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

10. I feel the information discussed in training was clear and easy to understand. V34

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

11. I feel there was sufficient information exchanged to prepare me for this change. V35

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

12. Other employees could benefit from this training. V36

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

13. The clinic will benefit from being a paperless facility by improving patient satisfaction. V37

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

14. The training I received was useful. V38

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

15. We have been given adequate time to prepare for the upcoming change to a paperless facility. V39

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

16. Patients will benefit from the clinic becoming a paperless facility. V40

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

17. I understand the need for this change. V41

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

18. I feel the training program effectively covered the information I needed to use the new software. V42

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

19. I am more likely to use the computer system after undergoing training than I was before. V43

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

20. The new program is user friendly. V44

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

21. This innovation will easily fit into my daily work routine. V45

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

22. I had the opportunity to ask as many questions as needed in training. V46

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

23. I received appropriate feedback from the trainer to feel comfortable using the new computer system. V47

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

24. The training was user-friendly. V48

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

25. I feel the system will help improve my relationship with my patients. V49

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

Very Effective

26. How would you rate this training program overall? V50

Not Effective

1 2 3 4 5 6 7

27. How would you rate the new computer system overall? V51

Not Useful Very Useful

1 2 3 4 5 6 7

Please answer the following questions fully (V 52- V55 = qualitative data)

28. Do you have any concerns regarding the new computer system that were not covered in this training program? If so, what? V52

_____

_____

_____

_____

_____

29. What three words best describe how you feel about using the new computer system on a daily basis? V53

1. _____

2. _____

3._____

30. Is there anything you would change about the training program? V54

_____

_____

_____

_____

31. Is there anything you would change about the communication efforts by the clinic about the change prior to its implementation? V55

_____

_____

_____

Appendix C:

Surveys:

The survey questions will measure respondent's attitudes toward the innovation and the training communication. The survey questions will group together as follows:

Pre-Training Survey Question	Post Training Survey Question
1	1
2	2
3	3, 5, 11
4	18
5	6, 10
6	3, 5, 9, 11
7	15, 19, 20, 8
8	12
9	14
10	10, 22
11	12
12	13
13	16
14	17
15	19, 20, 21

The questions that do not group together are questions that could only be asked after the training communication has already taken place.

Appendix C (Continued)

How hypothesis themes match up to survey questions

Pre-Training		
Anxiety Variable	Understanding Variable	Confidence Level Variables
V5	V7	V6
V9	V8	V10
V11	V12	V16
V14	V13	V17
V16	V15	V18
V17		
V18		

Post-training		
Anxiety Variables	Understanding Variables	Confidence Variables
V29	V33	V30
V30	V37	V32
V32	V40	V35
V39	V41	V36
V43	V4	V38
V46	V49	V42
V48		V43
		V44
		V45
		V47
		V51

Appendix D

Survey Question Groupings Pre-training

The following tables show the individual pre-training means for survey instrument questions related to anxiety, confidence and understanding the need for change. They are grouped according to age, occupation and gender.

Age Groups

Table 26: Understanding the Need for the Innovation:

Survey Question	0-40			Over 40			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel comfort changing to a paperless system (practice management system).	5.18	11	1.888	3.28	18	1.934	4.00	29	2.104
I think this training program will be useful in acclimating me to the new system	6.27	11	1.555	6.17	18	1.150	6.21	29	1.292
I feel we have been given adequate time to prepare for the upcoming change to a paperless facility	5.82	11	1.079	4.78	18	1.437	5.17	29	1.391
There was sufficient planning for this change.	5.91	11	.944	5.33	18	1.085	5.55	29	1.055
I expect this computer system will be easy to learn.	5.73	11	1.348	3.72	18	2.024	4.48	29	2.029
I expect the computer system will be easy to use.	5.73	11	1.348	3.94	18	1.984	4.62	29	1.953
I expect this training program will be user-friendly.	5.45	11	1.214	4.06	18	1.697	4.59	29	1.659

Table 27: Anxiety Levels:

Survey Question	0-40			Over 40			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I think the new software program will be beneficial to my everyday work activities	6.27	11	2.043	4.06	18	2.043	4.90	29	2.006
I think the clinic will benefit from the new software system	5.36	11	2.292	4.83	18	2.121	5.03	29	2.163
I understand the need for this change.	6.09	11	1.044	5.28	18	1.904	5.59	29	1.659
Doctor-patient relationships will improve because of this change.	5.55	11	1.128	3.22	18	1.700	4.10	29	1.877
I believe patients will benefit from the clinic becoming a paperless facility.	4.73	11	2.195	4.28	18	1.742	4.45	29	1.901

Appendix D (Continued)

Table 28: Confidence Levels

Survey Question	0-40			Over 40			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel I need this training program in order to properly use the new software system.	6.82	11	.405	6.56	18	.784	6.66	29	.670
I feel we will have enough time in training to cover the information I will need to use the new software program.	5.64	11	1.206	4.22	18	1.437	4.76	29	1.504
I expect this computer system will be easy to learn.	5.73	11	1.348	3.72	18	2.024	4.48	29	2.029
I expect the computer system will be easy to use.	5.73	11	1.348	3.94	18	1.984	4.62	29	1.953
I expect this training program will be user-friendly.	5.45	11	1.214	4.06	18	1.697	4.59	29	1.659

Occupation

Table 29: Understanding the Need for the Innovation:

Survey Question	Medical Staff			Other			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I think the new software program will be beneficial to my everyday work activities	4.00	18	2.000	6.33	12	.778	4.93	30	1.982
I think the clinic will benefit from the new software system	4.11	18	2.220	6.50	12	.798	5.07	30	2.132
I understand the need for this change.	5.17	18	1.823	6.17	12	1.115	5.57	30	1.633
Doctor-patient relationships will improve because of this change.	3.22	18	1.665	5.50	12	1.168	4.13	30	1.852
I believe patients will benefit from the clinic becoming a paperless facility.	3.72	18	1.873	5.58	12	1.240	4.47	30	1.871

Appendix D (Continued)

Table 30: Anxiety Levels:

Survey Question	Medical Staff			Other			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel comfort changing to a paperless system (practice management system).	3.44	18	2.148	5.00	12	1.706	4.07	30	2.100
I think this training program will be useful in acclimating me to the new system	6.00	18	1.138	6.50	12	1.446	6.20	30	1.270
I feel we have been given adequate time to prepare for the upcoming change to a paperless facility	5.22	18	1.263	5.08	12	1.564	5.17	30	1.367
There was sufficient planning for this change.	5.33	18	1.138	5.75	12	.965	5.50	30	1.075
I expect this computer system will be easy to learn.	3.67	18	1.940	5.67	12	1.435	4.47	30	1.995
I expect the computer system will be easy to use.	3.78	18	1.768	5.83	12	1.467	4.60	30	1.923
I expect this training program will be user-friendly.	4.17	18	1.757	5.42	12	1.311	4.67	30	1.688

Table 31: Confidence Levels:

Survey Question	Medical Staff			Other			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel I need this training program in order to properly use the new software system.	6.44	18	.784	6.92	12	.289	6.63	30	.669
I feel we will have enough time in training to cover the information I will need to use the new software program.	4.44	18	1.542	5.25	12	1.288	4.77	30	1.478
I expect this computer system will be easy to learn.	3.67	18	1.940	5.67	12	1.435	4.47	30	1.995
I expect the computer system will be easy to use.	3.78	18	1.768	5.83	12	1.467	4.60	30	1.923
I expect this training program will be user-friendly.	4.17	18	1.757	5.42	12	1.311	4.67	30	1.688

Appendix D (Continued)

Gender

Table 32: Understanding the Need for the Innovation:

Survey Question	Female			Male			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I think the new software program will be beneficial to my everyday work activities	6.25	16	.775	3.43	14	1.869	4.93	30	1.982
I think the clinic will benefit from the new software system	6.13	16	1.544	3.86	14	2.107	5.07	30	2.132
I understand the need for this change.	6.13	16	1.025	4.93	14	1.979	5.57	30	1.633
Doctor-patient relationships will improve because of this change.	5.25	16	1.238	2.86	14	1.610	4.13	30	1.852

Table 33: Anxiety levels:

Survey Question	Female			Male			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel comfortable changing to a paperless system (practice management system).	4.94	16	1.611	3.07	14	2.200	4.07	30	2.100
I think this training program will be useful in acclimating me to the new system	6.44	16	1.315	5.93	14	1.207	6.20	30	1.270
I feel we have been given adequate time to prepare for the upcoming change to a paperless facility	5.06	16	1.482	5.29	14	1.267	5.17	30	1.367
There was sufficient planning for this change.	5.56	16	1.031	5.43	14	1.158	5.50	30	1.075
I expect this computer software will be easy to learn	5.38	16	1.408	3.43	14	2.102	4.47	30	1.995
I expect the new computer system to be easy to use.	5.50	16	1.461	3.57	14	1.910	4.60	30	1.923
I expect this training program will be user-friendly.	5.38	16	1.310	3.86	14	1.748	4.67	30	1.688

Appendix D (Continued)

Table 34: Confidence Levels

Survey Question	Female			Male			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel I need this training program in order to properly use the new software system.	6.81	16	.403	6.43	14	.852	6.63	30	.669
I feel we will have enough time in training to cover the information I will need to use the new software program.	5.19	16	1.276	4.29	14	1.590	4.77	30	1.478
I expect this computer system will be easy to learn.	5.38	16	1.408	3.43	14	2.102	4.47	30	1.995
I expect the computer system will be easy to use.	5.50	16	1.461	3.57	14	1.910	4.60	30	1.923
I expect this training program will be user-friendly.	5.38	16	1.310	3.86	14	1.748	4.67	30	1.688

Appendix E

Survey Question Groupings Post-training

The following tables show the individual post-training means for survey instrument questions related to anxiety, confidence and understanding the need for change. They are grouped according to age, occupation and gender.

Age Groups

Table 35: Understanding the Need for the Innovation

Survey Question	0-40			Over 40			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
The program will help improve the clinic's relationship with patients.	5.45	11	1.753	4.06	18	1.474	4.59	29	1.701
The clinic will benefit from being a paperless facility by improving patient satisfaction	5.36	11	1.804	4.39	18	1.754	4.76	29	1.806
Patients will benefit from the clinic becoming a paperless facility	5.36	11	1.804	4.17	18	1.823	4.62	29	1.879
I understand the need for this change.	6.00	11	1.095	5.00	18	1.847	5.38	29	1.656
I feel the system will help improve my relationship with my patients.	5.64	11	1.027	3.78	18	2.045	4.55	29	1.882
This innovation will easily fit into my daily work routine.	5.91	11	1.136	3.72	18	1.776	4.48	29	1.939

Appendix E (Continued)

Table 36: Anxiety Levels

Survey Question	0-40			Over 40			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel comfortable with the new computer system.	5.27	11	1.348	4.17	18	1.654	4.59	29	1.615
I feel satisfied with the training I received regarding the new computer system.	5.27	11	1.348	4.78	18	1.555	4.97	29	1.476
I believe I will be able to effectively use the new computer system with minimal assistance on a day to day basis.	5.82	11	1.328	4.39	18	1.420	4.93	29	1.534
I am more likely to use the computer system after undergoing training than I was before.	5.45	11	1.368	4.78	18	1.665	5.59	29	1.452
I had the opportunity to ask as many questions as needed in training.	6.09	11	.944	5.28	18	1.638	6.03	29	1.210
The training was user-friendly.	6.18	11	.982	5.94	18	1.349	5.79	29	1.177
We have been given adequate time to prepare for the upcoming change to a paperless facility	6.18	11	.751	5.56	18	1.338	5.03	29	1.569

Appendix E (Continued)

Table 37: Confidence Levels

Survey Question	0-40			Over 40			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel satisfied with the training I received regarding the new computer system.	5.27	11	1.348	4.78	18	1.555	4.97	29	1.476
I believe I will be able to effectively use the new computer system with minimal assistance on a day to day basis.	5.82	11	1.328	4.39	18	1.420	4.93	29	1.534
I feel there was sufficient information exchanged to prepare me for this change.	5.45	11	1.128	4.78	18	1.114	5.03	29	1.149
Other employees could benefit from this training.	6.27	11	.786	5.67	18	1.328	5.90	29	1.175
The training I received was useful.	6.45	11	.688	5.44	18	1.723	5.83	29	1.490
I feel the training program effectively covered the information I needed to use the new software.	6.00	11	.894	5.00	18	1.283	5.38	29	1.237
I am more likely to use the computer system after undergoing training than I was before.	6.09	11	.944	5.28	18	1.638	5.59	29	1.452
The new program is user-friendly.	5.91	11	.831	4.83	18	1.618	5.24	29	1.455
This innovation will easily fit into my daily work routine.	5.64	11	1.027	3.78	18	2.045	4.48	29	1.939
I received appropriate feedback from the trainer to feel comfortable using the new computer system.	6.00	11	.775	5.39	18	1.243	5.62	29	1.115
How would you rate the new computer system overall?	5.45	11	1.368	4.61	18	1.420	4.93	29	1.438

Appendix E(Continued)

Occupation

Table 38: Understanding the Need for Change

Survey Question	Medical Staff			Other			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
The program will help improve the clinic's relationship with patients.	3.78	18	1.865	5.50	12	1.087	4.47	30	1.795
The clinic will benefit from being a paperless facility by improving patient satisfaction	4.00	18	2.114	5.58	12	.996	4.63	30	1.903
Patients will benefit from the clinic becoming a paperless facility	3.94	18	2.182	5.33	12	1.231	4.50	30	1.961
I understand the need for this change.	5.17	18	1.886	5.75	12	1.138	5.40	30	1.632
I feel the system will help improve my relationship with my patients.	4.00	18	2.223	5.42	12	1.311	4.60	30	1.868
This innovation will easily fit into my daily work routine.	4.06	18	2.014	5.33	12	.985	4.53	30	1.925

Table 39: Anxiety Levels

Survey Question	Medical Staff			Other			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel comfortable with the new computer system.	4.50	18	1.757	4.83	12	1.403	4.63	30	1.608
I feel satisfied with the training I received regarding the new computer system.	5.06	18	1.589	4.92	12	1.311	5.00	30	1.462
I believe I will be able to effectively use the new computer system with minimal assistance on a day to day basis.	4.72	18	1.447	5.33	12	1.614	4.97	30	1.520
I am more likely to use the computer system after undergoing training than I was before.	5.17	18	1.689	5.75	12	.866	5.60	30	1.429
I had the opportunity to ask as many questions as needed in training.	5.50	18	1.724	5.83	12	1.267	6.03	30	1.189
The training was user-friendly.	6.17	18	1.150	5.83	12	1.030	5.80	30	1.157
We have been given adequate time to prepare for the upcoming change to a paperless facility	5.78	18	1.263	4.92	12	1.379	5.07	30	1.552

Appendix E (Continued)

Table 40: Confidence Levels

Survey Question	Medical Staff`			Other			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel satisfied with the training I received regarding the new computer system.	5.06	18	1.589	4.92	12	1.311	5.00	30	1.462
I believe I will be able to effectively use the new computer system with minimal assistance on a day to day basis.	4.72	18	1.446	5.33	12	1.614	4.97	30	1.520
I feel there was sufficient information exchanged to prepare me for this change.	5.22	18	1.114	4.83	12	1.193	5.07	30	1.143
Other employees could benefit from this training.	5.89	18	1.323	5.92	12	.900	5.90	30	1.155
The training I received was useful.	5.78	18	1.734	5.92	12	.996	5.83	30	1.464
I feel the training program effectively covered the information I needed to use the new software.	5.39	18	1.290	5.42	12	1.165	5.40	30	1.221
I am more likely to use the computer system after undergoing training than I was before.	5.50	18	1.724	5.75	12	.866	5.60	30	1.429
The new program is user-friendly.	5.00	18	1.680	5.67	12	.888	5.27	30	1.437
This innovation will easily fit into my daily work routine.	4.00	18	2.223	5.33	12	.985	4.53	30	1.925
I received appropriate feedback from the trainer to feel comfortable using the new computer system.	5.67	18	1.237	5.58	12	.900	5.63	30	1.098
How would you rate the new computer system overall?	4.83	18	1.543	5.17	12	1.267	4.97	30	1.426

Appendix E (Continued)

Gender

Table 41: Understanding the Need for Change

Survey Question	Female			Male			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
The program will help improve the clinic's relationship with patients.	5.31	16	1.537	3.50	14	1.605	4.47	30	1.795
The clinic will benefit from being a paperless facility by improving patient satisfaction	5.44	16	1.504	3.71	14	1.939	4.63	30	1.903
Patients will benefit from the clinic becoming a paperless facility	5.19	16	1.601	3.71	14	2.091	4.50	30	1.961
I understand the need for this change.	5.88	16	1.025	4.86	14	2.033	5.40	30	1.632
I feel the system will help improve my relationship with my patients.	5.56	16	1.209	3.50	14	1.912	4.60	30	1.868
This innovation will easily fit into my daily work routine.	5.50	16	.966	3.43	14	2.174	4.53	30	1.925

Table 42: Anxiety

Survey Question	Female			Male			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel comfortable with the new computer system.	4.94	16	1.569	4.29	14	1.637	4.63	30	1.608
I feel satisfied with the training I received regarding the new computer system.	5.06	16	1.389	4.93	14	1.592	5.00	30	1.462
I believe I will be able to effectively use the new computer system with minimal assistance on a day to day basis.	5.44	16	1.504	4.43	14	1.399	4.97	30	1.520
We have been given adequate time to prepare for the upcoming change to a paperless facility	5.13	16	1.360	5.00	14	1.797	5.07	30	1.552
I am more likely to use the computer system after undergoing training than I was before.	5.88	16	.885	5.29	14	1.858	5.60	30	1.429
I had the opportunity to ask as many questions as needed in training.	5.94	16	1.181	6.14	14	1.231	6.03	30	1.189
The training was user-friendly.	5.88	16	.957	5.71	14	1.383	5.80	30	1.157

Appendix E (Continued)

Table 43: Confidence Levels

Survey Question	Female			Male			Total		
	Mean	N	Std. Deviation	Mean	N	Std. Deviation	Mean	N	Std. Deviation
I feel satisfied with the training I received regarding the new computer system.	5.06	16	1.389	4.93	14	1.592	5.00	30	1.462
I believe I will be able to effectively use the new computer system with minimal assistance on a day to day basis.	5.44	16	1.504	4.43	14	1.399	4.97	30	1.520
I feel there was sufficient information exchanged to prepare me for this change.	5.13	16	1.204	5.00	14	1.109	5.07	30	1.143
Other employees could benefit from this training.	6.00	16	.816	5.79	14	1.477	5.90	30	1.155
The training I received was useful.	6.06	16	.929	5.57	14	1.910	5.83	30	1.464
I feel the training program effectively covered the information I needed to use the new software.	5.50	16	1.155	5.29	14	1.326	5.40	30	1.221
I am more likely to use the computer system after undergoing training than I was before.	5.88	16	.885	5.29	14	1.858	5.60	30	1.429
The new program is user-friendly.	5.75	16	.856	4.71	14	1.773	5.27	30	1.437
This innovation will easily fit into my daily work routine.	5.50	16	.966	3.43	14	2.174	4.53	30	1.925
I received appropriate feedback from the trainer to feel comfortable using the new computer system.	5.69	16	.873	5.57	14	1.342	5.63	30	1.098
How would you rate the new computer system overall?	5.38	16	1.204	4.50	14	1.557	4.97	30	1.426

Appendix F

Independent Samples T-Tests

Table 44: Independent Samples Test by Age Group

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Anxiety Pre	Equal variances assumed	.294	.592	2.921	27	.007	1.25902	.43107	.37453	2.14351
	Equal variances not assumed			3.040	23.973	.006	1.25902	.41409	.40432	2.11371
Anxiety Post	Equal variances assumed	2.457	.129	1.889	27	.070	.76912	.40723	-.06644	1.60468
	Equal variances not assumed			2.115	26.985	.044	.76912	.36366	.02293	1.51531
Understanding Pre	Equal variances assumed	.958	.336	2.131	27	.042	1.26667	.59435	.04716	2.48617
	Equal variances not assumed			2.292	25.817	.030	1.26667	.55273	.13012	2.40321
Understanding Post	Equal variances assumed	1.591	.218	2.555	27	.017	1.43603	.56199	.28293	2.58912
	Equal variances not assumed			2.711	25.121	.012	1.43603	.52967	.34542	2.52663
Confidence Pre	Equal variances assumed	1.393	.248	3.330	27	.003	1.37273	.41220	.52696	2.21849
	Equal variances not assumed			3.678	26.782	.001	1.37273	.37321	.60667	2.13879
Confidence Post	Equal variances assumed	1.691	.204	2.366	27	.025	.94720	.40026	.12594	1.76846
	Equal variances not assumed			2.666	26.999	.013	.94720	.35522	.21834	1.67606

Table 45: Independent Samples Test by Occupation

			Levene's Test for Equality of Variances		t-test for Equality of Means						
										95% Confidence Interval of the Difference	
			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pre	Anxiety	Equal variances assumed	.383	.541	-2.563	28	.016	-1.09127	.42574	-1.96336	-.21918
		Equal variances not assumed			-2.642	26.018	.014	-1.09127	.41304	-1.94026	-.24228
Post	Anxiety	Equal variances assumed	3.632	.067	-.181	28	.858	-.07540	.41712	-.92982	.77902
		Equal variances not assumed			-.197	27.984	.845	-.07540	.38256	-.85906	.70827
Pre	Understanding	Equal variances assumed	4.518	.042	-4.025	28	.000	-1.97222	.48998	-2.97591	-.96853
		Equal variances not assumed			-4.652	24.579	.000	-1.97222	.42391	-2.84604	-1.09841
Post	Understanding	Equal variances assumed	8.133	.008	-2.414	28	.023	-1.32870	.55031	-2.45595	-.20145
		Equal variances not assumed			-2.739	26.265	.011	-1.32870	.48506	-2.32527	-.33214
Pre	Confidence	Equal variances assumed	1.294	.265	-3.318	28	.003	-1.31667	.39677	-2.12941	-.50393
		Equal variances not assumed			-3.536	27.703	.001	-1.31667	.37240	-2.07986	-.55348
Post	Confidence	Equal variances assumed	2.923	.098	-.600	28	.553	-.25253	.42095	-1.11481	.60976
		Equal variances not assumed			-.662	27.768	.514	-.25253	.38154	-1.03436	.52931

Appendix F (Continued)

Table 46: Independent Samples Test by Gender

			Levene's Test for Equality of Variances		t-test for Equality of Means						
										95% Confidence Interval of the Difference	
			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pre	Anxiety	Equal variances assumed	.528	.473	2.639	28	.013	1.09694	.41572	.24538	1.94850
		Equal variances not assumed			2.600	24.992	.015	1.09694	.42185	.22811	1.96576
Post	Anxiety	Equal variances assumed	1.241	.275	.871	28	.391	.35204	.40440	-.47634	1.18042
		Equal variances not assumed			.852	23.501	.403	.35204	.41304	-.50139	1.20547
Pre	Confidence	Equal variances assumed	1.821	.188	3.475	28	.002	1.33571	.38443	.54825	2.12318
		Equal variances not assumed			3.388	22.472	.003	1.33571	.39431	.51897	2.15246
Post	Confidence	Equal variances assumed	2.056	.163	1.567	28	.128	.62500	.39890	-.19210	1.44210
		Equal variances not assumed			1.518	20.990	.144	.62500	.41161	-.23101	1.48101
Pre	Understanding	Equal variances assumed	2.764	.108	4.497	28	.000	2.07143	.46068	1.12778	3.01508
		Equal variances not assumed			4.334	19.631	.000	2.07143	.47800	1.07313	3.06973
Post	Understanding	Equal variances assumed	4.012	.055	3.384	28	.002	1.69345	.50040	.66843	2.71847
		Equal variances not assumed			3.270	20.238	.004	1.69345	.51793	.61389	2.77301

Appendix G:

Informed Consent Social and Behavioral Sciences University of South Florida

The following information is being presented to help you decide whether or not you want to take part in a minimal risk research study. Please read this carefully. If you do not understand anything, ask the person in charge of the study.

Title of Study: Organizational Communication and Change: A case study on the implementation of an innovation at Florida Medical Clinic

Principal Investigator: Erika G. Llenza

Study Location(s): Florida Medical Clinic

You are being asked to participate to help gather information on the effects communication on organizational change efforts.

General Information about the Research Study

The purpose of this research study is to investigate the possible effects communication efforts have on the adoption or rejection of organizational change initiatives. Two survey questionnaires will be distributed before and after your scheduled training program.

Plan of Study

Each respondent will take part in a survey before and after the scheduled training program. The survey questionnaires will include a series of items to rate on a scale of 1 to 7 and a question and answer section. Each survey should take no longer than 20 minutes to complete.

Payment for Participation

You will not be paid for your participation in this study.

Benefits of Being a Part of this Research Study

By taking part in this research study you will be providing information that is of interest to many researchers and professional on the effects of communication efforts on organizational change initiatives. Your participation will provide further insight into an area of research that is continually developing.

Risks of Being a Part of this Research Study

There are no anticipated risks for participation in this research study.

Confidentiality of Your Records

Individual Responses : Individual responses to the survey will be anonymous and coded in a way to ensure respondent identity is not revealed. Only the researcher will have access to participant responses.

Summary Results: A summary of the results of this study will be provided to Florida Medical Clinic. The data obtained from you will be combined with data from others. The summary results will not include your name or any other information that would personally identify you in any way.

Volunteering to Be Part of this Research Study

Your decision to participate in this research study is completely voluntary. You are free to withdraw at any time.

Questions and Contacts

- If you have any questions about this research study, contact Erika G. Llenza at (813) 598-9988.

- If you have questions about your rights as a person who is taking part in a research study, you may contact the Division of Research Compliance of the University of South Florida at (813) 974-5638.

Consent to Take Part in This Research Study

By participating in this study I agree that:

- I have fully read or have had read and explained to me this informed consent form describing this research project.
- I have had the opportunity to question one of the persons in charge of this research and have received satisfactory answers.
- I understand that I am being asked to participate in research. I understand the risks and benefits, and I freely give my consent to participate in the research project outlined in this form, under the conditions indicated in it.
- I have been given a signed copy of this informed consent form, which is mine to keep.

_____ _____

Signature of Participant Printed Name of Participant Date

Investigator Statement

I have carefully explained to the subject the nature of the above research study. I hereby certify that to the best of my knowledge the subject signing this consent form understands the nature, demands, risks, and benefits involved in participating in this study.

_____ _____ _____

Signature of Investigator Printed Name of Investigator Date Of authorized research investigator designated by the Principal Investigator

Investigator Statement:

I certify that participants have been provided with an informed consent form that has been approved by the University of South Florida's Institutional Review Board and that explains the nature, demands, risks, and benefits involved in participating in this study. I further certify that a phone number has been provided in the event of additional questions.

_____ _____ _____

Signature of Investigator Printed Name of Investigator Date