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**TOWARDS A PARADIGM FOR TOTAL QUALITY MANAGEMENT
IN HEALTH CARE:**

A STUDY OF THREE CANADIAN HOSPITALS

SUZANNAH RADNAY

A Thesis

in

The Faculty

of

Commerce and Administration

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for the Degree of Master of Science in Administration at
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ABSTRACT

Towards a Paradigm for Total Quality Management in Health Care: A Study of Three Canadian Hospitals

Suzannah Radnay

Total Quality Management (TQM) has become something of a social movement in North American organizations over the last decade. Over the last few years, it has also had a tremendous impact on the management of health care organizations. Using a multiple case study method, this research examines TQM's implementation in health care organizations. It begins with research questions that ponder the unique circumstances of health care organizations and an hypothesized paradigm for TQM health care organizations that were derived from an extensive review of the literature. Data from focused interviews, participant observation and existing documents were used to compare the hypotheses to the TQM experiences of the three case hospitals. The qualitative results support the research questions and guide the development of the final paradigm. As hypothesized, all original TQM variables were used in the health care organizations, two new TQM variables were identified and TQM was found to be implemented by the health care organizations tectonically, in small incremental steps. The final paradigm details these findings. The research also lead to the development of a model for the stages of TQM change in a hospital and serves to strengthen TQM's construct validity. The implications of these findings for health care organizations, and for TQM theory and practice are discussed. Future research suggestions are also provided.

Dedicated to the memory of the 73 Israeli soldiers who were tragically killed on February 4, 1997, during the completion of this work.

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1.0 INTRODUCTION

In the last decade Total Quality Management (TQM) has become something of a social movement in North America (Hackman and Wageman, 1995). Despite the ubiquitousness of TQM in contemporary organizations and the widespread attention it has been given in the popular press, however, total quality still remains a hazy, ambiguous concept (Dean and Bowen, 1994; Harris, 1995) receiving mixed reviews from the popular press and the academic literature.

In an attempt to provide a more solid theoretical basis for TQM, the Academy of Management Review (summer, 1994), the Canadian Journal of Administrative Sciences (Spring, 1995), the California Management Review (Spring, 1995) and the Journal of Organizational Change Management (second issue 1994) devoted special editions to TQM theory development. These forums have demonstrated TQM's construct validity (Hackman and Wageman, 1995), have reported implementation results (Fleisher and Nickel, 1995; Mitki and Shani, 1995) and provide a clear path for future researchers to follow (Dean and Bowen, 1994; Hackman and Wageman, 1995; Spencer, 1994). Indeed, they have demonstrated TQM's credibility in academic thought and its applicability to contemporary organizations (Dean and Bowen, 1994).

Recent research also demonstrates that TQM's implementation in certain industries has different requirements and may be mitigated by unique circumstances (Fleisher and Nickel, 1995; Gustafson and Hundt, 1995; Kaldenberg and Gobeli, 1995; Mitki and Shani, 1995). Health care, public affairs and dentistry are three examples of industries the literature

Health care, public affairs and dentistry are three examples of industries the literature suggests may need to take into consideration variables and circumstances that the traditional TQM literature, developed for a manufacturing environment, does not consider. The aim of this research, therefore, was to determine whether TQM does have unique implications in non-manufacturing environments such as health care.

The research presented here begins with an in-depth literature review that discusses both traditional TQM tenets as well as the TQM advancements found in non-manufacturing organizations' (ie., health care) implementation attempts. The literature review will also emphasize the health care industry's evolution to TQM; discussing the health care industry's unique needs and circumstances, uncovering the need for a TQM paradigm in health care.

Five research questions were developed from the examination of the TQM and health care literatures culminating in a theoretical paradigm for a TQM health care organization. These research questions were examined in three case hospitals resulting in a new, empirical framework for a TQM organization, providing insight into the health care environment's unique situation. A discussion of the final framework leads to the development of a TQM Change Model and future research suggestions. This thesis will begin with the literature review, will present the research questions to be tested, present the methodology, summarize the results, demonstrate how the model is congruent with a cross case analysis and finally, yield relevant conclusions.

2.0 LITERATURE REVIEW

2.1 TQM Defined

Total Quality Management is a management philosophy that, while characterized by a common set of principles, practices and techniques (Dean and Bowen, 1994), tends to be examined by numerous authors from different perspectives (Kaltsounakis, 1995) such as human resource management (Crosby, 1989), culture (Juran, 1979) and systems (Deming, 1986). These perspectives come from the three main founding TQM philosophers: W. Edwards Deming, Joseph Juran and Phillip Crosby. While Deming has most likely had the greatest influence on TQM philosophy (Waldman, 1995), all three have shaped TQM theory and research into what we know it as today. Contemporary TQM authors such as Hackman and Wageman(1995), Olian and Rynes (1992) and Waldman (1994) base their work on these founders' teachings.

Deming (1986), considered to be the father of TQM, summarizes his philosophy in his fourteen management principles and seven deadly diseases. These include the systemic nature of organizations, management commitment and leadership, the need to reduce variation in organizational processes, removing barriers to employee participation to allow employee control over their own quality (ie: eliminating fear), continuous improvement of processes, statistical process control (SPC) and emphasizing the role of both internal and external customers and suppliers in the quality system. Juran (1989) focuses on production factors such as product design, quality audits and human resource development. Juran

defines quality as freedom from deficiencies and meeting customer needs (Heinzlmier, 1991). He emphasizes quality planning, product design, quality audits, and, like Deming (1986), the use of statistical tools to eliminate defects (Dean and Bowen, 1994; Waldman, 1995). Crosby (1979), another TQM founder, focuses on organizational factors such as cultural change, training and leadership. He also stresses the concept of zero defects and the continuous calculation of quality costs (Dean and Bowen, 1994; Heinzlmeir, 1991; Waldman, 1995).

There is no one common definition provided for TQM (Harris, 1995), however, its overarching goal and philosophy appears to be agreed upon (Hackman and Wageman, 1995). An assessment of the literature leads to the following definition which will be applied throughout this study: **TQM is a management system designed as a holistic, integrated, customer-focused approach aimed at continuously improving and optimizing the quality of an organization's processes, products, services and organizational outcomes** (Dean and Bowen, 1994; Harris, 1995; Shashkin and Kiser, 1993; Waldman, 1995). Similarly, Waldman (1995) defines TQM as a system that is "designed as an integrated, customer-focused approach to improve the quality of an organization's processes, products and services". Shashkin and Kiser (1993) offer the following definition for TQM as well:

TQM means that the organization's culture is defined by and supports the constant attainment of customer satisfaction through an integrated system of tools, techniques and training. This involves the continuous improvement of

organizational processes, resulting in high quality products and services (p.39).

TQM encompasses a vast spectrum of topics and approaches and is recently being explained as an eclectic management paradigm or a grafting of many schools of management and many disciplines (Spencer, 1994). Most importantly, TQM represents a shift in thinking and in organizational culture (Shashkin and Kiser, 1993; Waldman, 1995).

2.2 TQM Variables

Given TQM's wide spectrum, many contemporary TQM authors have come up with lists of TQM's key components, some lists more exhaustive than others. While TQM is viewed through different perspectives, most of what is written about TQM is based on a common set or subset of these key components (Harris, 1995) allowing for the derivation of a comprehensive list of TQM's key elements.

Harris' (1995) empirical analysis of TQM's key elements provides the starting point for the list of variables derived for purposes of this study. Harris (1995) systematically identified a core set of principles: continuous improvement of processes, customer focus, teamwork, top management commitment, education and training. These five critical aspects will be used as variables in the present study as well. The Baldrige award examination categories are also often used as criteria to study TQM practices (Kaldenberg and Gabeli, 1995; Galperin, 1994; Seraph, Benson and Schroeder, 1989). The Malcolm Baldrige National Quality

Award was established in 1985 by the U.S. government in collaboration with corporate leaders interested in promoting quality oriented management practices. The variables used in the Baldrige award criteria will be included in the list of variables for this study as well. The following are the Baldrige categories: leadership, information and analysis, strategic planning, human resource utilization, quality assurance, quality results and customer satisfaction.

Finally, Waldman's (1995) analysis of the TQM literature provides an almost exhaustive list of TQM key elements and will also be used to derive the list for this study. The variables Waldman found include:

- 1. a broad definition of quality as meeting customer expectations at the least cost, which encompasses all phases of the design, production, and delivery of a product/service;*
- 2. upper management commitment to place quality as a top priority;*
- 3. the institution of leadership practices oriented toward TQM values and vision;*
- 4. an orientation towards managing-by-facts, including the prolific use of scientific and problem-solving techniques, such as statistical process control;*
- 5. striving continually to improve employee capabilities and work processes through such practices as training and benchmarking;*
- 6. involvement of all organizational members in cooperative, team-based efforts to achieve quality improvement efforts;*
- 7. a prominent role for the quality department in steering and facilitating the quality improvement efforts of others;*
- 8. attempts to get external suppliers and customers involved in TQM efforts;*
- 9. the development of a quality culture (p. 92).*

Appendix A lists all the key elements mentioned by the leading contemporary TQM authors.

The specific variables under examination in this study are related to the critical components identified above. They are explained in greater detail below.

System perspective

The first important element in a TQM organization is a *system's perspective*. The system's perspective emphasises a holistic, integrative view of the organization (Harris, 1995; Olian and Rynes, 1992; Waldman, 1994). Deming (1986) emphasises the systemic nature of organizations, where each factor in an organization interacts with each other so that no function or individual works in a vacuum. Instead, workers provide both input to the next function down the line while also receiving output from the previous function up the line. Deming (1986) explains that workers' performance is largely a function of the system rather than of individual workers, explaining that 85% of performance variance is due to system factors while only 15% is due to person factors.

Customer Focus

Identifying and meeting each customer's needs is at the core of TQM (Dean and Bowen, 1994; Harris, 1995; Hackman and Wageman, 1995; Olian and Rynes, 1993; Waldman, 1995). The fundamental assumption of TQM is planning for the design and delivery of products and services that fulfil the needs of customers (Dean and Bowen, 1994, p. 34). As Feigenbaum (1991, p.) explains: "Quality is what the customer says it is...not what an engineer or marketer or general manager says it is. If you want to find out about your

quality, go out and ask your customer -- nobody can compress in a market research statistic the buyer frustration from a water leak in a new car".

TQM authors stress the importance of continuously measuring, meeting and exceeding customer needs (Dean and Bowen, 1994; Harris, 1995; Hackman and Wageman, 1995; Olian and Rynes, 1993; Waldman, 1995). In the service industry in particular, customer satisfaction has become an explicit and visible focus. As Dean and Bowen (1995) note:

It is difficult to ignore the role of these customers in organizational analysis because they are often physically present within organizational boundaries (e.g., restaurant diners, hospital patients), even co-producing the services they consume... The intangibility of many services... also makes quality measurement dependent on customer's perceptions, because conformance to physical specifications is less measurable than with manufactured goods (p. 409).

TQM views customers as both internal and external to the organization and requires explicit identification and measurement of all customer requirements (Deming, 1986). Following Deming's (1986) systems perspective, the next process down the line is considered the internal customer. Therefore, internal customer (ie., employee) satisfaction is to be measured along with external customer satisfaction as it plays a significant role in the process of producing quality goods and services.

Upper Management Commitment

Another important TQM variable is *upper management commitment*. As Hackman and Wageman (1995, p. 311) explain, quality is viewed as ultimately and inescapably the responsibility of top management. Deming (1986), Juran (1974) and Ishikawa (1985) explain that an organizations' systems are created by their managers and thusly view employees' work effectiveness as a direct function of the systems created by these managers. Therefore, upper management commitment to place quality as a top priority is essential to TQM.

Quality Department

The *quality department* of an organization should play a prominent role in steering and facilitating the quality improvement effort (Waldman, 1995). The role of the quality department is not given much attention in the traditional TQM literature, but as the section on TQM in health care will demonstrate, plays an essential role in the TQM health care arena.

Involvement of all organizational members

In order to create a quality culture *all organizational members* must be involved in the quality improvement process (Waldman, 1995). All, and not some, organizational members must be involved since all organizational members comprise the system that makes up the organization.

Quality Culture

The development of a *quality culture* which includes employee empowerment, driving out fear, rewarding employees and recognizing employees is another critical component of TQM (Dean and Bowen, 1994; Hackman and Wageman, 1995; Olian and Rynes, 1992; Waldman, 1995). Essential to developing a quality culture is employee empowerment. As Juran explains: "the human being exhibits an instinctive drive for precision, beauty and perfection. When unrestrained by economics, this drive has created the art treasures of the ages" (1974:4.54).

Deming suggests that in order to create a quality culture, organizations must drive out fear by eliminating practices such as punishment for poor performance and appraisal systems that involve a comparative evaluation of employees. Crosby (1988) explains, "What we are talking about is a fundamental shift from viewing employees as workers who need to be prodded, to viewing them as individuals who want to do excellent work and contribute to the well-being of their companies" (p. 12).

Teamwork

Cooperative, team-based efforts are required to support a quality improvement endeavour. Deming (1986) and Juran (1989) both insist on the use of cross-functional teams to address quality problems. Juran (1989) refers to such teams as the "steering arm" of a quality effort while Deming (1986) and Ishikawa (1985) take their use much further by requiring other

cross-functional teams to diagnose the causes of problems identified by the steering arm and to develop and test possible solutions. They suggest that these teams be either temporary task forces or constant organizational entities. Since top management support is said to be essential to TQM, these teams should include department heads as team members to ensure top management support and commitment to team decisions (Deming, 1986; Ishikawa, 1985; Hackman and Wageman, 1995).

Management by Fact

Another one of Deming's (1986) assertions is that the production of quality products and services is not merely less costly but is absolutely essential to long-term organizational survival. Following this logic, Hackman and Wageman (1995) stress the assumption that the cost of poor quality such as inspection, rework and lost customers is greater than the costs of developing processes that produce high quality goods and services.

According to Deming, uncontrolled variance in processes or outcomes is the primary cause of poor quality and therefore process variance must be analyzed and controlled. Employees will only be able to take the appropriate steps towards improving work processes once the root causes of variability are identified. Contemporary authors such as Hackman and Wageman (1995) refer to this as management by fact: the use of systematically collecting data, the use of statistics and testing solutions by experiment in order to identify and eliminate the root causes of poor quality. Scientific methods such as control charts, pareto

analysis and cost-of-quality analysis are to be used in a TQM organization to identify points of high leverage for performance improvement. The use of process management heuristics such as flowcharts, brainstorming and cause and effect (otherwise known as fishbone or Ishikawa) diagram are essential in enhancing team effectiveness.

Continuous Improvement

Striving to continually improve employee capabilities and work processes is another critical variable in a TQM organization. In a TQM organization employees are always striving to continually improve processes setting new improvement goals as each previous goal is achieved.

Training and Education

To foster a TQM culture, management must train employees to assess, analyze and improve work processes (Hackman and Wageman, 1995). Training and education play a critical role in the TQM organization, especially during the implementation stages (Kaltsounakis, 1995).

Formal quality training has been found to be the most common technique for initiating and sustaining employee involvement and thusly helping to create a TQM culture (Olian and Rynes, 1991, p. 310).

A fundamental premise of TQM philosophy is that the people who actually perform the jobs are in the best position to understand them. Thus, more improvements will occur when

frontline employees are empowered to make them. However, a variety of TQM training and education must be in place before workers who are not accustomed to making decisions (or authorized to do so) recognize problems, identify faulty processes and propose solutions (Olian and Rynes, 1991). Training is required when undertaking a quality effort in order to teach organizational members how to think about quality (Juran, 1986, p. 23), to foster an understanding of quality principles and objectives and to develop the skills required to fulfil quality directives (Blackburn and Rosen, 1993, p. 31).

Supplier Partnerships

The assumption that the costs associated with poor quality (ie: rework) are higher than the cost of high quality provides the basis for Deming (1986), Hackman and Wageman, (1995) and Waldman's (1995) emphasis on the creation of supplier partnerships: building quality into the system from the very beginning by selecting quality vendors. Vendors are to be selected on the basis of quality rather than on the basis of price. Attempts to get external suppliers involved in the quality improvement effort is therefore required in a TQM organization (Hackman and Wageman, 1995; Waldman, 1995).

These are the eleven variables associated with TQM organizations which are examined in the present study. These variables are listed in appendix B and are summarized here as follows:

1. (SP) **System's Perspective (Harris, 1995; Olian and Rynes, 1992; Waldman, 1994).**
2. (CF) **Customer Focus (Dean and Bowen, 1994; Hackman and Wageman, 1995; Olian and Rynes, 1992; Waldman, 1995).**
3. (UMC) **Upper Management Commitment (Dean and Bowen, 1994; Hackman and Wageman, 1995; Olian and Rynes, 1992; Waldman, 1995).**
4. (QD) **A prominent role for the QUALITY DEPARTMENT in steering and facilitating the quality improvement effort (Waldman, 1995).**
5. (ALL) **Involvement of ALL ORGANIZATIONAL MEMBERS in the quality improvement efforts (Waldman, 1995).**
6. (CUL) **The development of a QUALITY CULTURE (Dean and Bowen, 1994; Hackman and Wageman, 1995; Olian and Rynes, 1992; Waldman, 1995).**
7. (TEM) **TEAMWORK (Dean and Bowen, 1994; Hackman and Wageman, 1995; Harris, 1995; Olian and Rynes, 1992; Waldman, 1995).**
8. (MF) **An orientation towards Management by Fact (Dean and Bowen, 1994; Hackman and Wageman, 1995; Olian and Rynes, 1992; Waldman, 1995).**
9. (CI) **Striving to CONTINUALLY IMPROVE employee capabilities and work processes (Dean and Bowen, 1994; Harris, 1995; Waldman, 1995).**
10. (T&E) **Training and Education (Harris, 1995; Olian and Rynes, 1992; Waldman, 1995).**
11. (SUP) **Attempts to get external SUPPLIERS involved in the quality improvement effort (Hackman and Wageman, 1995; Waldman, 1995).**

2.3 TQM in Health Care

The goal of this research is to suggest a framework for applying TQM to health care. A review of TQM has been provided. What ensues is a review of the health care environment and a theoretical explanation of the TQM variables in the health care environment.

In no other industry is the issue of quality more pressing than in health care. Unlike in manufacturing or traditional business settings, the implications of poor quality in health care are severe - they have a grave impact on an individual's well-being. Medication errors, nosocomial infections, patient falls, runaways and staff injuries are only a few examples of the adverse affects of poor quality. Poor quality can also lead to unnecessary, inaccurate or lost lab and x-ray tests, a lack of teamwork, a bad reputation for the hospital and can also result in hurt or humiliated patients, misdiagnosis and, in the worst case, death (Milakovich, 1991).

While quality is a pressing issue in health care, health care executives today also struggle with a lack of resources, are faced with increasing government regulation, government budget cuts, downsizing, hospital closures and more stringent accreditation standards than ever before (Milakovich, 1991; Health Canada, 1993). Moreover, Canadian health care costs account for 10 percent of the Canadian gross domestic product, placing Canada's spending on health care as a proportion of the GDP the second-highest among the industrialized nations. The US's spending on health care is similar, accounting for 13.7

percent of their GDP (Bellini, 1995) making quality and the costs associated with an effective quality program a difficult priority for health care executives to maintain.

Inefficiencies are clearly compromising the survival of the Canadian health network (Health Canada, 1993). Strategies with a quality vision offer the promise of saving and improving a system which is rapidly becoming too costly to maintain (Chang, 1994). There is a "collective and deeply felt concern" that the present health care system needs urgent reform (Canadian Council on Health Facilities Accreditation, 1993). Organizations have emerged to meet this growing demand for quality in health care. In the U.S., the Health Care Institute, the Health Care Forum and George Washington University are a few. As well, the Joint Commission on Accreditation of Health Care organizations, which accredits 90% of all U.S. hospitals, placed its 1993 agenda for change within the context of TQM (Zablocki, 1993).

In Canada, The Canadian Council on Health Services Accreditation (Council) has focused its 1995 accreditation standards on a "Client Centred Approach" based on a philosophy of continuous quality improvement (Thomas, 1995). Indeed, the movement towards CQI in health care is in place and Canadian hospitals have no choice but to follow CQI "standards" or else they risk losing their accreditation.

In light of Council's new standards, many Canadian hospitals are seriously examining quality issues and devoting significant time and resources to the quality movement (Thomas, 1995). Research on Total Quality Management, however, demonstrates that implementing TQM is not simple and that failures abound. In fact, TQM failures in industry greatly outnumber their successes. The rate for TQM efforts in industry to not meet organizational expectations has been estimated to be as high as 75 per cent (Spector and Beer, 1994).

Due to the new 1995 standards, acute care hospitals have no choice but to attempt TQM or else they risk losing their accreditation. Unfortunately, specific research on TQM in health care to date is sparse and limited to only anecdotal information (eg, Kalunzy, 1990; Materna and Roth, 1992; Mclaughlin and Kalunzy, 1990; Milakovich, 1991; Sahney and Warden, 1991). Health care organizations are therefore put to a very difficult task. They must implement a new management strategy, one that often represents a major paradigm shift for hospital workers (McLaughlin and Kalunzy, 1990), without the empirical support or guidelines on how to do so. The aim of the research presented here is to begin to fill this empirical vacuum. The following section, the Quality Improvement Movement in Health Care describes the context within which TQM in health care takes place.

The Quality Improvement Movement in Health Care

A pronounced change in the management of contemporary hospitals has been seen in the shifting role of their quality departments over the last few years. Until recently Canadian hospitals did not practice TQM, but rather Quality Assurance (QA). Quality Assurance involved developing and maintaining methods to ensure that processes work as they were designed and that acceptable levels of performance were achieved (Thompson, 1993). QA departments were solely responsible for handling issues such as patient complaints, injuries and mistakes. The end result of a QA investigation of problems traditionally would have been to blame an individual worker or department for the problem.

QA often consisted of risk management and utilization management. The QA department was mainly reactive rather than proactive and its main responsibilities were external quality regulatory compliance (such as complying to accreditation standards), external quality reporting requirements, clinical risk management, infection surveillance and control, and patient relations/complaint management (Thompson, 1993). QA departments typically consisted of managers who were completely isolated from the physicians, nurses and technicians they monitored. There were many functions that weren't integrated with the QA department such as discharge and admissions planning, medical staff services, medical record services, information services and nursing case management. Traditional QA practices also focused on individual accountability for events perceived to occur in vacuums. In many ways, these traditional practices contrast the TQM philosophy.

In the past few years hospitals have shifted to what's referred to as either Continuous Improvement (CI) or Quality Improvement (QI) or Continuous Quality Improvement (CQI) in the health care industry. QI is the effort to raise the level of performance in hospital processes (Thompson, 1993). It is a proactive approach to quality assurance that concentrates on teams and processes rather than the traditional emphasis on individual responsibility for isolated events. QI involves the development of cross-functional quality improvement teams who are supported by top management as well as by outside specialists who can provide them with training. Quality improvement is defined as:

An organizational philosophy that seeks to meet clients' needs and exceed expectations, with a minimum of effort, rework and waste, by utilizing a structured process that selectively identifies and improves all aspects of care and service on an ongoing basis. (Berwick and Plsek, 1992, p. 12).

The health care industry often uses the term Continuous Quality Improvement (CQI) instead of TQM, CQI meaning the same thing as TQM.

Whether driven by the need to reduce health care costs, improve processes or comply with new accreditation standards, virtually all North American hospitals today are incorporating CQI principles and practices. The following section will discuss the TQM variables with respect to the health care environment.

2.4 TOM Variables in Health Care

To gain an understanding of what TQM means in a health care environment, the 11 variables under examination in this study will now be reviewed with respect to the health care environment.

System Perspective

Historically, hospitals represented "professional bureaucracies" (Mintzberg, 1979) characterized by decentralized decision making, professional (physician) autonomy (representing autonomous decision making for the physician), and the presence of artificial barriers between doctors, nurses, technicians and staff workers (Core, 1978; Godfrey et al., 1992). TQM principles on the other hand, require breaking down barriers and enhancing interdepartmental cooperation (Deming, 1986; Shashkin and Kiser, 1993).

As a result of the historic poor communication between departments, hospital workers have a tendency to blame individuals or departments for any problems or misunderstandings that may occur. The prevailing assumption in health care is that a problem is the result of one individual's error rather than of the larger structure or system within which the individual functions (McLaughlin and Kalunzy, 1990). Physicians are trained and accustomed to making individual judgement calls and working autonomously, while TQM places primary emphasis on the system rather than on the individual (Deming, 1986). With TQM, if a problem occurs, emphasis is placed on the process and not the individual (McLaughlin and

Kalunzy, 1990). Implementing TQM in a hospital, therefore, requires a shift in emphasis from individual accountability to system responsibility.

Customer Focus

In Canadian health care the most pronounced change has been seen with the Canadian Council on Health Services Accreditation's new 1995 standards that are based on a "client-centred" approach to care (Thomas, 1995). Council states, in fact, that "the importance of meeting patients needs and exceeding their expectations was the driving force that compelled the Canadian Council...to refocus the accreditation program" (Thomas, 1995, p.1).

Health care organizations are being encouraged to adapt a customer focus philosophy consistent with TQM. However, such a focus causes a dilemma in the health care industry as it conflicts with the traditional "professional autonomy" ethic that has dominated the health care industry: "one of the greatest temptations is to believe that because of years of experience in the business, we know what the customer wants and needs even better than the customer does" (Thomas, 1995, p.1). In fact, this temptation is experienced in health care as many health care professionals don't believe that the customer has the proper technical knowledge to judge quality of care received (Hall, 1995; Lewis, 1994). In today's CQI environment, however, patient satisfaction is a "quality indicator" that is a fundamental

aspect of any QI effort. In addition, many researchers now view patient satisfaction as a component of quality care (Hall, 1995).

Upper Management Commitment

In a TQM organization, quality is viewed as ultimately and inescapably the responsibility of top management (Hackman and Wagemen, 1995). In a health care environment, this means that top management can no longer pass the responsibility of standards compliance, patient complaints, injuries and mistakes onto QA departments. Top management must champion the effort to recognize areas in need of improvements and recognize the institution as holistic rather than fragmented, assuring the necessary resources are allocated to affect a TQM system.

Quality Department

The role of the quality department in hospitals expands as a result of the TQM effort. With TQM, the quality department is no longer isolated. Instead, it is integrated with other departments. The quality department should play the role of facilitator and trainer of TQM in the hospital. The quality department alone should no longer be responsible for quality as the role of the quality department is not to champion the QI effort, unless the quality department consists of top management.

TQM also calls for a fundamental shift in perspectives from the traditional QA approach. As QA was reactive, focusing on individual accountability for events perceived to occur in vacuums, QA is a sharp contrast to the TQM "systems perspective". With TQM, QA departments would no longer be alone in their efforts to comply with accreditation standards. Instead, the hospital has to be seen as a "connected network of interdependent processes" (Milakovich, 1991). QA departments are the facilitators of the CQI efforts, an effort focused on processes that include all members of the institution.

Involvement of ALL organizational members

All members of a TQM organization are seen as interconnected, equally affecting the processes in the system. This variable requires a shift in thinking for health care employees.

Taking into account all organizational members' roles and concerns is a shift in thinking for an organization that once experienced barriers between departments and poor communication or understanding between departments. Staff acceptance is considered critical to the success of the program as the hospital rank-and-file staff are the experts in evaluating the processes improved and provide significant contributions to the TQM effort (Spoon et al, 1995).

Quality Culture

Developing a quality culture presents health care organizations with a challenge. As noted with the other variables, due to health care's traditional structure of professional

bureaucracies, professional autonomy, individual accountability, etc, a quality culture represents a fundamental paradigm shift. A quality culture requires an atmosphere where all employees are empowered, not just the physicians. A quality culture requires the driving out of fear (ie: eliminating individual accountability) and emphasising work processes and systems rather than relying heavily on physician competency.

Teamwork

A key to developing the needed dialogue to experience the needed cultural change is to organize quality improvement teams. TQM's emphasis on cross-functional quality improvement teams requires another fundamental shift in hospital functioning. Traditionally, doctors, nurses and other support staff rarely communicated with one another (Core, 1978). All workers and departments tended to work for themselves rather than for the organization. This led to individual subgroups applying "quick fixes" instead of working with other subgroups towards the long-term problem solving that TQM stresses. TQM's call for cross-functional teams allows for dialogues rarely experienced in health care before. Due to the individualistic, professional nature of the organization, initial resistance would be expected as again, such teamwork requires a fundamental paradigm shift for health care workers.

Management by Fact

TQM's tenet, management by fact, which is the use of systematically collecting data, using statistics and testing solutions (hence its scientific nature) is one that is instinctive to most members of a health care organization. Doctors and nurses are already familiar with the scientific methods of SPC, easily facilitating acceptance of its use in hospitals (Fried, 1992; Spoon et al, 1995). Indeed, Florence Nightingale founded a department of statistics in the mid-nineteenth century as she worked in the Barrack Hospital at Scutari (Spoon, et al, 1995).

The use of management by fact facilitates physician buy-in to the CQI process (Reeves et al, 1995). Physicians are results oriented (rather than theory oriented) and focused on patient care. To gain acceptance of the CQI process physicians have to understand how CQI impacts their practice patterns. Physicians feel comfortable with data driven processes and changes based on the data since they are trained to analyze data and use data everyday in treating patients (Reeves et al, 1995). However, the tools TQM provides such as pareaeto charts, control charts and flow charts, while following scientific principles, may be foreign to health care professionals. Thus a shift in processes and training is required.

Continuous Improvement

Striving to continuously improve work processes and employee capabilities is also a fundamental component of physician, nurses and other health care workers' work ethic.

This tenet should therefore be easily understood and accepted in a health care environment.

Improvements never occur in a static environment. Diligent efforts must be made to continually measure, give feedback provide educational opportunities, and to set new goals (Reeves, et al, 1995).

Training and Education

Training and educating employees is already a fundamental aspect of a health care organization (Spoon et al, 1995). In a TQM hospital, the emphasis, though, would have to be on training TQM tools and philosophy, especially in the implementation stages (Kaltsounakis, 1995).

Suppliers

Finally, building quality into the system from the very beginning by selecting quality vendors is quite complex when applied to health care. First, the pressing need in health care today is to drive down costs (Kaltsounakis, 1995; Zapka et al, 1995). A policy of selecting vendors on the basis of quality rather than on the basis of cost would appear to undermine the effort to reduce costs. A strong acceptance of the TQM philosophy, reinforced by the belief that quality, in the long run, is the best way to reduce costs, is therefore required in order to gain acceptance of this variable. Such an understanding again requires a shift in thinking and in organizational culture.

In addition, there are additional elements that are viewed as suppliers to the health care process. The health of the patient, the hospital Board of Directors, hospital Volunteers in the forms of hospital workers or volunteer accreditation boards, and the government who set standards, rules and regulations are now all being added to the "extended health care organanizational model" (Eskildson and Yates, 1992; Milakovich, 1991). All are considered suppliers who must form partnerships with health care organizations. For example, the patient's age as well as other health factors are critical elements in a patient's recovery rate (Zapka et al, 1995). Partnerships with the community at large, through community awareness programs (ie:, how to eat for a healthy heart or seat belt awareness) are some ways hospitals acknowledge the patient as a partner and work on improving the quality of this partner (Eskildson and Yates, 1992).

The above section explains, therefore, the role the eleven TQM variables play in a health care setting. The following section will now discuss the present study's research questions.

3.0 RESEARCH QUESTIONS

This section discusses the research questions this study examines. The questions were derived from the literature review discussed above.

3.1 Research Question #1

As the previous section demonstrates, a CQI environment in a hospital is quite distinct from the traditional health care environment, requiring a shift in organizational culture, structure and processes (Milakovich, 1991). As a result, some observers and practitioners question TQM's usefulness, especially in organizational areas notably dissimilar from those historically targeted by the majority of TQM scholarship and practice (Fleisher and Nickel, 1995). Gryna (1988) points out that many "are wondering what TQM means in their activities and what they must do that is different" (p.21.2).

Indeed, health care before the CQI movement was notably dissimilar from the majority of TQM scholarship, justifying much of the resistance and scepticism surrounding TQM's implementation in health care. How TQM is implemented, whether health care organizations can adjust to TQM and whether it is followed according to all its tenets has not yet been addressed in the TQM or health care literatures. All that is known is that the majority of Canadian health care organizations are involved in a QI effort (Thomas, 1995).

The TQM variables found in the literature (appendix B) evolved from research on manufacturing organizations. However, without systematic research we have no way of knowing whether these variables apply to the health care industry as well. Research question #1 is designed to help determine whether the variables found in the generic

TQM literature are indeed used in a TQM health care environment - *Research Question 1: To confirm which critical TQM variables are applied in "TQM" health care organizations.*

The critical variables of TQM in health care may consist of the same variables found in industry, may combine some variables with others not found in industry, or may be quite different from those found in industry. As we do not yet know whether TQM in health care does follow TQM in industry's standards, but we do know that many of TQM's tenets oppose those of traditional health care organizations, research determining which TQM variables successful TQM hospitals adopt is in great need.

This research question, along with the others that are explained next, will be addressed further in the methodology section of this paper and will be discussed and analyzed in the Results section of this paper.

3.2 Research Questions #2 and #3

Given the differences between traditional health care and TQM tenets, specific barriers to implementing TQM in health care are bound to arise. Indeed, research examining TQM in non-manufacturing organizations uncovered specific barriers as well as facilitators of TQM implementations (Fleisher and Nickel, 1995; Kaldenberg and Goble, 1995).

Uncovering the health care specific barriers and facilitators will be part of the process for building a framework for TQM in health care.

Recent research by Fleisher and Nickel (1995) addresses the issue of TQM facilitators and inhibitors in a non-manufacturing organization, public affairs. Through the use of semi-structured interviews they discovered many barriers to TQM's full implementation in public affairs such as: a high degree of scepticism about TQM, difficulty in devoting continual attention to TQM initiatives, a resistance to "such a drastically different managerial paradigm" (p. 124), lack of TQM training, no TQM champion, and a lack of benchmark organizations. Their findings raise questions about TQM in general and its applicability in public affairs or other staff-driven units/organizations (p. 125).

Other researchers, Kaldenberg and Gobeli (1995) examined the effectiveness of TQM in another non-manufacturing industry, dental practices. They came up with some barriers and facilitators to TQM's effective implementation as well. Their study uncovered that dentists, like other health care professionals (Milakovich, 1991), are most concerned with quality assurance and the traditional health care model. Dentists, like other health care professionals, tend to see themselves, rather than the patient, as knowing what is in the patient's best interest (Kaldenberg and Gobeli, 1995).

Such findings demonstrate that the professional authority ethic of traditional health care and the customer satisfaction principle of TQM are at odds with one another. Kaldenberg and Goble's (1995) study found a specific barrier to implementing TQM in health care: professional autonomy. As they acknowledge, more in-depth, exploratory research is required in order to determine TQM in health care's unique needs. The need for more in-depth exploratory research on TQM in health care played a major factor in the design of the present research study, leading to the following two research questions.

As the discussion on TQM variables in health care demonstrates, many of TQM's tenets appear to be at odds with traditional health care management; while on the other hand, some also appear to be in line with the traditional health care work ethic. The following research questions are therefore aimed at determining whether traditional health care's structure causes impediments to TQM's adaptation and successful implementation in health care. Thus we have, *Research Question # 2: To determine which TQM variables act as barriers to TQM implementations in health care* and conversely, *Research Question #3: To determine which TQM variables act as facilitators to TQM implementations in health care.*

3.3 Research Question #4

Some research suggests that a major barrier to TQM's successful implementation is the psychological adjustments major paradigm shifts such as TQM cause organizational

members to undergo (Reger et al, 1994). TQM's successful implementation frequently results in a paradigm shift (Shashkin and Kiser, 1995; Waldman, 1995) that may bring into question members' most basic assumptions about the nature of the organization (Blackburn and Rosen, 1993; Reger et al, 1994).

TQM in health care indeed represents a major management paradigm shift - from QA to TQM. This is seen in the previous section when TQM variables were compared to the traditional health care organization. As The Joint Commission on Quality Improvement (1993) explains: "The shift from compliance to continuous improvement requires a bridge, empowerment, by which all employees can contribute their intelligence, knowledge and experience in the service of full circle thinking. (p. 222)". There is an inherent paradox here: while a cultural shift is required in order to affect a QI effort in health care, Reger et al (1994) explain that drastic cultural shifts impede TQM's successful implementation. Reger et al (1994) provide cognitive explanations for why some paradigm shifts are hard for organization members to accept. These explanations offer solutions to the paradox.

Dynamic Reframing Theory

One cognitive explanation for why paradigm shifts are difficult for organizational members to accept is dynamic reframing theory (Reger et al, 1995). In dynamic reframing theory, individuals in organizations are said to hold different sets of organizational

identity: current organizational identity and ideal organizational identity. Only when there is a significant difference between these two identities, called an identity gap, does an individual accept that change is required. When there is not a significant difference between the two, change will be resisted. Reger et al (1995) theorize that organizational members who perceive a close correspondence between current and ideal identity will perceive change as unnecessary because they believe that the organization's current state is sufficiently aligned with the ideal.

In contrast, a widened identity gap is a source of organizational stress, which creates pressure to close the gap, pressure for change. However, too wide a gap can be detrimental to implementing change because members may believe that the ideal is unattainable. Too wide an identity gap therefore may cause organizational inertia as well.

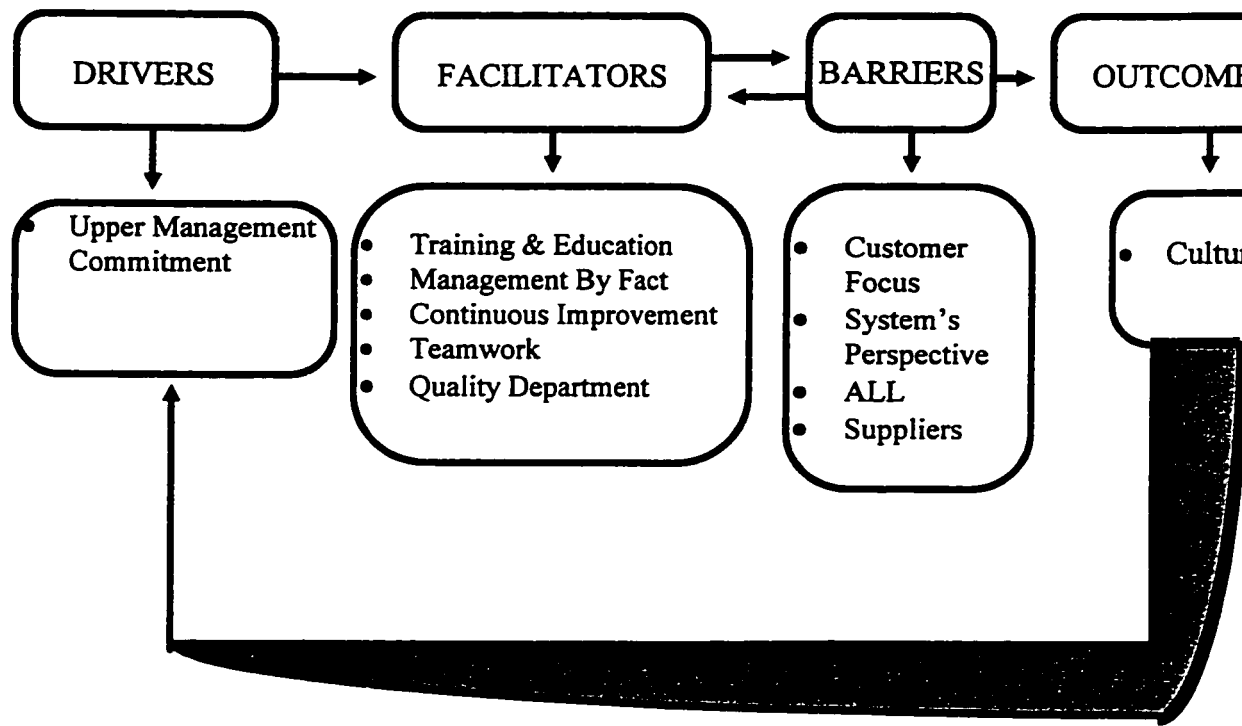
Reger et al (1995) propose the following as a means of overcoming such resistance and to gain acceptance of change: "Tectonic implementation of fundamental change will have a higher probability of success than either incremental or synoptic implementation" (p. 577).

Reger et al (1995) argue that tectonic change provides an intermediate level whereby change will be perceived as sufficiently large to overcome cognitive inertia, but not so great that it overwhelms the organization. They invoke an earthquake analogy to explain that "a great earthquake, like synoptic change, relieves much stress but results in major,

undesirable destruction. A series of mid-range changes may therefore be most effective in implementing radical reposition" (p.577) such as TQM. It is suggested here therefore that effective TQM change will be brought about in a health care organization tectonically, through a series of mid-range changes large enough to overcome cognitive inertia but not so large that they overwhelm the hospital. This leads to the following research question. **Research question #4: *Effective TQM change in a health care organization is brought about tectonically.*** Indeed, past research on TQM in health care attests to this hypothesis. Research has demonstrated that examples of successful TQM processes in a hospital assist in obtaining acceptance by other members of the health care teams, slowly pushing TQM through the organization (Spoon et al, 1995).

The following paradigm for TQM in a health care organization is proposed based on the above four research questions. The paradigm provides a theoretical framework that pulls together the current literature on TQM in health care and the above four research questions. Its intent is to provide a basis for more systematic, empirical analysis and concrete theory development.

3.4 Proposed Framework



A series of mid-range, tectonic changes as suggested by Reger et al (1995) describes the successful TQM implementation process hypothesized in this study. The tectonic changes suggested here consists of TQM variables categorized as either a driver, a facilitator, a barrier or an outcome, variables that interact and intervene to develop a TQM organization. The model presented above is similar to a "force-field analysis" as

developed by Levin (1951) that is used in developing change strategies. Force-field analysis evaluate the forces driving change and the forces resisting change.

Driver

First, the driver, upper management commitment (UMC), is the driving force behind any TQM effort, health care included. Leaders (senior management whether physicians, nurses, boards of directors, managers or all) must allocate the financial and human resources, time and energy as well as demonstrate dedication to the change process. Quality is viewed as ultimately and inescapable the responsibility of top management (Hackman and Wageman, 1995) .

Facilitators

Once upper management has positioned TQM as a priority in the health care organization, the next step in the tectonic TQM change process are the facilitators: training and education (T&E), the quality department (QD), interdisciplinary teamwork (TEM), management by fact (MBF) and the continuous improvement (CI) ethic. These variables serve to facilitate acceptance of the change the health care organization is undergoing. Training and education and the participation of interdisciplinary teams facilitates an understanding and acceptance of the TQM philosophy distilled, allowing organizational members to experience how TQM is to be applied in everyday practice.

The quality department serves as a facilitator, a resource and support mechanism to keep the TQM process on track.

As demonstrated in previous sections, the management by fact and continuous improvement ethics already exist in a health care organization (Fried, 1992, Spoon et al, 1995). It is suggested here that TQM reinforces their use. Health care workers' familiarity with these variables therefore facilitates understanding of these TQM variables making the philosophy easier for health care workers to identify with and grasp. Their familiarity should facilitate greater buy-in to the change process.

Barriers

The next step is to overcome health care's inherent barriers to the TQM process. It is suggested here that the following variables act as barriers to implementing TQM when the hospital's historical environment (before TQM) runs counter to them: customer focus (CF), systems perspective (SP), involvement of all organizational members (ALL) and establishing quality supplier partnerships (SUP). These variables are seen as barriers as they represent the most drastic shift from traditional health care organizational philosophy (Milakovich, 1991). These variables represent a change in thinking from what health care workers are historically used to; they therefore pose the biggest threat to TQM's successful implementation. Once overcome, however, the TQM process should be in motion.

The process of tectonic change, beginning with the drivers and facilitators serves to sensitize the health care organization, easing the acceptance of the more dramatic variables, the barriers, making their presence seem more natural and less of a shock to what organizational members are used to. For example, participation in cross-functional teams containing senior management representation, that use management by fact (statistics) to demonstrate progress, facilitates buy-in to the TQM process, therefore building a stronger case for an orientation towards customer focus, systems perspective and supplier partnerships.

Outcomes

The outcome of the implementation of the previous eleven variables is a TQM culture. The arrow from outcomes back to drivers represents TQM's circular, continuous nature. All eleven variables continuously intervene and interact, each one strengthening the other, to create a successful TQM health care organization. The proposed framework demonstrates how TQM represents a series of mid-range changes, emphasizes TQM's continuous nature and demonstrates that TQM is organic, continuously changing and improving. Thus, the following, *Research Question #5: The above framework distinguishes a TQM hospital.*

The following is a summary of the 5 research questions this study explores. These research questions are the hypotheses of the present study:

Research Question 1 - To confirm which critical TQM variables are applied in TQM health care organizations.

Research Question # 2: To determine which TQM variables act as barriers to TQM implementations in health care.

Research Question# 3: To determine which TQM variables act as facilitators to TQM implementations in health care.

Research question #4: Effective TQM change in a health care organization is brought about tectonically.

Research Question #5: The above framework distinguishes a TQM hospital.

4.0 METHODOLOGY

4.1 Study Design

The research design for the present study is a multiple qualitative case study. Yin (1984) defines a case study as "an empirical inquiry that: investigates a contemporary phenomenon within its real life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used "(p. 23). This definition will guide the design of the present research. The contemporary phenomenon under investigation is TQM in its actual context of a health care setting (ie: hospital); the research aims to determine the boundaries between the phenomenon and context: to determine the boundaries between TQM and health care; and multiple sources of data will be used (discussed below).

A case study approach is appropriate when a topic is new and the researcher has no control over the events (Yin, 1994). The early stage of TQM's development in the health care industry demonstrates that the topic under examination here is new and the fact that the researcher has no control over hospital events; ie, the researcher can not control how hospital professionals will treat patients, the researcher can not manipulate workings in a hospital make a case study approach appropriate here. Furthermore, the present study is concerned with "how" hospitals utilize the TQM philosophy. Yin (1994) also states that the preferred research strategy for studies concerned with "how" is case study.

Understanding "how" hospitals utilize the TQM philosophy will lead to the development of an empirical framework for TQM in health care, the focus of this study. Early stages of empirical or theoretical development require exploratory research (Miles and Huberman, 1984). When a theoretical framework is being built, case analysis and qualitative data help provide the depth and richness needed to allow the theoretical framework to emerge: "A theory or theoretical framework first emerges from the study of an empirical case or object, the approach to which is not and cannot be deductively defined" (Hamel et al, 1993,p. 29).

The use of qualitative data is justified for the present study since qualitative data is viewed as "a source of well-grounded, rich descriptions and explanations of processes occurring in local contexts...more likely to lead to...new theoretical integrations; they help researchers go beyond initial preconceptions and frameworks" (Hamel et al, 1993 p.15). Galperin, (1995),

Kaltsounakis, 1995) and Laframbois (1995) all successfully used case study methodology to explore and expand TQM's theoretical basis.

Miles (1979) recommends beginning a research project with a rough, flexible framework to work with. He cautions that research projects that come to the study with no assumptions usually encounter much difficulty. Accordingly, the research questions here include a proposed framework for TQM in a health care setting as an example (research question #5), as well as eleven predetermined variables that are to be classified and/or validated in this framework (research questions 1-3). A holistic rather than embedded (Yin, 1984) design is used to explore the phenomenon of TQM in health care. This methodology permits an in-depth evaluation of each organization.

Multiple sources of data are used in this study for the purpose of data collection intending to substantiate the findings of the research by corroborating examination of the variables under study (Eisenhardt, 1989, p. 538). The various sources of data consist of in-depth, focused interviews, a survey, existing documents, and participant observation. Face to face interviews represent a primary source of data collection (Davis and Cosensa, 1993). The data analysis consisting of pattern matching, helps establish a chain of evidence which helps to ensure construct validity (Yin, 1994). Participant observation provides a first hand view of the TQM process and thus facilitates a greater understanding of the process. The

multiple sources of data increase the validity of the study as they provide the research with a source of triangulation (Miles and Huberman, 1984).

Multiple sites are used to increase the reliability or generalizability and scope of the study. By comparing sites or cases, one can establish the range of generalizability of a finding or explanation and at the same time pin down the conditions under which that finding will occur (Miles and Huberman, 1984).

To improve the reliability of the study, certain formal procedures were adhered to throughout the study. For example, a case study data base was created. Yin (1984) recommends that every case study should develop a retrievable data base so that other investigators can review the evidence directly. The data base consists of documents, field notes and interview transcripts that have been organized, categorized, coded and completed to allow the researcher to cite specific interviews or documents, allowing an external observer to trace the conclusions back to the original research questions (Yin, 1984).

In addition, certain steps were taken by the researcher to increase the accuracy and reliability of the data collected during interviews. Such steps included the preparation of informants prior to interviews with an introductory letter and a copy of the principal research questions, neutral probing (eg: please elaborate on that more), promise of anonymity and a consent form (Fleisher & Nickel, 1995).

4.2 Data Collection

The present study uses multiple sources of data collection: a survey, interviews, available documents and participant observation.

4.2.1 Survey

A survey was designed by the researcher and distributed to health care "experts" to serve as a way of distinguishing appropriate TQM hospitals for this study. The measure was a short, closed-ended questionnaire developed from an exhaustive survey of the literature that asked "expert" respondents to classify hospitals on a continuum ranging from greatly successful TQM to greatly unsuccessful TQM (refer to appendix C). The classification of hospitals provided front-end preparation, the standardization that Miles and Huberman (1984) explain is required to compare cases in analysis. Such classifications are also important since, in multiple-cases, which sites to look at becomes focal (Miles and Huberman, 1984). The classifications, in addition to aiding in analysis, provided a way for the researcher to select appropriate case cites.

Health care "experts" consisted of either University professors of Health Care Management, hospital Executive Directors, Health Care Management Consultants and Quality Managers of hospitals. These professionals were considered health care "experts" since they study and work in the field, making them much more familiar with the inner workings of hospitals than the average person would be. The classification was based on respondents

subjective opinions of each hospital. As all respondents were health care experts, their subjective opinions should be based on their expert knowledge of the health care industry, individual hospital performance and reputation, and the TQM in health care movement. The classification was necessary in order to determine the level of TQM for each hospital analyzed in the study. The researcher used the survey results to categorize the hospitals as either successful TQM, in-process (benign success) TQM, no TQM or unsuccessful TQM (refer to appendix D for a table of the survey results).

The use of a subjective measure to classify hospitals is supported as Geringer and Hebert (1991) demonstrate a consistency or reliability between the use of certain subjective and objective measures. The use of a subjective measure has been demonstrated as acceptable practice under certain circumstances: when data are often not reported, are unavailable, and when objective measures cannot capture qualitative dimensions (Geringer and Hebert, 1991). All three situations apply to the study presented here.

First, in health care data such as standard indicators of health care performance (ie: medication errors, infection rates, runaways, falls, etc) have historically not been maintained or reported. With the TQM movement, some data is beginning to be collected, however, most of this new data is deemed by the hospital as highly confidential and, if leaked, dangerous to the hospital's reputation. As of yet, hospitals will not make this data available

to researchers. Moreover, as there was no collection of such data in the past, consistent benchmarks and/or acceptable standards have not yet been established.

Second, health care indicators that may already exist are meaningless to an outsider as most of the data does not have a denominator or a common denominator. This makes comparing one hospital's standard indicator to another hospital's difficult as one hospital's numbers may represent data that has been collected for three months from one hundred patients while another hospital's data represents one year from one hundred patients, no one knows. Useable data is therefore not yet available to researchers. Finally, subjective, peer evaluations of hospital performance captures a qualitative dimension that is consistent with the design of the present study as well as the subjective nature of health care service.

For these three reasons, a subjective measure to classify hospitals is justifiably used as front-end preparation to create a situation suitable for cross-site comparison of findings.

4.2.2 Interviews

Once the survey was completed by the health care "experts" and the appropriate cases were selected and approached for their participation, face-to-face interviews were set up. Face-to-face interviews represented the primary source of data collection. They are data that is collected for a specific purpose from original sources (Davis and Cosenza, 1993). Research shows that focused interviews are ideal in new areas of research (O'Grady, 1991). The

interviews were semi-structured with open-ended questions. The interview guide can be found in appendix E.

The open-ended questions in the interviews prevented the researcher from foreclosing on the main issues of the interviews, the open-ended questions did not limit the researcher to responses that were expected (Miles and Huberman, 1984). Open-ended questions allowed the researcher to uncover new or emergent themes (Hamel, et al, 1993). The semi-structured nature of the interviews prevented the researcher from collecting too much superfluous information which would have otherwise compromised the power of analysis (Miles and Huberman, 1984). Another reason for using semi-structured interviews is to allow room for probing by the researcher when necessary, while still providing enough structure to establish the consistency required for cross-site comparisons (Miles and Huberman, 1984). The focused interview guide served as this common instrument. The questions therefore aimed to provide a certain amount of structure while still encouraging flexibility and richness of data by probing for "hows" and "whys" (Yin, 1984). Such qualitative inquiries allow the researcher to uncover possible emergent themes (Hamel, et al, 1993).

The interviews were individual, in-depth interrogations. Individuals with the same position/title or functional responsibilities were interviewed in each case site. Selecting subjects with similar positions or functions for each case provided the research again with

the consistency required to lay out case findings side by side in analysis that Miles and Huberman (1984) suggest. Specifically, for each case at least three of the following individuals were interviewed: the hospital Executive Director, Director of Nursing, Director of Medicine and Quality Manager. Interviewing individuals with similar responsibilities in each case provides the consistency required for cross-site comparisons. The selection of these specific positions was made based on the present research's need for inter-disciplinary representation consisting of those individuals who are intimately familiar with the quality movement in their hospitals. The above positions met these needs.

Each interview involved asking subjects about their experiences with TQM. The questions probed about the use of the various TQM variables under investigation, about the factors promoting or impeding the TQM project, about how TQM was adopted, embraced and implemented in the hospital and about feelings and perceptions of the TQM initiative. The questions were intended to help determine which variables are used in the health care organization and what type of impact these variables have had on the organization. Subjects received a copy of the interview questions in advance to help them organize and prepare for the interview session. All interviews were conducted using the interview guide devised for purposes of this study. Specific details of the interview guide is explained next.

4.2.3 Interview Guide

The interview guide was developed by the researcher based on the information gathered during the extensive review of the literature. Interview questions were designed to collect information surrounding the research questions of the study. The first section of the interview guide gathered background information on the hospital and interviewee: name of hospital, name of interview subject, interviewee function/title, length of time interviewee was in the current position, and length of time interviewee was with the hospital.

The interview questions were directed at eliciting information surrounding the five research questions this study explores. The following explains the initial interview questions and which research hypothesis the question explores.

1- In what year did your hospital's TQM (Total Quality Management) program begin?

This question helps to determine what stage the hospital's TQM (if any) is in.

2 - Who initiated TQM/how was it initiated?

This question helps provide information for research questions #1, #2 and #5. Which variables (ie: top management commitment) drive the TQM movement and which variables facilitate TQM's initiation.

3 - Explain how TQM was adopted/embraced?

This question should provide information for research question #1, which variables (ie: top management commitment) drive the TQM movement as well as research question #3, which variables act as facilitators (facilitating variables would be those that help the organization adapt TQM).

4 - Was TQM brought in gradually or all at once?

This question helps to provide information for research question #4 and # 5. Whether TQM represents tectonic change, and when various variables came into play in the TQM process.

5 - Use of TQM variables...

This question helps to provide information for research question #1 and #5 and represents the main body of each interview.

6 - What factors of the hospital's functioning help to facilitate or ease the TQM implementation?

This question helps provide information for research question #3 and #5.

7 - What factors of the hospital's functioning hurt or impede the TQM implementation?

This question helps to provide information for research question #2 and #5.

8 - Please explain your hospital's involvement with CCHSA's new Accreditation standards.

Can you tell me the impact the Council's new standards have had on your hospital?

This question was added after the pilot test. The pilot test of the interview guide determined that Council had a strong enough influence on the pilot hospital and should therefore be examined in all hospitals as well.

9 - On a scale from 1 to 7 (1=least successful, 7 = highly successful) can you rate the success of your hospital's Accreditation process.

This question was also added after the pilot test. It was added to provide reliability and validity checks (explained below) for the research.

10 - Would you say that TQM represented a small change, an intermediate level of change or drastic change in the hospital's processes? On a scale of 1 to 5 (1 being lowest 5 being highest), please rate the level of change TQM represents for your hospital.

This question provides information for research question #4 to determine whether TQM represents tectonic (intermediate), incremental (small) or synoptic (drastic) change for the particular hospital. The scale will provide a complimentary quantitative analysis.

11 - On a scale of 1 to 7(1 being lowest 7 being highest) how would you rate TQM in this hospital?

This question provides a subjective quantitative measure of respondents feelings/perceptions of TQM in their hospital as a compliment to the qualitative analyses.

12 - Please discuss anything you would like to add.

This question provides the subject with the opportunity to comment or add anything they feel is important to the interview.

The quantitative questions (#9-11) were included to improve the reliability and validity of the research. Internal consistency reliability (Alternate Forms Reliability) will be increased if positive correlations for the qualitative and quantitative responses are found since the quantitative questions ask the same questions in another form. In addition, if positive correlations are found between the two measures used (between the initial subjective measure used to classify and select cases and the interview guide), the convergent validity of the research will be improved as well.

4.2.4 Existing Documentation

Existing documents from each case hospital were collected during the interviews when subjects volunteered certain pieces of information. Documentation was also collected during steering committee meetings when meeting Minutes were distributed, when CQI Team's presented results, or when departments such as the Quality Department or Risk Management distributed reports.

4.2.5 Participant Observation

The third form of data collection in addition to interviews and existing documents, was participant observation. The researcher had the unique privilege of participating as a guest on one of the Case hospital's CQI Steering Committees. This participation began in February 1996 and lasted throughout the course of the research (approximately 10 months).

The case hospital's CQI Steering Committee was the body of hospital professionals responsible for guiding the CQI initiative. It is a cross-functional/inter-departmental team chaired by the Director of Nursing and the Director of Medicine. Meeting content consisted of such things as determining CQI objectives, establishing new CQI teams, CQI Team presentations and departmental reports.

Both documentation and participant observation were used to confirm the approaches to TQM discussed during the interview sessions. In addition, documentation provided specific information about the implementation (eg, training materials and methods, TQM milestones, team reports, departmental reports). Participant observation provided more inductive information (ie:, intra-team relations, hospital culture, TQM variables/elements used, Steering Committee team's joys and tribulations). It also allowed the researcher to monitor the TQM progress from one year to the next. The use of existing documentation and participant observation often presented information that did not surface during the interview sessions. The following section will describe the procedures of collecting the three sources of data and selecting cases.

4.3 Procedure

4.3.1 Selection of Cases

The first step in the data collection process was to determine the appropriate case sites. The hospitals chosen as cases were selected in three stages. In stage one, a list of potential hospitals was compiled from the Guide to Canadian Health Care Facilities 1994-1995. The criteria used to select hospitals from this list were: 1 - that the hospital was in either the Montreal, Ottawa or Toronto area. These are the major cities in areas that are accessible to the researcher within the limited structure of this research study and represented large, cosmopolitan cities with similar demographics; 2 - that it was an acute care hospital (to provide for consistency among hospitals being compared); and 3 -that it had over 400 beds (again for consistency as well as to assure that it was large enough to be a model or generalizable hospital).

Stage two was designed to facilitate the peer evaluation of the hospitals. In stage two, the original list of hospitals was screened by one health care "expert" in each of the cities (Toronto, Ottawa and Montreal). Health care "experts" consisted of either University professors of Health Care Management, hospital Executive Directors, Health Care Management Consultants and Quality Managers of hospitals. These professionals study and work in the industry, have an intimate understanding how hospitals work and have superior knowledge of both TQM in health care and the various Canadian hospitals using it.

The screening was done over the phone with the researcher reading the name of the

hospital and the "expert" accepting or eliminating the hospital from the list. The screening served to reduce the list to those hospitals that are well known enough to be evaluated by their peers.

Stage three was founded upon the research of Miles and Huberman (1984) who suggest that multiple-sites require front-end preparation, some standardization, so that findings can be laid side by side during analysis. Accordingly, this method of selection consisted of the derivation of the initial survey, such a subjective measure asking industry "experts" to classify hospitals on a continuum ranging from unsuccessful TQM to no TQM to successful TQM (refer to appendix C).

Once appropriate case sites were targeted, a letter was sent to the executive directors of each target hospital asking them to participate in the study (refer to appendix F). The letters were followed up by a phone call from the researcher to confirm case sites and to schedule the interview sessions. The results provided the research with one successful TQM hospital, and two in-process TQM hospitals to use as cases in the study. They were those that fit the above categorization and would agree to participate in the study. In order to guarantee the anonymity of participating hospitals, the list of hospitals contacted is not provided in this paper.

4.3.2 Interview procedure

A copy of the interview questions was supplied to all interview subjects one to two weeks before the interview sessions to allow the subjects time to prepare their thoughts and answers. Approximately one week prior to the interview, interview subjects received letters explaining the research objectives and a copy of the interview guide. This was provided to the subjects to gain their trust and familiarize them with the questions, facilitating a smoother and more effective interview process.

The focused interviews were conducted on the case site premises at mutually convenient times. The goals of the research and purpose of the interviews were explained to each interviewee at the initial contact and then again before the interview began. Researchers were told in advance that the interviews would be tape recorded and interviewees were asked to sign a consent form (appendix G) before the interview began. The interviews were conducted alone between the researcher and subject with the researcher asking the questions from a common interview guide one for the subject to follow from and one that the researcher read aloud. All but one interview was tape recorded (at the subject's request). All interviews were transcribed "word for word" from the tape onto computer by the researcher. The printed transcripts were then coded by the researcher. The coded documents were used for data analysis.

The first draft of the interview guide was pilot tested with three subjects. After the pilot test, additional questions were added to the interview guide since the pilot interviews managed to uncover certain elements that were missing from the original interview. First, the question, *Is this a teaching hospital?* was added to the background section of the interview guide. This question was added because respondents in the interviews often referred to their hospital as a "teaching hospital" explaining that being a teaching hospital had an impact on the hospital's culture. It was decided therefore that "teaching hospital" should be a variable controlled for in analysis in order to provide more consistency among cases analysed.

Another issue uncovered during the interview guide's pilot test was the impact the Canadian Council of Health Services Accreditation process had on the hospital. While the influence of Council is discussed in the literature review, it is not a part of the research hypotheses and was therefore deliberately left out of the original interview guide. The pilot interviews uncovered that Accreditation was a fact of life for hospitals and the shift from old to new standards was something that all hospitals had to address. Question #8 was added to the interview guide to directly ask what, if any, influence the new Accreditation standards had on the hospital's functioning. Question #9, asking subjects to rate their Accreditation's success, was included to provide a quantifiable subjective measure of a hospital's TQM success, based on an objective standard - Accreditation.

The addition of quantitative questions provides some reliability checks for the instruments used in the study. The quantitative questions serve to provide some face validity to the successful/unsuccessful TQM continuum (Miles and Huberman, 1984).

4.3.3 Existing Documents Procedure

Existing documents were collected when they were offered by interview subjects during the interview sessions or when distributed during steering committee meetings. They often provided additional information such as standard indicator data or lists of the various CQI projects and team process. This often consisted of detailed data that was not uncovered during the interview sessions.

4.3.4 Participant Observation Procedure

The third form of data collection, participant observation, served to uncover data that would have otherwise been missed by interviews and document analysis. It also served to enhance the researcher's understanding of the cases' particular cultures and TQM programs. Two of the three case hospitals provided the researcher with participant observation opportunities.

For one case, the researcher participated in the hospital's CQI Steering Committee for 10 monthly meetings. To gain the hospital's permission for such observations, the researcher wrote a letter in late 1995 requesting permission to participate as a volunteer on the case hospital's CQI Steering Committee (see appendix H). A few months later, the CQI

Steering Committee Chairpersons requested an interview with the researcher to help them decide whether they would invite the researcher to participate as a guest on their steering committee. The researcher was subsequently invited to fully participate, as a guest, on the CQI steering committee and attended monthly meetings from February 1996 till December 1996.

To effectively analyse the data that was gained from the participant observation experience, field notes were taken by the researcher during each Steering Committee meeting. Such notes consisted of observations during the meetings as well as researcher reflections of the meeting immediately after they took place. The presence of the researcher enhanced the researcher's understanding of the TQM process in hospitals.

One other case hospital invited the researcher to sit in and observe one session of their Quality of Care of Services Committee meeting. Field notes and observations were taken by the researcher here as well. The following section will explain how the various sources of data: participant observation, interviews and documents were analysed for the present study.

4.4 Data Analysis

The same coding procedure was used for all documents: interview transcripts, hospital documents supplied and field notes. Interviews were tape recorded and transcribed by the

researcher. The transcribed interviews, documentation and field notes were all coded by the researcher.

Each interview transcript, document or field note was coded individually but results were aggregated up to the case level as the hospital, and not the individual subject, was the level of analysis for this study.

Since the focus of the research was to empirically examine the theoretical framework derived, a revised framework, based on the initial one conceptualized in the literature review, was developed for each hospital based on the analysis of the data. Each hospital's individual framework is presented in the Results section of this paper. This resulted in three frameworks, one for each case, which were then compared and contrasted ultimately providing the final empirical framework and research conclusions which are presented in the Cross Case Analysis and Discussion section of this paper.

It is suggested that the general analytic strategy to use for a case study is the development of a case description (Yin, 1989). A case description is a descriptive framework used to organize the case study (Yin, 1989, p. 107). Accordingly, all three case sites were analyzed individually with a case description (descriptive framework) established for each. The main technique used to do this was pattern-matching, where the predicted pattern is compared to

the empirical pattern. The predicted pattern of variables is defined in the research questions developed prior to the data collection (Yin, 1989).

Miles and Huberman (1994) describe a four stage process of data analysis: data collection, data reduction, data display and drawing/verifying conclusions. Accordingly, those are the stages of analysis used in the present study. Data reduction involves the selection, simplification, and metamorphosis of raw data into an analyzable form (Miles and Huberman, 1994).

Document Summary forms were used to reduce the data from the original verbatim text into shorter, summarized form to simplify further analysis. These sheets consisted of a description of the document, its significance and summarized the document's content (see appendix I). The forms are used to assess the relevance (if any) of the document to the present study (Miles and Huberman, 1994).

The primary tool used to analyze the summarized or reduced data was a coding sheet created by the researcher (appendix J). This involved impression aggregation (Fleisher and Nickel, 1995), coding transcripts and summary forms with a descriptive keyword process. The data was coded according to the variables specified in the five research questions.

The coding sheet used for impression aggregation was developed by the researcher based on Miles and Huberman's (1994) instructions. Miles and Huberman (1994) explain that codes are categories deriving directly from research questions. Codes are retrievable and organizing devices that allow the researcher to cluster all related segments. This clustering sets the framework for analysis. Miles and Huberman (1994) recommend developing a "start list" of codes prior to field work. This list should come directly from the conceptual framework or research questions under examination. Accordingly, a "start list" was created by the researcher prior to the data collection. It was based on the themes, variables and key words found in the research questions. Miles and Huberman (1994) also explain that during the course of the research, codes can change due to the realities discovered in the research. They caution that "incrementally adding, removing or reconfiguring codes produces a ragbag". They suggest therefore that to remain focused on the research objectives, codes should remain as static as possible and should be part of a governing structure. For these reasons, the initial "start list" consisting of "key words" to identify all the variables under examination was used as the coding structure for analysis of all data (refer to appendix J).

Data analysis consisted of content analysis where, "key words" that were said by a subject to be used in the hospital, received a "+" on the coding sheet. If the word was not said to be used it got a "-". A "D", "F" or "B" was placed next to the code to explain whether the word was discussed as a driver, facilitator or barrier to TQM implementation. Additional, key quotes by the subject about the "key word" were also included on the coding sheet.

Data Display sheets were created to present the summarized and coded data in organized forms (Miles and Huberman, 1984). Data display sheets used were "Checklist Matrix" (refer to appendix K for a sample) to tabulate the use of each variable examined in the study and a "Conceptually Clustered Matrix" where each research hypothesis was matched to the data collected from each case (Miles and Huberman, 1984). The Conceptually Clustered Matrix was the main tool used for cross-case comparisons and will be explained in the Cross Case Analysis and Discussion section.

The final stage of analysis is conclusion drawing/verification stage. This stage involves the pursuit of objectivity by the researcher. The degree of subjectivity can be assessed by the level of reliability and validity of the findings (Miles and Huberman, 1994, p.). Miles and Huberman list tactics to use in order to improve the reliability and validity of qualitative research (Miles and Huberman, 1994). Content analysis, where a tally of the number of respondents mentioned or confirm a hypothesis and verifying hypotheses, seen in the Conceptually Clustered Matrix, was the tactic used here to draw conclusions. The outcome of the drawing/verification stage is outlined in the Results section below.

5.0 RESULTS

The following section will explain the results of the research. First, the findings from the survey will be explained to demonstrate how cases were selected. Next, the results from analysis of each case will be described case by case. The principle findings of the research

are presented in terms of their support for the research questions posed earlier on in this paper. The aggregated results and implications of the research findings will be explained in the Cross-Case Analysis and Discussion section of this paper.

5.1 Survey Results

The response rate for the survey was 62.5% with 5 out of the 8 "experts" contacted answering the survey. Six of the twenty hospitals listed on the survey were contacted to participate in the study. They were those hospitals that met the aforementioned criteria: had well over 400 beds, were acute-care hospitals, and were in a metropolitan area. Three hospitals agreed to participate (one had agreed much earlier as the researcher was already attending their CQI steering committee meetings). They are the three cases described in this study.

Case # 1 was classified for purposes of this study as a "successful TQM" hospital with 60% of the "experts" rating it as successful (1 greatly successful and 2 average successful).

Case #2 had 20% of respondents rating it as "average successful CQI", 20% of respondents rating it as "average unsuccessful CQI" and 60% responding "don't know". Case # 2 was classified as an "in process/benign success" since, while it had an active quality program in place, it received ambiguous responses from the "experts".

Case # 3 received a 20% "successful CQI" rating and a 60% "don't know" rating. Case # 3 was also classified as "in process/benign success" as the "experts" felt there was not enough outside knowledge of the hospital's workings to rate them. The hospital had a TQM program in place, but the program was relatively new.

5.2 Case #1

Case # 1 is a community-based acute and long-term care facility with approximately 930 beds caring for approximately 22,000 patients annually. It is a teaching hospital in the province of Ontario. Case #1 was selected as it fit all the criteria determined for this study: it had well over 400 beds, is an acute-care hospital, is in a metropolitan area, and the hospital agreed to participate in the study.

Case #1 was classified in the initial survey by experts as a "highly successful CQI" hospital. Five in-depth interviews were conducted with members of the hospital's senior management: the President, two Vice Presidents, the Quality Coordinator, and a Team Leader/Manager. In addition, secondary data in the forms of a hospital video and writings on CQI were analyzed.

Case #1 has been self-classified as a TQM hospital with TQM introduced to senior management in 1989 and officially adopted by the hospital in 1991. CQI and TQM are defined by the president of the hospital as such:

CQI is a subset of TQM where TQM is the assessment of all the issues and conditions in an organization that need to be adjusted to enable all the improvement to occur and enable the individuals in the organization to function differently so that it becomes a reality and not just a program.

As one Vice President explains, the hospital is striving to become TQM but is not quite there yet as they believe TQM will take 10 years to achieve. To achieve TQM, the organization uses a philosophy of CQI.

5.2.1 Research Question # 1

Case #1 confirms that the 11 TQM variables identified in the literature are used by this hospital. There was 100% agreement among subjects that all 11 variables exist in the hospital (refer to appendix L). First, TQM was introduced and championed by the president of the hospital. He is described by colleagues interviewed as committed to TQM and modelling the TQM philosophy. Senior management were the first to be introduced to TQM through a senior management retreat. *Senior management commitment (UMC)* was said, as one Vice President explains it, to be "critical to TQM's success".

Training and Education (T&E) started at the very beginning of the hospital's TQM project and is continuous. It began with a senior management retreat, followed by training retreats for Team Leader/Managers who then trained the members of their teams. The hospital uses

a "cascading" method of training all members of the organization. By 1992, 80% of hospital employees had received TQM training.

The *quality department (QD)* of the hospital followed an "evolution" as the quality coordinator explains, from quality assurance which began in the hospital in 1981 to quality management in 1991. This evolution is much like the evolution discussed in the literature review section of this paper.

The quality department acts as a TQM facilitator. The quality department's manager is described by colleagues interviewed as a coach to members of the organization. As one Vice President explains, the role of the Quality Manager is that of a facilitator: "her responsibility is to facilitate the work, it's a very important yet difficult position because you don't want someone who owns it but you want someone who feels responsible and makes sure other people begin to engage in QM in a way that is intended...". In addition, the quality department has become a revenue generator for the hospital as it often acts as a paid consultant on TQM to industry and other health care centers.

Management by Fact (MBF) is referred to here as "data driven decision making" and was also introduced in the beginning of the hospital's TQM process. Part of the training and education provided to organizational members was encouraging "point of service decision making" based on information and fact. All Team Leader/Managers are well versed in

TQM tools and techniques which are used in almost all meetings. One Vice President even pointed to a flip chart in her office containing a fishbone diagram (a TQM tool) that was drawn during a meeting earlier that day.

MBF received some initial resistance by doctors who felt it was either "not scientific enough" or felt it threatened their professional autonomy. It was also initially resisted by other members of the organization who weren't used to the time consuming methodology and tools. After thorough training and education, today MBF is considered to be a part of the organization's philosophy.

A continuous improvement ethic (CI) is considered to be at the "core of engaging individuals" and is a major theme in the workplace, as the President explains. A Vice President explains it likewise as "central" to the organization and calls CI a "tool to achieve TQM".

A lot of work has been done in the hospital to develop *interdisciplinary teams (TEM)* and all subjects concurred that "teamwork is integrated into the organization's philosophy" or "the whole philosophy of the organization is around teamwork" and how people work in teams. This philosophy of getting all work done through interdisciplinary teams is demonstrated in the reengineering the hospital began two years ago. As a result of government budget cuts the hospital has undergone a major organizational redesign. The

hospital's organizational structure has been redesigned to support teams. Functional departments have been removed so that there no longer exists a Department of Nursing, Department of Social Work, etc. Instead all of these people are integrated into teams reporting to one Team Leader/Manager. As a Vice President explains, "we've not only embraced teamwork as part of our concept but we've reorganized our organizational structure to support that". Teamwork has always been a part of the organization's functioning, but with TQM it has evolved into an interdisciplinary approach.

Customer focus (CF) exists in the hospital. It is said by the President to be "one of the basic principles that we use". While a patient focus has always existed in the hospital, with TQM, members of the hospital are recognizing that patients aren't the only customers. Customers are everyone you serve: patients, the Board, staff, etc. That message was "a clear change in thinking and focus that TQM brought about". Focusing on the different types of customers generated a lot of backlash in the beginning. Including the patient and other members of the team in the decision making process, which is what CF principle is about, was resisted by the physician groups in the beginning because it was felt to threaten the professional autonomy that they were accustomed to. As one respondent explains: "there was a real sense that, for instance, the physician was the only word, it was like g-d speaking so to speak, that's the way we have grown up in health care but now it seems that the patient also is considered very much a part of the decision making in care".

Patient satisfaction (CF) is measured regularly by the hospital through a third party instrument called "voice of the customer". Twenty-two Canadian hospitals use this instrument and is said by one Vice President to provide "tremendously valuable data". Due to massive budget cuts, however, the hospital began to undergo a radical organizational redesign in 1994. Customer satisfaction was measured before the redesign of 1994 took place and then again after. It is felt by hospital employees that the radical redesign has hindered hospital workers' ability to remain focused on keeping patient's satisfied since patient satisfaction has shown to decline as a result of the organizational redesign. As a Vice President explains, "with dwindling resources its hard to stay customer focused".

The *system's perspective (SP)* was only introduced to the hospital in 1994. Today, the organizational structure focused around teamwork is based on a perspective that understands that the organization is an interconnected network. The President explains that not only do they now view the organization as a system but they take it even a step further recognizing that the health care system as a whole impacts the hospital. He views the hospital as an important but small moment in time.

The involvement of *all organizational members (ALL)* was a part of the TQM indoctrination strategy in 1991. The indoctrination strategy was to provide hospital-wide TQM training and education through a phased-in approach during the year 1991 in order to sensitise all members of the hospital on TQM. Approximately 80% of all employees

received TQM training and education. Training and education consisted of senior management CQI workshop, hospital-wide introduction to CQI workshop, team leader training, team member CQI training, hospital-wide CQI education and training, CQI seminars and Quality Days. Involving all members includes members of the Board of Directors and other Volunteers who also receive TQM training and education.

The involvement of volunteers and the board of directors is a form of supplier partnerships. Moreover, for this hospital, the Board of Directors was a driving force behind the TQM movement. A member of the Board was well versed in TQM and was a senior member of an organization that supplied the hospital with valuable TQM training, consulting, coaching and materials that are still used by the hospital today.

With regard to *culture (CUL)*, the introduction of TQM consisted of an early move to empower employees and to build a foundation of "point of service decision making". Three subjects stated that the organization's culture was ready for CQI since the organization already had a strong patient focus and a lot of teamwork. The hospital began measuring culture at the very beginning of TQM's implementation. In 1989 they conducted an organizational CQI culture survey and then took another survey again in 1994. Subjects explained that they could see a clear cultural shift towards quality management demonstrated in the comparisons of the two culture surveys. The culture survey was a confidential, proprietary survey provided to them by an outside consultant. It uses a six

point likert scale (strongly agree to strongly disagree) covering eight dimensions: organization, management, communication, internal customer orientation, external customer orientation, training, and recognition and rewards.

5.2.2 Research Question # 2

Only two of the TQM variables identified in the literature represented barriers to overcome in order to achieve TQM: *management by fact* and *customer focus*. While now embraced by the entire organization, these were the only TQM variables that were initially resisted when introduced. Their resistance was overcome through training and education and over time. This will be explained in more detail in the Discussion section of this paper.

Interview subjects discussed two new variables, variables that were not mentioned in the literature, that act as barriers to TQM's success: *external environment (EE)* and *reengineering (REENG)*. The 10% reduction in government funding the hospital has recently experienced has made it much more difficult for the organization to stay focused on TQM variables. It has introduced fear, one of TQM's deadly diseases (Deming, 1984) into the organization. People are afraid of losing their jobs and are blaming CQI for bumping and job losses. One respondent explained that before the huge budget cuts, people could redesign their jobs, departments and teams based on CQI principles without fear of making themselves obsolete. The president could promise them that if they made improvements the organization would find another place for them. The president can no longer promise that.

The *reengineering* that began in 1994 is an outcome of the budget cuts. While the organizational structure was redesigned based on TQM principles, the job cutting also introduced fear into the organization, making it more difficult for people to be focused on TQM principles such as customer satisfaction. It caused a lot of people to blame the chaos and regression in customer satisfaction on CQI.

The *external environmental* influences are a part of the larger health care system as a whole and their behaviours, according to the systems perspective philosophy, either directly or indirectly impacts on the individual hospital's system. In this case the external environment has a direct negative impact on the hospital as it is creating a sense of fear and reengineering chaos.

5.2.3 Research Question #3

All eleven variables were said to act as facilitators to TQM by at least one respondent. *Upper Management Commitment* and *Training and Education* were said to act as a facilitator by all five respondents. *Upper Management Commitment* was discussed more as a driver of TQM than as merely a facilitator. *Culture* was said to be a facilitator by four of the five respondents. *Quality department, teamwork, customer focus and involvement of all organizational members* were said to be facilitators of TQM by three of the five respondents.

The interview subjects also discussed three new facilitators that were not mentioned in the literature: *Accreditation Council (COUNCIL)*, *demonstration projects (DP)* and *existing organizational culture (EX CUL)*. The Canadian Council for Health Services Accreditation (Council) was mentioned as a facilitator of TQM, specifically facilitating the development of interdisciplinary teams and providing an affirmation that the hospital is heading in the right direction with TQM. The hospital was the first to pilot test Council's new standards. As one vice president explains, "that initial accreditation that we had was really the first time very often that everybody that was involved in care of a particular type of patient had gotten together and sat down in the same room, they had just never talked before."

Pilot projects, called "Demonstration Projects", were first carried out to test the concept of interdisciplinary teams using TQM tools and techniques. Their progress served as organizational examples demonstrating CQI's success. Some of the demonstration projects included Radiology: making the film library more efficient, surgical flow: to reduce the waiting time for patients so that they weren't lined up in halls waiting to get into the operating room, and the parking garage: there used to be line ups around the corner at popular start times. The demonstration teams were set up, received training, made some improvements and cascaded the training along. As the Quality Coordinator of the hospital explained in the interview, "the idea behind the demonstration project was to give people practical examples so we could learn how teams operated...what we should improve". The

Demonstration Projects served to explain the difference between QA and QM to organizational members and offer concrete examples that facilitate buy-in to the TQM process from members of the organization. As the Quality Coordinator explains, "those kinds of examples (demonstration projects) were the most powerful way of making QI alive for people...they saw improvements in these pilot projects right away...so people really bought into them."

Two of the five respondents also explain that the *existing culture* of the organization (EX CUL) was ripe for TQM. The organization had a long, one hundred year history of trust, teamwork, empowerment and no fear which facilitated easy adaption of TQM principles once they were formalized through TQM implementation.

Finally, the supplier partnerships with the Board of Directors played a pivotal role in introducing CQI into the organization. Members of the Board had TQM expertise and offered consulting, training and measurement materials for the hospital to use. While these materials were adapted for the health care environment, they still served to teach senior managers about the TQM philosophy.

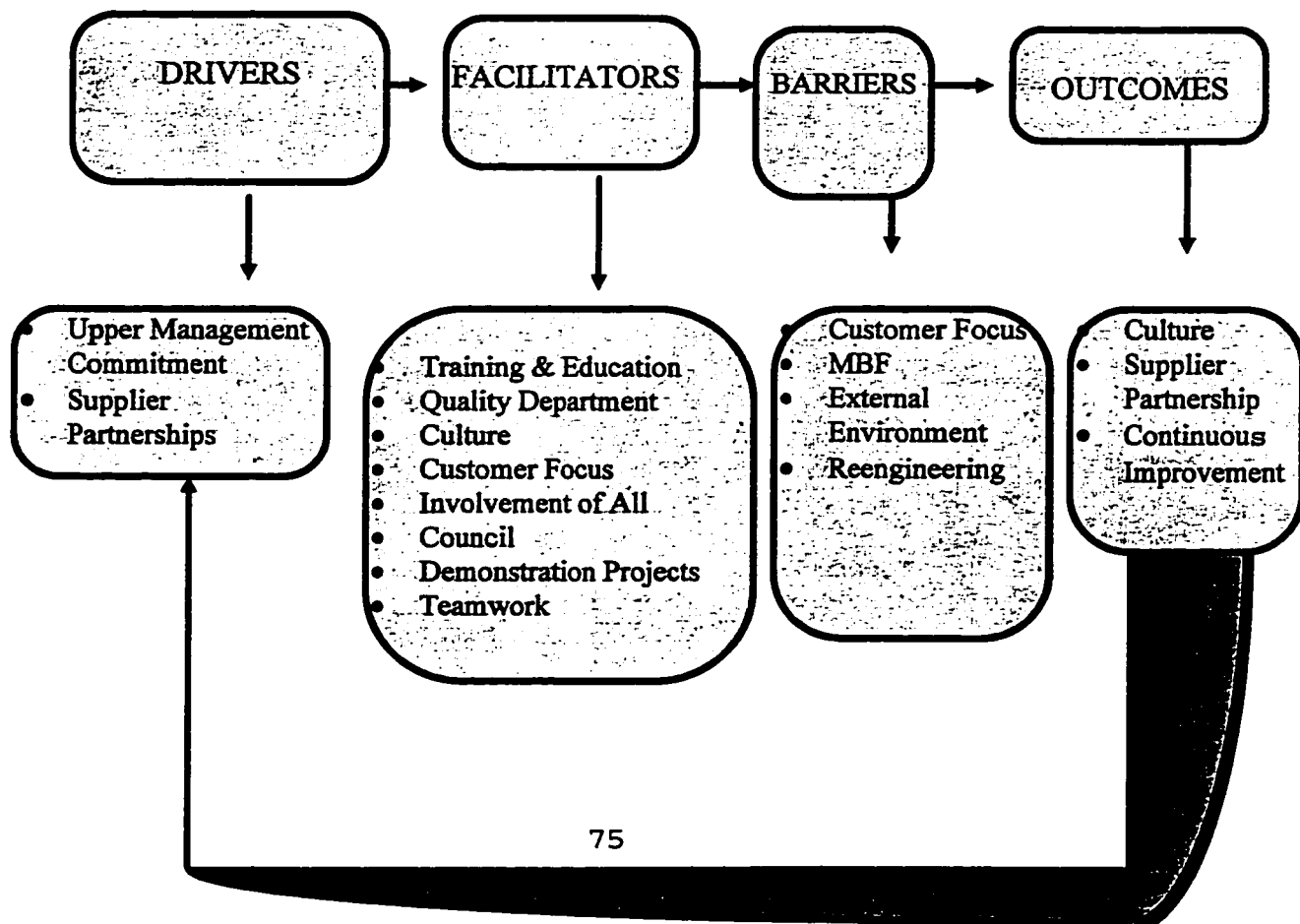
5.2.4 Research Question # 4

Research question #4 was supported with four out of the five subjects stating that TQM represented a form of tectonic change in the organization. Two respondents referred to the

change as "intermediate change but drastic over time", one as "a series of incremental changes over time" and one respondent says it represents a "fundamental" change in the organization's culture. It received an average rating of four out of five on the severity of change scale. TQM is said by members of this organization to take up to ten years until it is fully achieved. While TQM ultimately represents a fundamental change in hospital processes, its totality is phased in over time.

5.2.5 Research Question # 5

Below is the empirical framework for TQM that fits case #1. It is a modification of the original hypothesised framework presented in research question #5 of this paper:



As a result of the interview discussions, four new variables have been added and some of the variables' roles (driver, facilitator and barrier) have been changed to fit the picture interview subjects described during their interviews. The model presented above is an empirical framework that represents Case #1. A final model that is an aggregate of the three cases studied here and will be presented in the Cross Case Analysis and Discussion section of this paper.

The new variables for Case #1 are Council representing CCHSA, Demonstration Projects, External Environment and Reengineering. Upper Management Commitment and Supplier Partnerships were the driving forces for TQM's implementation. Training and Education, Culture, Quality Department, Teamwork, Customer Focus, Council, and Demonstration Projects were all variables that, once introduced, helped to facilitate the achievement of a successful TQM culture. Customer Focus, Management By Fact, External Environment and Reengineering represented some minor and major obstacles that had to be overcome to achieve a successful TQM organization. Finally, System's Perspective and Continuous Improvement ethic are the final variables introduced to the organization to make it a TQM organization.

5.2.5 TQM Success

The initial survey classified Case #1 as a "successful TQM hospital". The mean success rate given by interview subjects on the hospital was a 5.6 out of 7. One respondent rated TQM's success as a 7 out of 7, one rated it as a 6 out of 7 and the other three respondents gave it a 5 out of 7. Case #1 can therefore be classified as a "successful TQM hospital".

5.3 Case #2

Case #2 is also a community-based acute and long-term care facility with 637 beds caring for approximately 22,000 patients annually. It is a teaching hospital in the province of Quebec. It was selected because it fit all the criteria determined for this study: it had well over 400 beds, is an acute-care hospital, is in a metropolitan area and the hospital agreed to participate in the study.

Case #2 was classified as an "in process/benign success" TQM hospital. The hospital was approached by the researcher at the beginning of the research project and was asked to allow the researcher to participate, as a guest, on the hospital's Continuous Quality Improvement Steering Committee. Refer to appendix I for the original contact letter. The hospital agreed and this served as a form of participant observation that took place over a period of ten months. In addition to participant observation field notes, content analysis of Steering Committee meeting minutes and hospital reports, three in-depth interviews were conducted. The interview subjects were the hospital's Associate Medical and Teaching

Director, Nursing Director of Medicine, Psychology, Geriatrics and Ambulatory Services and the hospital's Quality Improvement Coordinator. Participant Observation field notes and hospital reports were coded as two additional sources of data. Appendix M provides the completed coding sheet (checklist matrix) for Case #2.

CQI was introduced to the hospital in 1993, by the hospital's Associate Medical and Teaching Director and by the Associate Executive Director of Nursing. Once the QI Plan prepared by these people was approved by senior management and the Board, the CQI Steering Committee was formed and within six months, nine QI (demonstration project) teams were established. CQI was not introduced to the hospital as a whole, only CQI steering committee members, senior management and QI team members were aware and involved with the hospital's CQI initiative.

5.3.1 Research Question # 1

Nine out of the eleven TQM variables were found by all five sources to be used in the hospital: Upper Management Commitment, Training and Education, Quality Department, Management by Fact, Teamwork, Customer Focus, Continuous Improvement, Supplier Partnerships and Systems Perspective. Two variables were not used by the hospital: Involvement of All Organizational Members and Culture.

Upper Management Commitment exists in the hospital as a driver. It was senior managers in the form of the hospital Associate Medical and Teaching Director and the Associate Executive Director of Nursing who championed the CQI effort in the hospital. They began the CQI movement and lead the CQI Steering Committee, the committee that oversees the entire CQI project.

There was a strong emphasis placed on *Training and Education* (T&E) right from the beginning of the CQI initiative. CQI Steering Committee members and QI teams participated in various training sessions. While T&E exists in the hospital, it is felt by some respondents that there is not enough training offered and that hospital employees, especially physicians, don't have enough time to participate in the training sessions. While T&E, when provided, acts as a facilitator for TQM, the fact that there is not enough of T&E is said by three of the sources to impede TQM's progress.

Involvement of ALL organizational members, however, is not a variable used by the hospital. Only nine QI teams exist. It is only these teams and Steering Committee members who are trained and educated about CQI in the hospital and who participate in the CQI program.

The *Quality Department* is a combination of QI and Risk Management, consisting of two staff members who provide support to the CQI movement. The Quality Department's role is to coach and guide the CQI process.

Management by Fact is used in the hospital with most of the emphasis on developing and monitoring Standard Indicators. The hospital has a hospital wide chart of all the indicators being tracked. This chart is reported to the Board of Directors. TQM tools, such as brainstorming, were observed in use during CQI Steering Committee meetings; however, these tools and techniques are not as widely understood and used as the standard indicators are. It is felt by one respondent that more resources (financial and human) are necessary to keep CQI moving and that the lack of adequate resources for data collection acts as an impediment to CQI's progress.

While two sources explained that a *Continuous Improvement Ethic* was a part of the hospital's CQI philosophy, two sources did not see it in practice. The shift from QA to QI is seen most vividly in the increasing use of the CI ethic. As one respondent explains,

Of course, that (CI) is in force. We try to explain that when you find a problem, falls for example, we give a baseline report on how many falls, we're going to institute let's say a fall prevention program then we have to go back and monitor it. It's not good enough to just do the program. We have to go back and see if there's an improvement and then six months later we have to still track it because you're always trying to improve. Whereas a QA audit was different, we'd do an audit, meet that standard and o.k. that was it, put it in the garbage (Anonymous).

What this means was that with the QA system, once something was audited and met the standard it was forgotten about. If the improvement regressed months later, it was not known since it was no longer being monitored. The Hawthorne effect, when a part of a change is the result of the manipulation and not the change itself (Kervin, 1992), has been detected by many of the new CQI teams. Now, with CQI, changes are monitored continuously both after the manipulation as well as on an ongoing basis to make sure that the improvements do not regress; rather, that they continually advance.

Teamwork is very much a part of the hospital's functioning today. As one respondent explains, "the focus from the very beginning of CQI was to make teamwork part of our clinical practice". In addition, it was the aim of the two senior managers who began the CQI movement to facilitate more cooperation and teamwork between doctors and nurses. As a result, all QI teams are co-chaired by a doctor and a nurse. While the CQI movement began with the establishment of nine interdisciplinary teams, many more interdisciplinary teams and task forces have been established since CQI's initiation.

It is unanimous that the focus of the hospital has always been on "what's best for the patient". The hospital has been dissatisfied with the quality of the current Patient Satisfaction survey being used (a home grown questionnaire) and so has decided to begin

conducting Focus Group sessions with customers in order to monitor *Customer Satisfaction*.

A *System's Perspective* is trying to be enforced in the hospital. It still requires a shift in thinking for most hospital employees involved, but is advocated by the CQI movement. As one respondent explains, "we just formed a medications incidents task force, right away they're saying 'let's look at the system, where is the system breaking down' rather than who are the nurses making the errors. Still there's a tendency to blame people, but we're always looking at the system".

Involvement of all organizational members in the TQM process is not yet used in the hospital. The shift to a *Quality Culture* is also not yet complete. It is explained by members of the hospital that while most hospital employees are always thinking in terms of "quality", fear and blame still exist while involvement of front line staff on QI teams is still limited.

For *Quality Culture*, it was unanimous that the hospital has been committed to providing quality since its inception, and that this commitment is formalized through the CQI process. One element of a TQM culture that stands out is the elimination of fear. As one respondent explains, "we made major efforts to preserve anonymity so that people would feel when they were coming into a room they weren't being massacred. Let's say an incident raised an issue about the whole system... it was very, very clear that anonymity had to be

preserved." Preserving anonymity made it much easier for people to talk about negative incidents without fearing that they would be blamed or disgraced by it.

New variables introduced in the previous case were also found to exist in Case #2 as well: Accreditation Council, Existing Culture, Demonstration Projects and External Environment.

As these variables were found to be either facilitators or barriers, they are explained in detail in the next two research questions.

5.3.2 Research Question # 2

External environment is a new variable that was found to be a barrier to CQI's successful implementation. The lack of adequate resources and the fear of hospital closings, was again cited to impede CQI's process either because there wasn't enough money to get things done, or because people are so fearful they can't focus on quality.

5.3.3 Research Question # 3

The variables in Case #2 that acted as facilitators of CQI were the following: Training and Education, Quality Department, Management by Fact, Teamwork, Demonstration Projects, Supplier Partnerships and Existing Culture. These variables served as facilitators of CQI in the hospital since their successful use aided employee buy-in to the CQI process.

Upper Management Commitment and *Accreditation Council* were undisputed drivers of CQI. The CQI project was initiated and continuously lead by senior hospital managers consisting of a nurse and a physician. The combination of clinical workers championing CQI since they are seen as role models for other physicians and nurses, generated support for CQI. As one respondent explains, "you can't lead a whole hospital without being a senior person, especially not being a physician. I think having a physician really helped getting physicians involved...".

Accreditation Council served as another driver of CQI since the CQI program was designed around Council's recommended Accreditation teams. Council's shift to the new standards motivated the hospital to shift to CQI as well. It is also felt by respondents that as the hospital prepares for accreditation, more and more teams will be established affecting more members of the organization. In this vein, Accreditation serves to facilitate CQI progress in the hospital.

Demonstration Projects, such as the nine original QI teams, serve as examples to members of the hospital of what can be accomplished through CQI, facilitating CQI's progress as well.

Existing Culture facilitated the CQI process since, as one respondent explains, "the hospital's perception that department-based QA program was not efficient in achieving

positive changes made them more ready to accept TQM". In other words, the hospital culture was ripe for CQI. Moreover, *Existing Culture* in the form of physician's ethic was explained by two respondents to have had a tremendous influence as a facilitator of CQI. One respondent explained that, from a physicians point of view, CQI has been around since the latter part of the last century:

The first CQI act of major consequence was in the latter part of the last century when gynecologists realized that they could totally eliminate puerperal sepsis by washing their hands between patients, since there were no gloves at the time. The concept has always been a part of infectious disease picture...if you read books and if you read journals, you realize that there is a body of literature that exists in business and over the past decade there's actually a whole body of literature that exists in health care. It's apart from business but fundamentally what it really is, is the elimination of sepsis, infection and death in post delivery. The concepts are exactly the same as in the latter part of the last century...the (infection) was associated with incredibly high mortality and the analysis was done on why the death occurred, so there's the data base, there's a dissection of the process, the system, there was a correction of the correctable part of the process, action, there was a leadership event...you could argue that what was missing was the multi-specialty group but that one easily came in afterwards...Another example is in the 1970's when people actually defined surgery specific infection rates with their acceptable norms. It was clearly understood that there were several factors involved with infection rates, it wasn't the surgeons themselves... (Anonymous)

The respondent explains that many of the elements associated with CQI - Management by Fact, System's approach, Continuous Improvement, Upper Management Commitment - have been used by physicians since the late 1800's. These concepts are not foreign to

physicians and thus when are formally introduced through a CQI program, are easily grasped and supported by physicians since these principles are a part of their work ethic.

Training and Education, the Quality Department, Management by Fact, Continuous Improvement and Teamwork were also facilitators of CQI in this hospital. Training and Education gave the teams the skills and tools (management by fact) required to work effectively and encouraged the Continuous Improvement ethic. The teamwork got people who used to work in vacuums to come together and the Quality Department provided the ongoing support necessary to keep CQI on track.

Supplier Partnerships were instrumental in facilitating TQM in this hospital. A major hospital supplier came on-site and provided a day long seminar on CQI to hospital workers, free of charge. This partnership was vital to the hospital since their budget was too limited to afford to hire outside consultants for CQI training and education.

The government is also a large supplier in the health care system. One physician explains that a new classification of disease by severity (APR DRG 12 rather than APR DRG 8) is now being used by the government. This new classification can help with setting standard indicators within and across hospitals since it accounts for severity and mortality expectations. Knowing the severity eases the assessment of appropriate and inappropriate

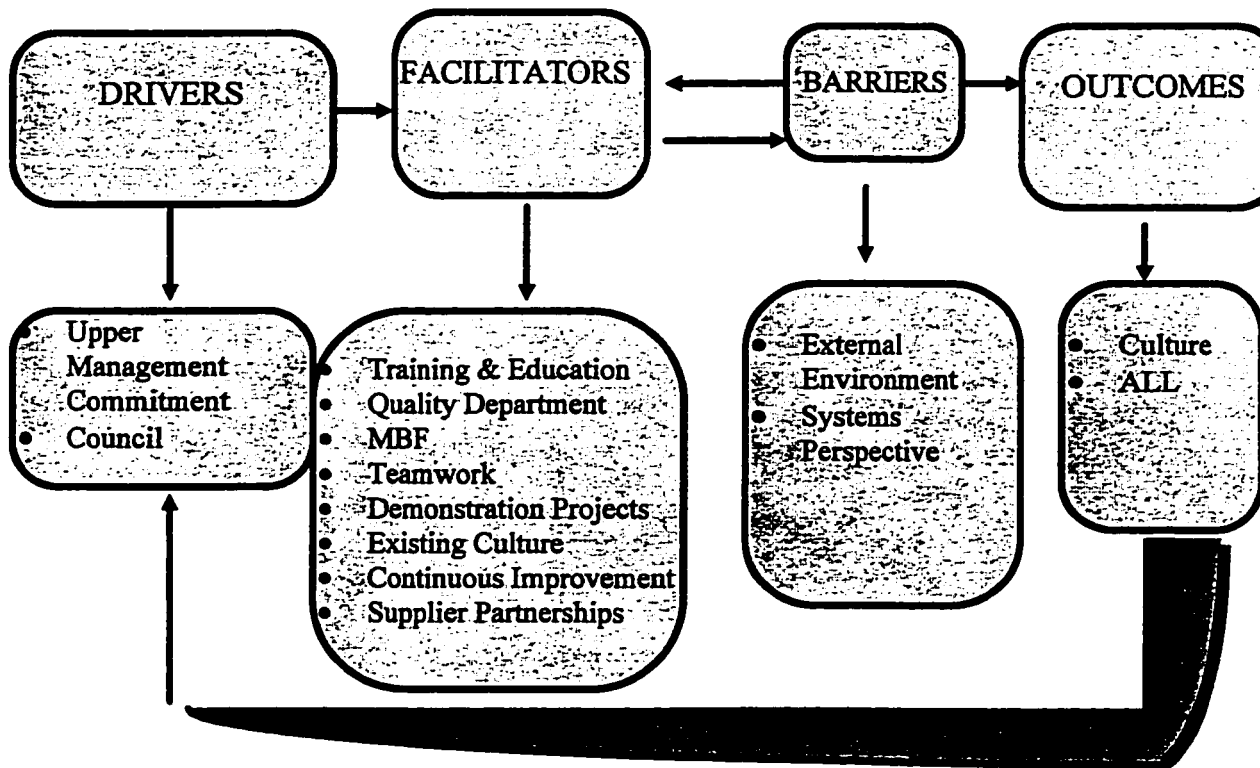
mortality, and allows for the comparison of similar incidents. It allows people of the same age, with the same severity of illness to be compared to one another.

5.3.3 Research Question # 4

Research question #4 is supported with four of the five sources explaining that the CQI change came about gradually, representing an intermediate level of change for the hospital. CQI was said to be brought in gradually, with various steps ranging from its inception, to its acceptance by the board, to the establishment of CQI teams, until teams were seeing positive outcomes and more teams were established. The CQI process, which began in the hospital three years ago, is finally now beginning to be in full process.

5.3.5 Research Question # 5

The following is the empirical framework for TQM case #2:



Upper Management Commitment, Council and Suppliers were TQM's Drivers, T&E, QD, MBF, TEM, DP, EX CUL, CI, SP and CF facilitated or helped advance TQM in the hospital, while the External Environment (lack of funding) impedes TQM's progress. Culture and involvement of ALL organizational members will be the outcome of TQM, as it progresses in the hospital.

5.3.6 TQM Success

Case #2 is classified as an "in process/benign success" TQM hospital. It is still in the early implementation stages of TQM so it is too soon to classify it as a successful TQM hospital. It received an average rating of 4.6 out of 7 for TQM success.

5.4 Case #3

Case #3 is a community-based acute and long-term facility with approximately 735 beds. It is a teaching hospital in the province of Quebec. It was selected because it fit all the criteria determined for this study: it had well over 400 beds, is an acute-care hospital, is in a metropolitan area and the hospital agreed to participate in the study.

Case #3 was classified in the initial survey as an "in process/benign success" hospital. Three in-depth interviews were conducted with members of the hospital's senior management: Quality Manager, Nursing Director of Surgery and Vice President. In

addition, field notes from a Quality of Care of Services Committee meeting and hospital documents were analyzed.

CQI has been a strong force in the hospital since 1993, however, aspects of CQI have been in use in the hospital since 1989. Respondants explain that while it considers itself to be a CQI hospital they are "the kind of organization that is singularly against names or labels". As a result the "jargon" terminology they feel is associated with TQM is avoided in the hospital, while most of its principles are in use. The hospital is said to be very decentralized and management decision making is "very much at the point of care". As one respondent explains, "TQM for us was sort of an insult... telling us you haven't done it (quality) in the past". So while the hospital supports TQM they steer away from using what they consider "jargon".

5.4.1 Research Question # 1

Six of the eleven TQM variables were said by all research subjects to be used in the hospital: UMC, QD, MBF, TEM, CF and SP. Four variables were said to be used by two thirds of the subjects: CI, SUP, ALL and CUL. Four variables that were not discussed in the literature review were uncovered here as well: Demonstration Projects (DP), Council, Existing Culture (EX CUL) and External Environment (EE).

Upper Management Commitment (UMC) exists in the hospital, not as a driver but in a supportive fashion. Upper management empowered organizational members, especially the quality department. It is only more recently, however, that senior management is taking a more leading role in the CQI movement.

Training and Education (T&E) was the only variable that was not officially used by the hospital. It was explained that a lack of resources (human and monetary) meant that the hospital could not provide formal T&E; instead, the quality department filled the void acting as trainer, a resource and providing a tremendous amount of CQI literature to members of the organization.

The *quality department (QD)* of the hospital was the driving force behind the CQI movement. CQI was initiated by the Quality Manager of the hospital with senior management support. The QD played the role of mentor, educator and quality consultant in order to compensate for the lack of resources devoted to the CQI movement. The responsibility for quality of care of service, however, has always been in the hands of the manager of the service, and not the responsibility of the QD demonstrating point of service decision making and responsibility.

The Quality Department (QD) followed an evolution from QA to QM, similar to the evolution discussed in the literature review. Quality management at the hospital is

integrated with utilization management. As the quality manager explains, "we say that one of our missions is to help departments develop the best to monitor and evaluate the quality of their programs making certain there is minimal risk to patients and their staff and at the best use of resources possible". The high costs associated with quality are offset by the resource utilization and the budget cutting required by resource unitization is offset by the need for quality.

Management by Fact (MBF) has had a long tradition in the hospital. One respondent explained that teaching hospitals are rigorous in this process. Currently, the senior management has issued a hospital wide rule that requires all departments to track at least two indicators: one for customer satisfaction and one for performance. Exactly what type of indicator and how to track the indicators is up to each individual department. The use of TQM tools and techniques such as fishbone diagrams was not said to be used too often in the hospital; the focus in MBF is on learning how to track indicators.

While two out of three respondents concur that *Continuous Improvement (CI)* has always been a part of the professional groups' ethic, some projects use it more than others. It is not yet a hospital wide ethic as it is still viewed as "too jargony", as one respondent explains. Another subject explains that while many of the professionals such as doctors and nurses are familiar with the CI ethic, many other hospital employees are not. One main difficulty lies in creating a CI ethic among members of the non-professional or support groups. More

training and education is needed in order to sensitise these workers to the relevance of a CI ethic.

Teamwork (TEM) has had a long history with the hospital but the concept of interdisciplinary teams has "really taken off", according to one respondent, as a result of the new Accreditation standards. With the old standards, one respondent explains, teams never looked at its quality of care. The new standards have introduced the use of interdepartmental teams monitoring their quality.

Customer Focus, termed by the hospital as "the voice of the patient", is said to be a very strong force in the hospital. It drives many of the decisions and is being closely monitored, as one respondent explains, through a \$14,000 software program recently purchased to monitor *customer satisfaction*. The use of a patient satisfaction measure has managed to bring about a shift from relying only on outcome measures which are focused around the organization, to a focus on the patient. One respondent explained however, that while a patient focus has always been there for professional groups, the challenge was enlarging this focus to other members of the organization. The challenge was getting support groups, like lab technicians for example, "to appreciate the impact their work has on the patient".

A system's perspective was said to have a long tradition in the hospital. There's been a long understanding that the system as a whole and not solely the individual must be taken into

account in patient care. As one respondent explained, "its the only way...everything in the system will affect the patient". The successful CQI projects are said by respondents to be the ones that work based on the the system perspective tenet.

Involvement of *all organizational members* (ALL) is said by one subject to be "part of our management ethos". Many employees actually comment that the hospital has too many committees. Each CQI project will involve all members of the process under examination and the new accreditation standards involve all members of the organization. The Quality Manager, however, feels that not all members of the organization see their place in the quality movement yet and that "more work" must be done to bring them in. More hospital-wide training and education, sensitization and exposure to demonstration projects would help to get more and more organizational members involved in CQI.

A *quality culture* is said to exist in the hospital but not openly. There are many quality elements that are embedded into the organization's culture such as empowerment, decentralized or point of care decision making, risk taking, teamwork and a customer focus.

As the Quality Manager explains, "we have a quality culture but we don't talk about it" - because of the organization's adversity to jargon.

5.4.2 Research Question #2

Only one of the eleven TQM variables was said to impede the CQI process: a lack of resources for *T&E*. The inadequate TQM training and education was said to slow down the CQI process. T&E had to be done informally in order to facilitate the buy-in required for CQI.

One new variable was identified as impeding CQI's progress: *external environment*. The lack of resources, moreover the huge budget "slashing", mergers and hospital closures have created an atmosphere of fear, paralysing rather than empowering health care workers. With such fear in the air, people can not make quality their priority, survival is their priority.

Since this hospital feels it is just trying to stay afloat, quality is something that becomes increasingly difficult to advocate without adequate resources.

5.4.3 Research Question #3

The hospital's *Quality Department*, more than senior management, was an unequivocal driving force, not merely the facilitator, of TQM. The champion of TQM for this hospital was the Quality Manager who introduced it to the hospital and drove it through the organization. The quality department provided the T&E by distributing literature on quality and by serving as a coach and mentor for all those involved in CQI in the hospital.

Two additional drivers were identified by the subjects: *Demonstration Projects* and *Council*. For this hospital, successful projects served as one of the strongest forces to drive other members of the organization to buy-in to the CQI process.

Accreditation Council was also felt to be a driving force behind CQI. The hospital was a pilot site for the new Accreditation standards and the resulting interdisciplinary teams and inclusion of all members of the organization was maintained after accreditation was over. As the Quality Manager explains, accreditation was "a very motivating, exhilarating experience...they said wonderful things about the caring in this hospital about the quality of services offered to the patient". As another respondent explains, accreditation has been a major "change agent" not only for the hospital but it has managed to "bring TQM terminology to a national level".

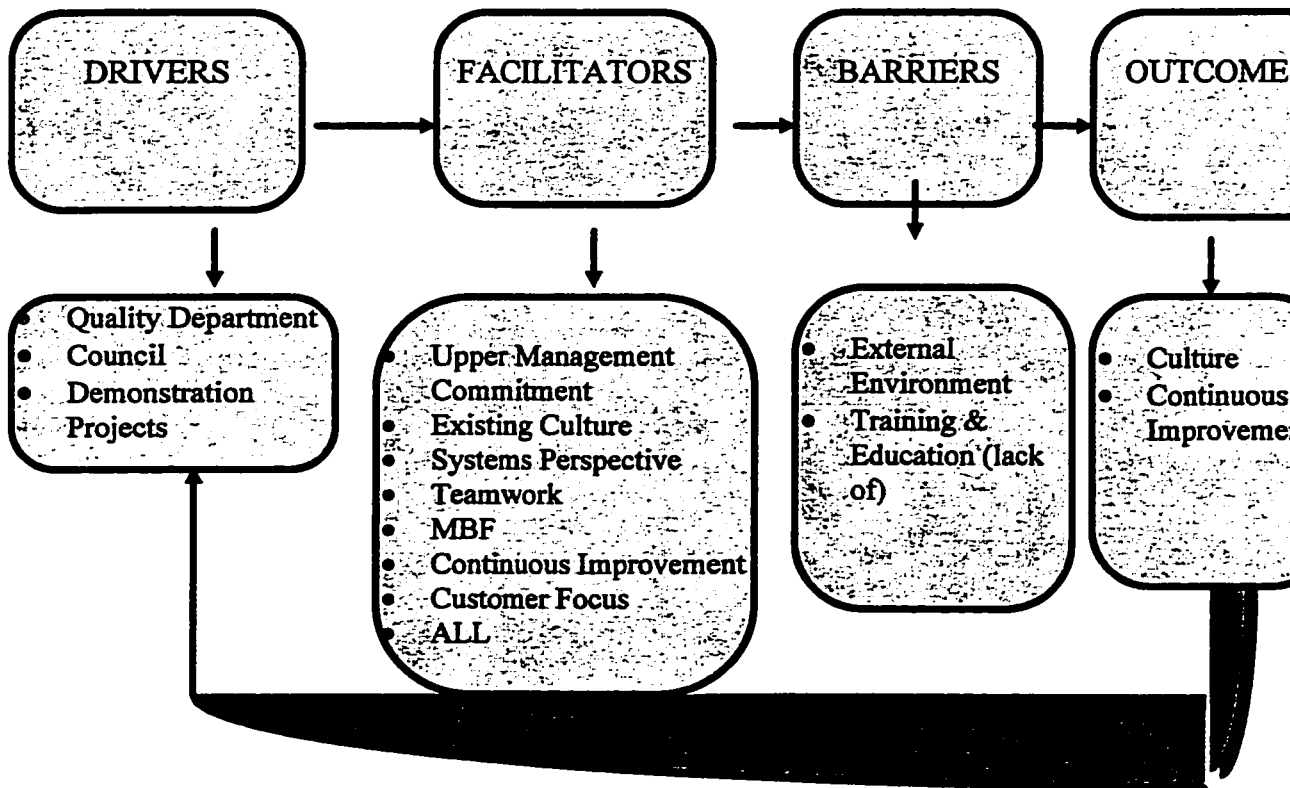
Other facilitators of CQI from the literature that were supported by this case were: *Upper Management Commitment, Management by Fact, Teamwork and Systems Perspective*. All were said to facilitate CQI's adoption because they all were already a part of the organization's philosophy. Since these variables were already a part of the organization's philosophy, *existing culture* is added to this hospital's list of variables that facilitate CQI's implementation.

5.4.4 Research Question # 4

Research question # 4 was supported by this case as all subjects described the TQM change as tectonic. One subject described it as an "intermediate level of change" rating it a three out of five, one subject described the change as "lots of small, small, small changes leading to a tremendous change over time". The changes were small because the hospital was "careful not to disrupt". One subject rated the change as "nothing drastic". In their view, a few years back CQI represented a larger change but due to the environmental uncertainty and fear the change is only a one and a half when compared to the drastic changes brought about by mergers, budget cuts and hospital closures.

5.4.5 Research Question # 5

Below is the framework for Case #3:



The above framework describes the TQM process for Case #3. Variables introduced in this case that were not in the hypothesised framework are Council (CCHSA), EE (external environment) and EX CUL (existing culture). The drivers are Quality Department and Council. The facilitators are Upper Management Commitment, External Culture, Systems Perspective, Teamwork, Management By Fact, Continuous Improvement ethic, Customer Focus, and involvement of ALL organizational members. The barriers inhibiting TQM's adoption were not enough Training & Education and an External Environment of budget cuts. Once these barriers are overcome the hospital has achieved its desired outcome, a TQM culture. For the variable Supplier Partnerships, as there was no consensus on its use in the hospital it is left out of the empirical framework for Case #3.

5.4.6 TQM Success Scale

Case #3 received mixed responses from the "experts" in the survey so it was classified as an "in process/benign success" TQM hospital. The three interview subjects gave it a mean success rating of 4.67 out of 7. Two subjects gave it a five out of seven and one gave it a four out of seven.

6.0 CROSS CASE ANALYSIS AND DISCUSSION

6.1 Final Framework

Miles and Huberman (1984) recommend the use of "conceptually ordered displays" to demonstrate research evaluation of findings. Accordingly, conceptually ordered displays

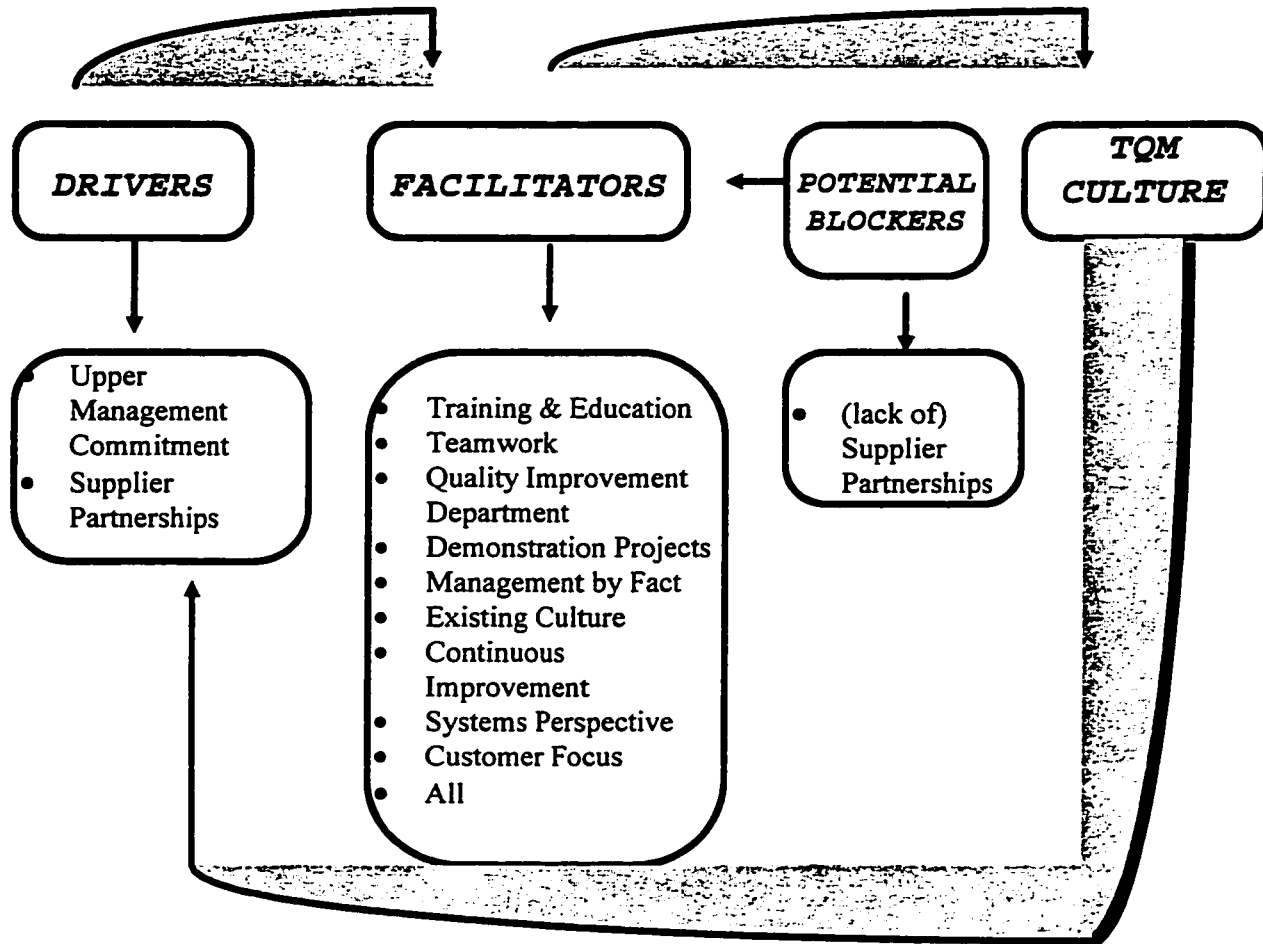
were created to answer research question #1 (appendix O). The aggregated results for research questions #2, #3, #4 and #5 are displayed in the revised model discussed below. The aggregate results of each case answer the research questions posed in this study. The concluding framework (Research Question #5) as well as each variable (Research Question #1) and their role as either a facilitator (Research Question #2) or a barrier (Research Question #3) will be explained in this section next.

First, the aggregate results of the study demonstrate support for Research Question #4. TQM change was brought about in each hospital tectonically. TQM change represents small, incremental steps ultimately leading over time to a dramatic change in organizational processes and outcomes. For all three cases, the TQM change is still occurring. Case #1 is much further along in the process than Cases #2 and #3 as Case #1 was classified as a "successful TQM" organization, while the other two were classified as "in process TQM" organizations.

In examining Research Question #1, all 11 TQM variables identified by the literature were used by the health care organizations examined in this study. In addition to the 11 original variables, two new TQM variables were consistently identified by research sources: Demonstration Projects and Existing Culture. All 13 of these variables make up the final framework for a TQM health care organization presented next. The framework represents a synthesis of the empirical frameworks derived for each case and the framework derived from

the literature review. The final framework demonstrates a TQM program in a health care organization that begins with "Drivers", is facilitated by "Facilitators" and may be impeded by "Potential Blockers". Below is the final framework for a TQM Health Care organization.

Final Framework:



The final framework consists of ten TQM variables that act as Facilitators of the TQM process - they help encourage TQM's use and adoption throughout the organization. The facilitators are, from the existing literature: Training and Education, Teamwork, Quality Department, Management by Fact, Continuous Improvement ethic, System's Perspective, Customer Focus, Involvement of All organizational members; and two new variables: Demonstration Projects and Existing Culture.

Two variables, Upper Management Commitment, consisting of visionary leadership and model behaviour, and Supplier Partnerships, in the form of the Board of Directors, Accreditation Council and government standards, however, do even more that facilitate, they motivate or stimulate the TQM process. They are the Drivers of the TQM process. Drivers initiate the TQM process and provide the constant motivation and support (financial, or human) to keep the TQM process going.

The "Barriers" heading has been removed from the revised model since none of the TQM variables in the study were reported to be barriers to TQM's progress; rather, when TQM variables were not exhibited in one of the case hospitals, their exclusion acted as a barrier to TQM's progress. The increasing strength of other TQM variables eventually led to the addition of the missing variables, ultimately leading to a complete TQM organization, one where all variables are exhibited. Examples of such exclusions are provided as each variable is discussed.

The new heading, "Potential Blockers" was added to the model with one variable, Supplier Partnerships (SUP), falling under this heading. Potential Blockers are just that, they consist of elements that, when experienced, have the potential to block the TQM change process.

The desired TQM state is a health care organization that exhibits all thirteen TQM variables. The first step towards TQM in an organization are the Drivers. The next steps are the facilitating variables. The arrow from TQM culture back to the Drivers demonstrates TQM's circular, continuous nature where all TQM variables are continuously exhibited and improving. The arrow from Potential Blockers back to Facilitators, the arrow from Drivers to Facilitators and the arrows from Facilitators to Potential Blockers and from Facilitators directly to TQM, demonstrates a vacillation between Facilitators, Potential Blockers, and the desired TQM state. The vacillation between Potential Blockers and Facilitators shows the resistance Potential Blockers create pulling an organization away from its desired TQM state. Once the resistance is worn down, the path to the desired TQM state is cleared. Each of the variables in the model will now be discussed.

6.2 TQM Variables in Health Care

6.2.1 Drivers

Upper Management Commitment

As the literature on TQM reveals, quality is viewed as ultimately and inescapably the responsibility of top management (Hackman & Wageman, 1995). Senior management

commitment to the TQM movement was clearly exhibited (14/14 sources demonstrated senior management commitment - see appendix O). It was members of senior management who demonstrated strong commitment to TQM allowing it to be driven through the organization. For two of the three cases, the TQM movement was introduced, led and championed by senior management. In one of the In-Process TQM case hospitals, the champion was a senior physician and nurse team. In the successful TQM hospital, the champion was the CEO, a non-clinician who had the most decision making power and access to the most resources. The existence of senior management commitment whether it be the CEO or a clinician is therefore a driver of the TQM process. It was senior management who either singlehandedly modelled and/or pushed TQM through the organization, or, as in Case #3, empowered others to drive TQM through the organization.

The leaders of TQM, in all three hospitals, demonstrated a vision which they clearly modelled throughout the organization. In Case #1, subjects explain that TQM was the CEO's vision as a result of some conferences that he attended and he was the one who pushed TQM through the organization. Moreover, the CEO was described by interview subjects as someone who "walked the talk", he practiced the TQM principles that he preached.

In Case hospital #2, the physician/nurse team were clinicians who were able to see the link between their own clinical practice and the TQM theory that was being taught and written

about in both the management and health care literatures. As one of the TQM champions in this hospital explains,

if you read books and if you read journals, you realize that there is a body of literature that exists in business and over the past decade there's actually a whole body of literature that exists in health care. It's apart from business but fundamentally what it really is, is the elimination of infection and death in post delivery. The concepts are exactly the same as in the latter part of the last century...

Moreover, by introducing TQM into their own practice, they modelled the TQM principles.

In Case #3, it was the quality coordinator who had the vision, and with unconditional support of the senior managers, they were able to champion TQM throughout the organization.

Supplier Partnerships

TQM Supplier Partnerships in health care extends beyond the health care institution itself to include many other elements as well such as the health of the patient, the patient's family and the government (Milakovich 1991) as previous literature suggests. Supplier partnerships has been shown in this study to extend to hospital Board of Directors, Voluntary Accreditation bodies and the government.

The health of the patient has been recognized in the past as a supplier in the health care process by Eskildson and Yates (1992). The results of the present research show that the

government also recognizes the patient as a supplier in the health care process. Health care organizations with a TQM focus recognize that the health of the patient needs to be controlled for when setting standard indicators. The government has recently introduced a new classification of disease by severity and mortality (APR DRG 12 rather than APR DRG 8). This new classification can help with setting standard indicators within and across hospitals since it accounts for severity and mortality expectations - the health or current condition of the patient. With these new standards being developed, the government is paving the way for health care organizations to think and act on much clearer quality principles.

In addition to the increasing role the government is playing in driving the TQM movement, volunteers such as members of hospital Boards of Directors, and accreditation bodies such as the Canadian Council on Health Services Accreditation, all demonstrate close partnerships with all three health care organizations examined in this study. Their partnership and commitment to these health care organizations were instrumental in driving the TQM process. In some cases it was the Board who first introduced the concept of TQM to the health care organizations. In Case #1, the members of Board of Directors had expertise in TQM and transferred this knowledge over to the health care organization, providing them with a constant source of guidance, support and TQM training and education.

In Case #2 Supplier Partners who were committed to TQM provided much needed TQM training and education, free of charge, to members of the hospital. This partnership helped drive the TQM process in this hospital since it provided the necessary training and education, providing the leadership and commitment that compensated for the resources the senior management was unable to procure for TQM training.

The final Supplier Partnership that drove the TQM process in all three health care organizations was the voluntary Canadian Council on Health Services Accreditation. Their revised 1995 standards are based on CQI principles. Their new standards are pushing all Canadian health care organizations towards TQM principles. Moreover, they not only set the new standards for health care organizations to follow, they provided guidance and support to all three cases examined here. In Cases #1 and #3, there was a very strong partnership between Accreditation Council and the hospitals as members of each hospital were members of the Council's Board and played instrumental roles in initiating the revised standards. They were able to bring back to their respective hospitals their familiarity with CQI principles and the new standards. Both these hospitals were pilot sites for testing Accreditation's new standards as well, which as interview subjects explain, served to affirm that the hospital was on the correct track with TQM. As a respondent from case #3 explains, accreditation was "a very motivating, exhilarating experience...they said wonderful things about the caring in this hospital about the quality of services offered to the

patient". As another respondent explains, accreditation has been a major "change agent" not only for the hospital but it has managed to "bring TQM terminology to a national level".

The new standards also provided an impetus for hospitals to adopt the TQM focus. Council recommended the establishment of specific cross-functional, interdepartmental teams based on CQI principles. Following Council's cue, each hospital established such teams, many for the first time. The establishment of these teams forced the TQM wheels into motion. As respondents from Case #1 explain, "that initial accreditation that we had was really the first time very often that everybody that was involved in care of a particular type of patient had gotten together and sat down in the same room, they had just never talked before". For Case #2, Council's shift to the new standards motivated the hospital to shift to CQI as well.

Finally, since the Drivers of TQM are essential requirements to getting TQM off the ground in a health care organization, a lack of any of the two Drivers would clearly inhibit or prevent TQM from being introduced to a health care organization. Therefore, while the variables Upper Management Commitment and Supplier Partnerships, when exhibited, are drivers of the TQM process, if they are not exhibited, the TQM process will not get off the ground. This supports Fleisher and Nickel's (1995) conclusion that a lack of a TQM champion creates a barrier to TQM's full implementation.

Thus, the drivers of TQM are Upper Management Commitment and System's Perspective.

System's Perspective consisting of the government, Council and Boards of Directors.

Drivers stimulate and motivate the TQM process often providing the resources required to embark on the project. The converse of this also holds true. An organization without Drivers of TQM will not be able to effectively get TQM off the ground.

6.2.2 Facilitators

Training and Education, Interdisciplinary Teamwork, the Quality Department, Management by Fact, a Continuous Improvement ethic, a System's Perspective, a Customer Focus and Involvement of All organizational members were exhibited in all three health care organizations examined, in much the same way as the literature suggests. They are classified here as Facilitating variables. They help transmit the TQM philosophy throughout the organization.

In addition, two new TQM facilitating variables were uncovered by the current research: Demonstration Projects and Existing Culture. All three case hospitals discussed the establishment of pilot, interdisciplinary teams that were trained and functioning based on TQM principles. These are called "Demonstration Projects" and serve as a form of internal benchmarks. For Case #1, these Demonstration Projects were introduced in the beginning of the TQM process, serving as tests to see if TQM principles could improve certain aspects of the hospital's processes and outcomes. The demonstration projects selected were high

profile ones whose success was visible to all members of the organization. Each project's success served as an impetus to establish more and more TQM teams, with the hopes that the entire organization would eventually become involved on a TQM team.

Both Cases #2 and #3 are still in the Transition Stage that uses Demonstration Projects. They have interdisciplinary TQM teams set up, trained and are working on improving processes and outcomes but do not yet have the entire organization involved in such projects.

Fleisher and Nickel's (1995) research concluded that a lack of benchmark organizations creates a barrier to TQM's full implementation. The findings of this research takes this one step further with two conclusions. First, the research here suggests that a lack of internal benchmarks, seen as Demonstration Projects, would prevent the full implementation of TQM and second, the converse holds true. The existence of Demonstration Projects facilitates the full implementation of TQM.

As for the second new variable, Existing Culture, the literature on TQM in health care discusses certain aspects of a health care environment that make the organization ripe for TQM (Fried, 1992; Spoon et al, 1995). Some of these aspects are the Continuous Improvement ethic (Spoon et al, 1995) and the scientific nature of health care (Fried, 1992; Spoon et al, 1995). Findings from the study presented here indicate that there are indeed

certain existing elements of a health care organization's current culture that are consistent with TQM tenets. The continuous improvement ethic (CI), the scientific nature of systematically collecting data (MBF), the system's approach (SP) to dissecting a problem, an empowered workforce, an environment of trust and the elimination of fear were all TQM tenets that each Case hospital indicated already existed in the hospital, easing TQM's formal introduction of these variables into the organization. Thus, the variable Existing Culture is added to the list of TQM variables that facilitate TQM's full implementation.

6.2.3 Potential Blockers

Supplier Partnerships played a dual role. While certain partners drove the TQM process, others hinder its progress. The government and the external environment are supplier partnerships that represent potential blocks to TQM's complete success. From a TQM perspective, suppliers to the health care system extend beyond the immediate hospital. They include the government and the external environment. The Canadian health care system is a public one and as such is greatly affected by government actions. In recent years both the provincial and federal government have severely reduced health care funding. Quebec hospitals have also been experiencing hospital closings and mergers. Such actions were repeatedly said by respondents to hinder the TQM process.

The external environmental influences are a part of the larger health care system as a whole and their behaviours, according to the systems perspective philosophy, either directly or

indirectly impacts on the individual hospital's system. In this case the external environment and the government have a negative impact on the hospital as it is creating a sense of fear, frustration and chaos. The severe disruptions to the health care organization as a consequence of government actions creates an external environment dominated by this fear and frustration. Hospitals have a tremendous task of managing to overcome an environment of fear and frustration, of learning to function with dwindling resources while still maintaining TQM principles. One respondent called it "a double edged sword" since on the negative side, the government's action serve to frustrate the TQM process, while on the positive side, the reduction in funding also forces hospitals to closely scrutinize, re-evaluate and improve processes. As much as resources allow, the hospitals use TQM principles to do this. As a result of government budget cuts many health care workers express, though, that the resulting culture of fear and frustration makes it difficult for them to remain focused on principles of "quality" and "customer focus".

Finally, consistent with Fleisher and Nickel (1995) findings, a lack of certain key variables also blocked the TQM process. For example, access to the resources required for Training and Education prevented Cases #2 and #3 from providing as much TQM training and education as they felt was necessary. A lack of sufficient training and education was considered by members of these organizations to be a barrier to TQM's success as well. This supports Fleisher and Nickel's (1995) finding that a lack of TQM training is also a barrier to TQM's full implementation. The lack of any TQM variable is therefore

concluded here to act as a barrier to TQM. As any TQM variable can be a barrier, the Barrier heading was removed from the Final Framework presented here.

Both cases #2 and #3 were unable to introduce TQM to ALL members of the organization. For both cases, several TQM teams have been established but all members of the organization are not involved in a TQM team. It is expected by interview subjects that in a period of time more TQM teams will be established and more members of the organization will become familiar with and involved with these teams.

Case #1 provides evidence that a hospital practicing all TQM variables is associated with successful TQM. Case #1 was the only case that was able to provide thorough and continuous TQM training and education and involve all members of the organization. It is the only case out of the three examined in this study that is a successful TQM organization.

As Cases #2 and #3 continue on with their TQM process, respondents indicated that more and more members of the organization are expected to be involved and trained on TQM principles, which will eventually lead them to their desired TQM state.

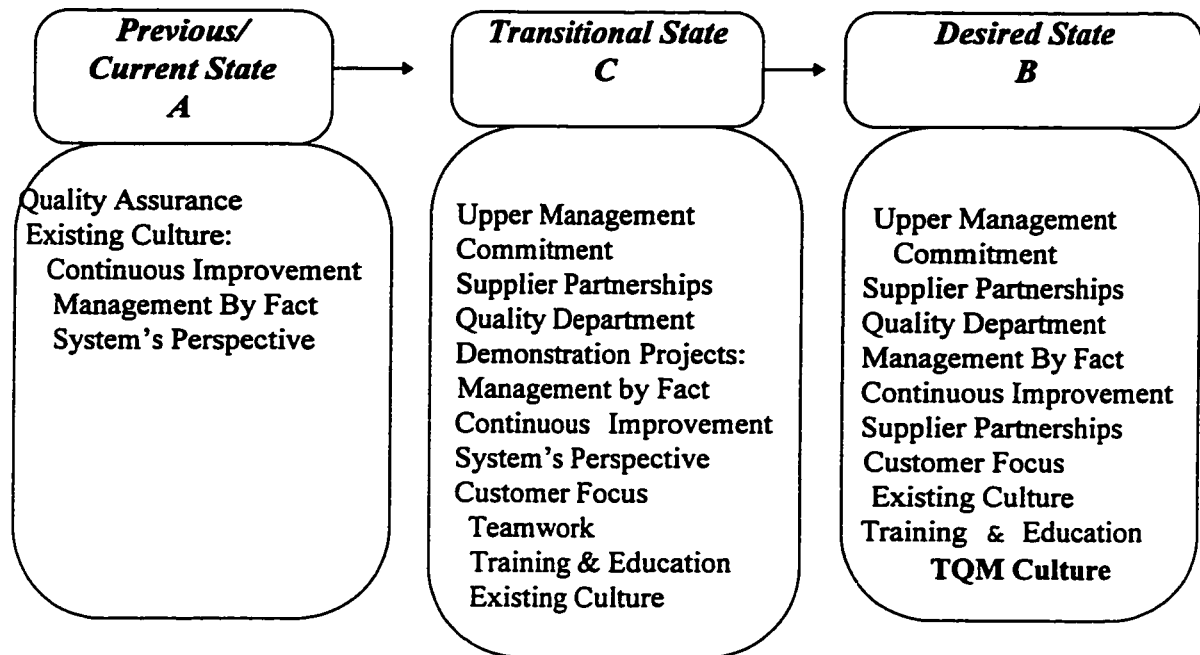
Thus, the TQM health care variables identified in research question #1, their roles (research question #2-4) and the final framework (research question #5) has been explained. The experiences of the three cases examined for this study answer the five research questions and guided the development of the Final Framework discussed above. Each

hospital in the study represented different stages of their TQM change process. As a result, in addition to answering the five research questions, the present study provides some new insight into stages of TQM organizational change. The following section discusses the stages of TQM organizational change as uncovered in this research.

6.3 TQM Change Model

While the Final Framework for a TQM health care organization explained above represents the ideal organization that has managed to completely and successfully implement TQM, the majority of health care organizations have not yet reached this ideal TQM state. Rather, they are still in the organizational change to TQM process. The hospitals analyzed in this study represented various stages of TQM implementation. Beckard and Harris' (1977) model of "organizational change as a transition state" is introduced here to classify the three hospitals' stages of TQM change, with the various variables introduced in each state demonstrating the tectonic change that TQM represents for hospitals.

TQM Change Model:



Beckard and Harris' (1977) models suggests that in order to get from the original state A to the desired state B, one has to go through state C, a transition state. Case #1 had already achieved the desired state of TQM while Cases #2 and #3 were still in the transition state of Beckard and Harris' (1977) model.

Applying this model to TQM change we see first that in state A (the current state or the state before TQM change) the hospital still uses a traditional Quality Assurance department, rather than a Quality Improvement or TQM department indicating that a hospital in state A

has not yet begun the evolution described in the literature from QA to TQM. Second, the existing culture of a hospital, found in this research to help ease the TQM transition, will however be present in any state of TQM change and therefore already exists in state A. Elements of this existing culture include the professional work ethic of Continuous Improvement, scientific methodology for data collection (MBF) and a System's Perspective.

The next state in the TQM change process, the Transition State (state C) exhibits first and foremost the Drivers of the TQM process: Upper Management Commitment and Supplier Partnerships. The Drivers initiate TQM in the hospital. During this stage, the quality assurance department is transforming itself into a quality improvement department. The key indicator of a hospital's transitional state to TQM is the existence of Demonstration Projects. These Demonstration Projects are interdisciplinary team pilot projects that exhibit the use of more and more TQM variables such as Customer Focus, Teamwork, and Training & Education. The factors of a hospital's existing culture that predisposes it towards TQM such as Continuous Improvement, Management By Fact and a System's Perspective slowly become formalized in the organization as the Demonstration Projects become more and more visible. Over time, more and more Demonstration Projects evolve in the organization until ALL members of the organization are involved in the TQM process.

Finally, the gradual expanded use of Demonstration Projects as well other TQM variables represents the tectonic nature of the change that is taking place in the organization. The

final, desired state of the organization is achieved when demonstration projects are no longer Demonstration Teams or Pilot Projects; but rather, have become an integral and absolute part of the hospital. Once such a state is reached, having successfully diluted a TQM hospital's Potential Blockers, all TQM variables are used by the entire organization making it the desired TQM organization.

In sum, the ultimate analysis of the three cases examined here led to the development of two new models. The first is a new paradigm for a TQM health care organization. This paradigm, or Final Framework, takes into consideration the eleven TQM variables uncovered by the TQM literature and introduces two new variables into the TQM framework. As well, the paradigm demonstrates the strength of each variable in a TQM organization; ie, whether the variable drives TQM, facilitates TQM or is a blocker of TQM's full implementation.

The second model derived from the present study is the TQM Change Model, based on Beckard and Harris' (1977) classic organizational change model. The TQM change model takes into consideration the three generic change stages, demonstrating where each TQM variable fits in these stages. The model also demonstrates the tectonic nature of TQM change: to avoid shocking the organization with a sudden drastic change, TQM variables are introduced slowly into an organization, in three stages culminating with the ultimate TQM organization.

It is important to note that the present research and its findings are not only significant for TQM practice but also serve to aid the advancement of TQM theory in academia. The following section will explain the controversy TQM has received in academia and how the present research strengthens the argument in support of TQM's construct validity.

6.4 TQM'S Construct Validity

Up until recently relatively little academic research has been conducted on TQM (Waldman, 1995). As a result, as Hackman and Wageman (1995) explain, today TQM has become a controversial topic whose worth and impact people are beginning to discuss. TQM has recently been given much attention in the academic literature (eg, the Academy of Management Review, summer, 1994; the Canadian Journal of Administrative Sciences, Spring, 1995; the California Management Review, Spring, 1995; the Journal of Organizational Change Management, second issue, 1994). The systematic evaluations published here have managed to link TQM implementations to successful organizational outcomes (eg, Benson, Saraph, and Shroeder, 1991; Kaldenberg and Gobeli, 1995; Deming 1982; Garvin, 1987 and Gustafson and Hundt 1995) and have advanced TQM's conceptual foundation and theoretical direction (eg, Cardey et al, 1995; Dean and Bowen, 1994; Hackman and Wageman, 1995; Harris, 1995; Spencer, 1994). One paper in particular, by Hackman and Wageman (1995), advances the field of TQM by addressing the critical issue of TQM's validity as a construct.

Hackman and Wageman's (1995) assessment demonstrates TQM's convergent and discriminant validity. Their assessment looked at the ways contemporary TQM implementations are consistent with the founders' tenets and the ways current TQM practices differ from the authors' prescriptions. Convergent validity reflects the degree to which the versions of TQM described by its founders and observed in organizational practice share a common set of assumptions and prescriptions (Hackman and Wageman, 1995). Hackman and Wageman (1995) conclude that TQM passes the convergent validity test finding substantial agreement among the movement's founders about the key assumptions and practices of total quality. They also found that contemporary TQM practice is generally consistent with the founders' ideas.

The study presented here supports Hackman and Wageman's (1995) conclusion as it demonstrates that TQM's actual practice is consistent with the founders' ideas. All TQM variables identified from the literature were found to be used in the organizations analyzed. In addition, as the term CQI is used interchangeably with the term TQM in theory, CQI in practice in the health care organizations analysed here also do not vary from the TQM philosophy.

Discriminant validity for the TQM construct refers to the degree to which TQM philosophy and practice can be reliably distinguished from other strategies for organizational improvement (Hackman and Wageman, 1995). Hackman and Wageman (1995) found that

in reference to the writings of the TQM founders, TQM is indeed distinct from other change programs such as job enrichment, performance-contingent rewards and goal setting. However, with respect to contemporary organizational practice, TQM came close to failing Hackman and Wageman's (1995) discriminant validity test. Hackman and Wageman (1995) found that selective principles advocated by the TQM founders are now commonly implemented in the name of TQM. Many practitioners are talking about "involvement" and "empowerment" as if they were synonymous with TQM. Thus, Hackman and Wageman (1995) managed to demonstrate TQM's validity as a construct while also noting a possible trend in organizations to misunderstand (and thusly misuse) the TQM philosophy.

The cases analysed here do not support this trend. In fact, they often demonstrate the opposite by adhering or striving to adhere to all TQM tenets recognizing that until all the variables are in use in the hospital, they should not call their hospitals TQM organizations. Moreover, the TQM principles used by the organizations were not used selectively. Although some variables may have been blocked, the organizations' ultimate intents are to incorporate all variables into daily practice. Hence, this research's findings strengthen both TQM's discriminant and convergent construct validity. In addition, the multiple sources of data for the current research provide it with a source of triangulation, thus the validity of the present study is again enhanced.

7.0 CONCLUSION

7.1 Limitations

All qualitative research, no matter how tightly designed or carefully carried out, is subject to limitations. The research presented here is subject to limitations of researcher bias and the validity limitations inherent to an examination of a relatively new theory. Each will be discussed next.

Miles and Huberman (1994) explain that definitions are sharper when two researchers code the same data set, testing as well for inter-coder reliability. Such analysis, however ideal, was beyond the scope of this research project due to budget limitations and time constraints. Since this could threaten the reliability of findings in study's of this nature, additional measures were taken in order to compensate for this challenge. First, a retrievable data base was created to allow for additional, future analyses and for additional verification of findings (Miles and Huberman, 1994). Second, multiple sources of data collection were used to serve as a form of triangulation and third, strict procedures such as common data reduction, data display and coding sheets were used for each source analyzed.

Only one researcher was available to conduct the in-depth interviews and analyse all data sources. As a result, threat of researcher fatigue and information overload exists (Davis and Cosnza, 1993, p. 305). Such fatigue and overload can obscure the researcher's interpretive ability. As well, the use of one researcher may tend to skew the research results and limits

objectivity (Miles and Huberman, 1984). Multiple researchers are often ideal since they can balance out human bias' and enhance objectivity (Miles and Huberman, 1984). Again, the use of multiple sources and strict procedures were adhered to in order to compensate, as much as possible, for this limitation.

The initial classification of cases provided the research with another limitation. As no measure for TQM success exists, the reliability of such a classification can be questioned. Precautions were therefore taken in order to reduce the study's reliance on the classification. The classification was not used as a major source of data. Instead, it was used as a compliment to the more in-depth analysis conducted within each case.

One final word of caution is that the models developed here have not yet been tested. While they appear to be face valid, only additional research on TQM in health care can enhance their validity. Future researchers are invited to apply these models to TQM health care organizations in order to test their validity and usefulness to such organizations.

On a very positive note, this study complements earlier research on TQM's construct validity and thus, the generalizability of the research findings to universal TQM organizations is enhanced by this research.

7.2 Future Research

TQM is still a relatively new phenomenon in academia. Moreover, TQM in Canadian health care is still in an infancy stage. As such there is a tremendous need for additional research. First, as mentioned above, future researchers are encouraged to continue to provide in-depth examinations of TQM's implementation in health care in order to test the models developed here and provide the field with more concrete solutions.

Second, it is hoped that health care workers themselves continue to document their TQM experiences and share these experiences with researchers and others. Although anecdotes alone are not reliable forms of data, more documentation and shared experiences would provide researchers with a wider pool of data from which to work. It would also encourage a more open environment so that information can be shared and knowledge about health care's specific needs and requirements can be gained. As health care employees are working ardently on determining health care specific outcomes such as "standard indicators" and benchmarks, future researchers and health care workers are encouraged here to work in tandem in developing these imperative measures.

Finally, ways to validly and reliably measure universal TQM outcomes and success are in great need. The development of such measures would eliminate the current barriers researchers face when trying to examine TQM and would spur additional research, enhancing both the fields of TQM in health care and TQM in general.

7.3 Implications for Management and Managers

The findings of the present study are encouraging for those wondering whether TQM can and should be used in their health care organization. The findings show that health care organizations have managed to implement TQM in their organizations in the way TQM is intended to be implemented (ie: according to TQM theory). In addition, while the TQM change process is slow, anecdotes reveal successful outcomes. For health care workers who are wondering how to begin implementing TQM in their organizations, the paradigm provides a framework from which to begin.

The first step in implementing TQM would be to ensure that the TQM Drivers are in place. Ideally, senior management commitment secures the resources, time and commitment required to bring about TQM change. However, if senior management is either not committed enough or knowledgeable enough about TQM, TQM change can still be driven through the organization. Supplier Partnerships with either Boards of Directors or Accreditation Council are bodies that health care organizations can and have turned towards to get the resources, knowledge, time and commitment required to drive the TQM change through their organizations.

In the cases examined here, Supplier Partnerships were supportive, devoted and instrumental in bringing about the TQM change. In some instances it was the organization who approached the Supplier for help, while in other instances the Supplier

came to them. Health care workers should not be afraid to approach Suppliers and request their support. Health care organizations should also be open to offers made by such partners as well.

The next step, after setting up the TQM Drivers, would be to ensure that a Quality Department is set up according to TQM philosophy and not QA philosophy. TQM training and education should be provided next, if not to the entire organization at once, than at least to key players such as senior management, quality department team and demonstration project teams. Finally, Demonstration Projects that represent visible areas in the hospital should begin to be set up to use the rest of the TQM variables. Through these steps a health care organization should be on its way to achieving TQM.

TQM is indeed a reality for the Canadian health network. The primary step, senior management commitment and/or establishing Supplier Partnerships is key. If these partnerships aren't yet established in a hospital, there are many places to turn. Aside from the Partners identified in the research here, universities and other health care organizations are two more places one can also go when looking for guidance and support in embarking or evaluating a hospital's TQM program.

7.4 Concluding Remarks

The research presented here develops a paradigm for a TQM health care organization, offering academics and managers of non-business organizations such as health care a basis from which to begin examining and/or implementing TQM. This paradigm or framework was formulated from theoretical guidelines drawn from the literature review and empirical findings on the TQM process from the three Canadian health care organizations examined. The study identified thirteen variables that are essential to a TQM health care organization. In addition, research lead to the identification of health care specific Drivers and Blockers of TQM's full implementation. The framework was also presented in terms of where each TQM variable fits in each stage of Beckard and Harris' (1977) Organization Change model. Such classifications should help health care organizations identify where they are in their quest for TQM and the steps that may still need to be taken in order to complete their TQM transition process.

The research presented here answers a question that has challenged TQM theory and health care organizations for years. The research demonstrates that ultimately, TQM, with all the principles identified in the literature review, is indeed applicable to health care organizations. The research demonstrates that TQM is useful to organizational areas dissimilar from those historically targeted by the majority of TQM scholarship and practice.

The research presented here also uncovered that while TQM health care organizations follow the same tenets as business and manufacturing organizations do, applying TQM to a

health care setting does have some unique implications. The most significant of these implications are the dominant roles Existing Culture and Supplier Partnerships play in a health care organization.

In terms of a health care organization's Existing Culture, a health care worker's predisposition towards some of TQM's basic tenets eases TQM's formal introduction into the organization. In fact, formally introducing TQM breaks down the barriers that historically existed between departments providing a means for improved communication between doctors, nurses and other health care workers, an issue that has traditionally plagued the health care environment. A hospital's predisposition to basic TQM tenets makes TQM's formal introduction into a hospital simple, common sense. However, as in any organizational change situation, as common sensical as the change may be, it still takes time for the organization to fully adjust to the change. The transitional state of TQM in a health care organization presented in the Discussion section of this paper, represents this adjustment period.

Supplier Partnerships also play a unique role in a health care organization's pursuit of TQM. First, the role of suppliers are extended in a health care organization to go beyond the immediate hospital to include the surrounding government, volunteers and patients. Hospitals rely heavily on these partnerships. On the one hand, these partnerships serve to drive the TQM process; yet, on the other hand, they have the potential to significantly block

it. The potential blockers presented in this study, such as government budget cutting, hospital closures and mergers, create an environment, external to the hospital but a part of the larger health care system as a whole, that is filled with fear, uncertainty and frustration. These factors are, as Deming (1984) calls them, "Deadly Diseases" to a TQM organization.

If these diseases are to be cured, the government must be called upon to take a more active role in ridding the health care environment of its prevalent uncertainty, frustration and fear and in espousing and advocating TQM tenets. The development of such partnerships between health care organizations and the government is required if TQM is to prevail.

Finally, research demonstrates that the practice of TQM in health care is beginning to flourish. Moreover, the TQM movement is no longer merely a fad but something that is beginning to permeate many aspects of business, public institutions and society as a whole.

Organizations today can feel safe in their TQM implementation attempts as research continues to strengthen its construct validity. What the near future now calls for is organizations, most especially health care organizations, to work together with academics towards developing benchmarks that effectively monitor TQM processes and outcomes.

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APPENDIX - A
TOM VARIABLES BY AUTHOR

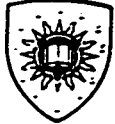
BALDRIGE	DEAN & BOWEN	HARRIS	HACKMAN & WAGEMAN	OLIAN & RYNES	WALDMAN
	Continuous Improvement	Continuous Improvement			Continuous Improvement
Customer Satisfaction	Customer Focus	Customer Focus	Customer Focus	Customer Focus	Customer Focus
Human Resource Utilization		Education & Training	Empowerment	Training, Recruitment	Quality Culture, Training
Leadership	Top Management Commit	Top Management Commitment	Top Management Commitment	Top Management Commit	Top Management Commit
Information & Analysis	Information & Analysis		Information & Analysis		Managment by Fact
Quality Results				Outcomes	
	Teamwork		Teamwork	Team Building	Teamwork
			Suppliers		Suppliers
			System Focus	System	System

APPENDIX - B

TQM VARIABLES

1. (SP) System's Perspective (Harris, 1995; Olian and Rynes, 1992; Waldman, 1994).
2. (CF) Customer Focus (Hackman and Wageman, 1995) (Dean and Bowen, 1994; Olian and Rynes, 1992; Waldman, 1995).
3. (UMC) Upper Management Commitment (Dean and Bowen, 1994; Hackman and Wageman, 1995; Olian and Rynes, 1992; Waldman, 1995).
4. (QD) A prominent role for the QUALITY DEPARTMENT in steering and facilitating the quality improvement effort (Waldman, 1995).
5. (ALL) Involvement of ALL ORGANIZATIONAL MEMBERS in the quality improvement efforts (Waldman, 1995).
6. (CUL) The development of a QUALITY CULTURE (Dean and Bowen, 1994; Hackman and Wageman, 1995; Olian and Rynes, 1992; Waldman, 1995).
7. (TEM) TEAMWORK (Dean and Bowen, 1994; Hackman and Wageman, 1995; Harris, 1995; Olian and Rynes, 1992; Waldman, 1995).
8. (MF) An orientation towards Management by Fact (Dean and Bowen, 1994; Hackman and Wageman, 1995; Olian and Rynes, 1992; Waldman, 1995).
9. (CI) Striving to CONTINUALLY IMPROVE employee capabilities and work processes (Dean and Bowen, 1994; Harris, 1995; Waldman, 1995).
10. (T&E) Training and Education (Harris, 1995; Olian and Rynes, 1992; Waldman, 1995).
11. (SUP) Attempts to get external SUPPLIERS involved in the quality improvement effort (Hackman and Wageman, 1995; Waldman, 1995).

APPENDIX C: SURVEY



Faculty of Commerce and Administration

May 28, 1996

Dear M. .

Please find attached a short survey asking you to rank hospitals in terms of their success at implementing Continuous Quality Improvement (CQI) throughout the hospital. The completed survey will be used as a subjective measure of successful/unsuccessful CQI hospitals - hospitals which will subsequently be interviewed for purposes of my thesis study. The ranking of hospitals will only be used in order to categorize the hospitals interviewed, to help determine which CQI factors are associated with successful CQI implementations and which CQI factors are associated with unsuccessful CQI implementations. The results of my study should provide valuable suggestions to health care professionals; providing them with some insight into what CQI in health care truly consists of and how it is successfully implemented.

Please be assured that the survey attached will remain anonymous and confidential. I can be reached at (514)489-9394. The survey can be faxed back to me at (514)382-7014. I thank you for your time and support.

Sincerely,

Suzannah Radnay

Of the following 20 hospitals, in your opinion, are each of the following GREATLY SUCCESSFUL CQI (continuous quality improvement), AVERAGE SUCCESSFUL CQI, NO CQI, AVERAGE UNSUCCESSFUL CQI, or GREATLY UNSUCCESSFUL CQI?

	GREATLY SUCCESSFUL CQI	AVERAGE SUCCESSFUL CQI	NO CQI	AVERAGE UNSUCCESSFUL CQI	GREATLY UNSUCCESSFUL CQI	DON'T KNOW
Monreal area:						
Montreal General Hospital	[]	[]	[]	[]	[]	[]
Royal Victoria Hospital	[]	[]	[]	[]	[]	[]
Sir Mortimer B. Davis - Jewish General Hospital	[]	[]	[]	[]	[]	[]
Montreal Children's Hospital	[]	[]	[]	[]	[]	[]
Hôpital Sainte-Justine	[]	[]	[]	[]	[]	[]
St. Mary's Hospital Centre	[]	[]	[]	[]	[]	[]
Lachine General Hospital	[]	[]	[]	[]	[]	[]
Lakeshore General Hospital	[]	[]	[]	[]	[]	[]
Queen Elizabeth Hospital	[]	[]	[]	[]	[]	[]
Hôpital Notre-Dame	[]	[]	[]	[]	[]	[]
Ottawa area:						
Ottawa Civic Hospital	[]	[]	[]	[]	[]	[]
Ottawa General Hospital	[]	[]	[]	[]	[]	[]
Children's Hospital of Eastern Ontario	[]	[]	[]	[]	[]	[]
Toronto area:						
The Hospital for Sick Children	[]	[]	[]	[]	[]	[]
Mount Sinai Hospital	[]	[]	[]	[]	[]	[]
Queen Elizabeth Hospital	[]	[]	[]	[]	[]	[]
The Toronto Hospital	[]	[]	[]	[]	[]	[]
The Riverdale Hospital	[]	[]	[]	[]	[]	[]
St. Michael's Hospital	[]	[]	[]	[]	[]	[]
Wellesley Hospital	[]	[]	[]	[]	[]	[]
The Doctor's Hospital	[]	[]	[]	[]	[]	[]
Peel Memorial Hospital	[]	[]	[]	[]	[]	[]
St. Joseph's Health Center	[]	[]	[]	[]	[]	[]

APPENDIX - D

SURVEY RESULTS

	<u>CASE 1</u>	<u>CASE 2</u>	<u>CASE 3</u>
Greatly successful CQI	1	1	1
Avg successful CQI	2	1	1
Greatly unsuccessful CQI			
Avg unsuccessful CQI			
No CQI			
Don't know	<u>2</u>	<u>3</u>	<u>3</u>
TOTAL	5	5	5

APPENDIX - E: INTERVIEW GUIDE

INTERVIEW GUIDE

INTERVIEWEE INFORMATION:

1. Name of hospital:
2. Name of interviewee:
3. What is your function/title?
4. How long have you been in this function?
5. How long have you been with this hospital?
6. Is this a teaching hospital?
7. Please sign the consent form.

INTERVIEW QUESTIONS:

1. In what year did your hospital's TQM program begin?
2. Who initiated TQM/ how was it initiated?
3. Explain how TQM was adapted/embraced.
4. Was TQM brought in gradually or all at once?
5. Use of TQM variables - read each variable separately, for each variable: Is the following variable used in your hospital? When was it introduced to the hospital? Variables: **upper management commitment, training and education, quality department, management by fact, continuous improvement, teamwork, customer focus, system perspective, supplier partnerships, involvement of all organizational members, quality culture.**
6. What factors or elements of the hospital's functioning helped to facilitate or ease the TQM implementation?
7. What factors or elements of the hospital's functioning hurt or impeded the TQM implementation?
8. Please explain your involvement with CCHS's new Accreditation standards. Can you tell me the impact the Council's new standards have had on your hospital?
9. On a scale of 1 to 7 (1=least successful,7=most successful) can you rate the success of your hospital's Accreditation process?
10. Would you say that TQM represented a small change, an intermediate level of change or drastic change in the hospital's processes. On a scale of 1 to 5 (1= small 5= drastic) how would you rate the level of change TQM represents for the hospital?
11. On a scale of 1 to 7(from 1 = least successful to 7= highly successful), how would you rate TQM's success in this hospital?
12. Please discuss anything you would like to add.

APPENDIX - F: LETTER TO POTENTIAL PARTICIPANTS

August 7, 1996

Dear N.

As per our telephone conversation last month I am writing to request your hospital's participation in my Master's thesis research. Please find a copy of the research interview questions attached.

I am a Master of Science in Administration student at Concordia University. My thesis title is "A Framework for Continuous Quality Improvement in Health Care" and is being supervised by Dr. Steven Appelbaum. I have conducted an extensive literature review on this area of study and wish to validate specific hypotheses through case study research. I am seeking the cooperation of 4 hospitals to represent case sites. I am hoping to use your hospital as one of my case sites. Your cooperation would involve separate interviews with various hospital employees; specifically, at least 2 of the following: the hospital's Quality Assurance Manager, Director of Medicine, Director of Nursing and Executive Director. The interviews would take approximately one hour each and would be conducted at your location at a mutually convenient time.

Please be assured that throughout the study Concordia's high professional standards of confidentiality and anonymity will be maintained. As well, there is no risk to the interviewees or the hospital since, in any publication of this research, both the names of individuals and hospitals would remain anonymous.

Participation in this research project should be quite beneficial to the hospital as the interviewing process often provides interviewees with an opportunity to reflect on and assess their current situation. Such reflections often lead to a better understanding of one's goals and achievements. Moreover, the research will benefit the health care industry as a whole as it aims to clarify and define Continuous Quality Improvement in health care. Participating hospitals would be the greatest beneficiaries since they will be able to identify with the results of the study. I look forward to the possibility of your participation in this project and will contact you in the near future to discuss this further.

Thank you for the consideration you are giving this study.

Suzannah Radnay, M.Sc. student

APPENDIX - G: CONSENT FORM

CONSENT FORM

This is to state that I agree to participate in the interview being conducted by Suzannah Radnay. This project is being sponsored by the Management Department at Concordia University.

I have been informed that the purpose of this research is to investigate TQM in a health care setting. I know that there is no hidden motive of which I have not been informed.

I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.

I understand that this interview will be kept strictly confidential and will be available only to the members of the research team.

I understand that excerpts of this interview may be part of the final research report.

Yes, I agree to have my name quoted in the final research report.

No, I do not agree to have my name quoted in the final research report.

I understand that the aggregate data from this study will be published.

**I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT.
I FREELY CONSENT AND AGREE TO PARTICIPATE IN THIS STUDY.**

NAME (please print) _____

SIGNATURE _____

WITNESS SIGNATURE _____

DATE _____

APPENDIX - H: PARTICIPANT OBSERVATION REQUEST LETTER

Suzannah Radnay

October 7, 1995

Dear M,

I am writing to you to request that I be placed as a voluntary member of the Steering Committee. I am a Master of Science in Administration student at Concordia University and am writing my Master's thesis on Continuous Quality Improvement in Health Care. My thesis supervisor, Professor Steven Appelbaum, agreed with me that placing me on this steering committee would be mutually beneficial for both the hospital as well as our research.

I have completed a course on implementing CQI and, due to the background work I have done for my thesis, I am quite familiar with the literature and procedures surrounding CQI in health care. Placing me on this committee would provide me with an unprecedented experience: it would allow me to be present as the paradym I am studying shifts from one position to another. Moreover, my involvement on this committee could prove to be quite beneficial to your group as well. As I have acheived a certain level of expertese in this field I would be able to share with the committee both academic theories as well as experiences other hospitals have shared with us. In this vein, I believe that I could play an advisory role on the Steering Committee.

I thank you in advance for considering my application and look forward to hearing from you soon.

Sincerely,

Appendix - I
Document Summary Form

Hospital:

Interviewee:

Position:

1. Length of time TQM in hospital

2. Teaching hospital:

3. gradual/all at once:

4. TQM variables (+/-) (f/b):

UMC

T&E

QD

MBF

CI

TEM

CF

SP

SUP

ALL

CUL

5. Facilitators (new):

6. Barriers (new)

7. Accreditation impact:

8. Accreditation scale:

9. Level of change scale:

10. Success scale:

APPENDIX - K: CHECKLIST MATRIX

VAR	SUB #1	#2	#3	#4	#5	VIDEO	BOOKS
UMC							
T&E							
QD							
MBF							
CI							
TEM							
CF							
SP							
SUP							
ALL							
CUL							
COUNC							
TECT							
EE							
DP							
PR							
EX CUL							
REENG							
TQM SUCC							
ACCR							
SURV							

APPENDIX - L CASE #1 MATRIX

VAR	SUB #1	#2	#3	#4	#5	VIDEO	BOOKS
UMC	+ D/F	+ D/F	+ D/F	+ D	+ D/F	+	+
T&E	+ D/F	+ F	+ F	+ F	+ F	+	+
QD	+ F	+ F	+	+	+ F		+
MBF	+ F	+	+ B	+	+	+	+
CI	+ D/F	+ D	+	+	+	+	
TEM	+ F	+	+ F	+	+ F	+	+
CF	+ F	+	+ F	+ F	+	+	+
SP	+ F	+	+	+	+	+	
SUP	+ F	+	+	+	+	+	
ALL	+ F	+	+ F	+	+ F	+	+
CUL	+ F	+ F	+ F	+ F	+	+	+
COUNC	+ F	+ F	+ F	+			
TECT	fundame n	4	5	3-4	incremen t		+
EE	+	+ B	+	+			
DP	+	+ F	+			+	+
PR		+ B	+	+	+		
EX CUL		+ F	+	+	+		+
REENG	+ B	+	+	+	+		
TQM SUCC	6/7	5/7	5/7	7/7	5/7		
ACCR	7/7	6/7	6/7	7/7	6/7		
SURV	Successful						

APPENDIX - M : CASE #2 MATRIX

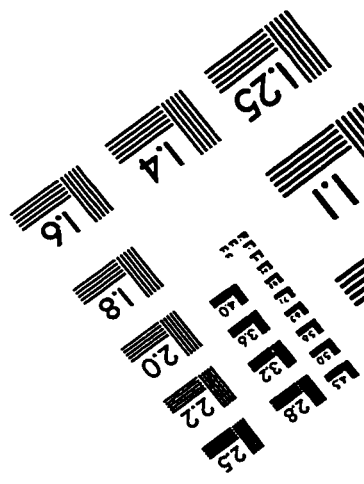
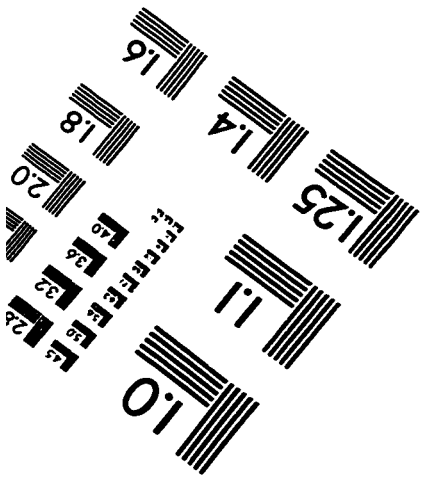
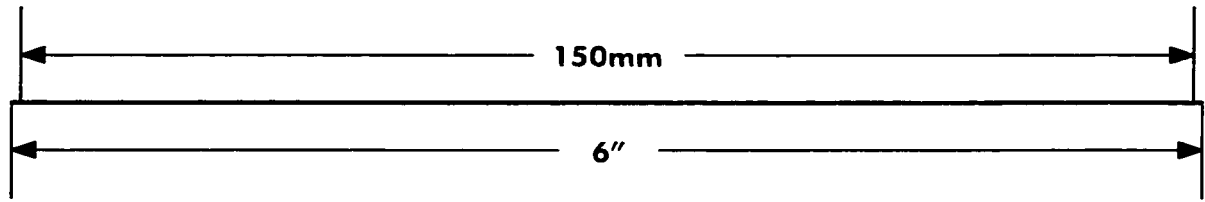
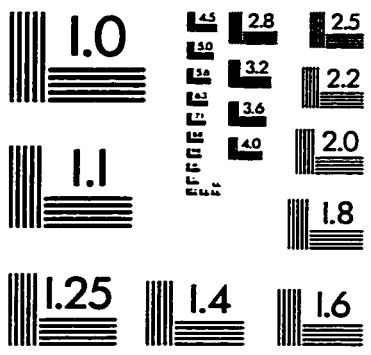
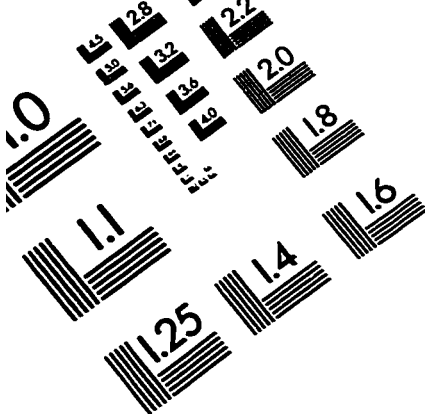
VAR	SUB #1	#2	#3		P.O.	DOCUM	
UMC	+ D	+ F/D	+ D		+	+	
T&E	+ F	+ F	+		+	+	
QD	+ F	+ F	+		+ F	+	
MBF	+ D/F	+ F	+		+	+	
CI	+	+ F	+		+		
TEM	+ F	+	+		+	+	
CF	+	+ F	+		+	+	
SP	+	+	+		1/2	+	
SUP	-	-	+		+		
ALL	- B	+	+		-		
CUL	+		+		-		
COUNC	+ D/F	+ D/F	+ F		+ F/D	+	
TECT	3	4	4 1/2		+	+	
EE	+ B	+ B	+		+ B		
DP	N/A	F	+ F		+ F	+	
PR	B		-		+		
EX CUL	F		+		+		
REENG	F/D				+		
TQM SUCC	3	6	5				
ACCR	N/A	N/A			N/A		
SURV	IN	PROCE SS					

APPENDIX - N: CASE #3 MATRIX

VAR	SUB #1	#2	#3	PO			
UMC	+ F	+ F	+ F				
T&E	-	- B	+				
QD	+ D	+ D	+ D				
MBF	+ F	+ F	+				
CI	+	1/2	+	+			
TEM	+	+ F/D	+ F				
CF	+ F/D	+	+	+			
SP	+ F	+ F	+ F				
SUP	-	+	+				
ALL	-	+	+				
CUL	1/2	1/2					
COUNC	+ D	+ D	+ D				
TECT	1 1/2	3/5					
EE	+ B	+ D	+ B	+ B			
DP	+ D	+ D					
PR		+ B					
EX CUL	1/2	+	+ F				
REENG			+ B				
TQM SUCC		5/7	5/7				
ACCR		5/7	5/7				
SURV	IN	process					

APPENDIX - O
CONCEPTUALLY ORDERED MATRIX

	CASE #1	CASE #2	CASE #3	TOTAL
# OF SOURCES	6	4	4	14
VARIABLE				
UMC	6	4	4	14
T&E	6	4	2	12
QD	6	4	4	14
MBF	6	4	4	14
CI	6	4	3	13
TEM	6	4	3	13
CF	6	4	3	13
SP	6	4	3	13
SUP	6	2	2	10
ALL	6	2	2	10
CUL	6	3	1	10
DP	4	4	3	11
EX CUL	4	4	3	11



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