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IMPLEMENTING TOTAL QUALITY MANAGEMENT IN CANADIAN HEALTH CARE: AN EMPIRICAL INVESTIGATION

Zafiro Kaltsounakis

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ABSTRACT

Implementing Total Quality Management
in Canadian Health Care:
An Empirical Investigation

Zafiro Kaltsounakis

Total Quality Management (TQM) is a management philosophy which seeks to improve operating efficiency through continuous improvement of organizational systems. The quality movement has been so influential that "quality" has become an important measure of organizational success in both manufacturing and service industries.

Health care in Canada has not been immune to the momentum of the quality movement. Research on this subject is growing, yet few empirically-derived guidelines or principles have been formulated for the pursuit of TQM in Canadian hospitals.

The present study aims to develop a descriptive framework for the effective implementation of TQM in this context. This objective is achieved by developing a model of TQM implementation based on theoretical formulations and empirical findings derived from the quality experiences of a Canadian hospital. A case study methodological approach is used to guide this exploratory research.

The implications of this model for quality and Canadian health care are discussed. Future research directions in this area are also suggested.

FOR MY PARENTS

AND FUTURE HUSBAND

WITH LOVE AND APPRECIATION

ACKNOWLEDGMENTS

I would like to thank David Waldman, Terry Lituchy, and Mohan Gopalakrishnan for their helpful comments on earlier drafts of this paper.

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1. INTRODUCTION

Total quality management (TQM) has received considerable attention from quality gurus and industrial leaders in the last two decades (Waldman, 1994). TQM is a management philosophy which seeks to improve operating efficiency through continuous improvement of organizational systems (Deming, 1986). The impact of this movement has been so pervasive that "quality" is becoming an important measure of organizational success and survival in different industries and sectors.

Health care in Canada is also being influenced by the quality movement. Canadian health administrators are increasingly recognizing the need for an improvement in efficiencies in hospital systems. Inefficiencies are seriously compromising the survival of the Canadian health network (Health Canada, 1993). In light of this reality, strategies with a quality vision offer the promise of saving and improving a system which is rapidly becoming too costly to maintain (Chang, 1994, p. 27).

TQM is a relatively new phenomenon in Canadian health care. Research on the subject is growing, yet few empirically-derived guidelines have been formulated for the pursuit of quality control in Canadian hospitals. The present study aims to develop a model for the implementation of TQM within this context. The specific research question being addressed by the study is: How should hospitals in Canada proceed in order to effectively implement TQM?

The proposed model is intended to act as a guide for Canadian health administrators pursuing quality initiatives. As the literature review below reveals, there is a growing need for such a descriptive framework.

2. LITERATURE REVIEW

A. Total Quality Management

TQM is a fairly ambiguous term which has generated significant interest among organizational leaders and management theorists. Although the concern for quality in production is not a completely new phenomenon, the implementation of TQM has become an issue in many sectors and countries (Dean and Bowen, 1994, p. 392). Interest in TQM has even grown and extended beyond manufacturing industries to include service industries and government agencies (Waldman, 1994, p. 511).

While different interpretations of TQM exist, the following definition of the term will be applied throughout the present study:

> *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"* (Sashkin and Kiser, 1993, p. 39).

TQM is essentially a management philosophy which has been examined by numerous authors from different perspectives. W. Edwards Deming delineated his

philosophy on quality in 14 points which included statistical process control (SPC), managerial commitment, leadership, and employee control of quality in production (Deming, 1982, p. 23-24). Deming also stressed the importance of customers (internal and external) and suppliers. Moreover, he viewed TQM as ongoing or continuous improvement of organizational processes.

Juran described quality as a) meeting customer's needs, and b) freedom from deficiencies (Heinzlmeir, 1991, p. 23). He stressed the importance of planning and product design, and quality audits. By contrast, Crosby stressed the concept of zero defects, ongoing commitment to quality, training, and continuous calculation of costs (Heinzlmeir, 1991, p. 23). Alternatively, Taguchi argued against the concept of zero defects by stating that such a concept builds acceptable error into a system; a product may have quality problems even if it is defect-free (Heinzlmeir, 1991, p. 23). Hence, Taguchi encouraged developing a product or service to customer specifications and then building these specifications into the system or process of production.

The quality gurus noted above evidently differ in their interpretations of TQM. Despite these differing perspectives, TQM essentially involves a set of principles (e.g., customer focus) which are implemented through a set of practices (e.g., process analysis) supported by various techniques (e.g., SPC). Moreover, several common elements have been identified as critical to the implementation of TQM.

These elements are described by Waldman (1994):

1. *upper management commitment to the pursuit of quality;*
2. *continual improvement of employee capabilities and work processes;*
3. *team-based, cooperative involvement in quality initiatives;*
4. *quality focus throughout a process, not merely at the end;*
5. *involvement of external suppliers and customers in TQM efforts;*
6. *use of (SPC) to identify quality problems and control them;*
7. *leadership practices reflective of TQM principles;*
8. *development of a quality culture.*

The elements of TQM have been extensively reviewed in the literature. Therefore, there is considerable understanding of quality principles. However, there is significantly less understanding and greater confusion with respect to TQM implementation (Numerof and Abrams, 1994, p. 93). Organizations frequently initiate quality efforts in good faith. However, they do not have adequately defined strategies for the implementation of total quality programs. In consequence, many total quality initiatives fail.

Researchers have cited numerous barriers to explain the failure of TQM programs. These barriers include short-term performance pressures, a lack of coordination of TQM programs with other organizational systems, and centralized authority (Blackburn and Rosen, 1994, pp. 15-16). Zbaracki (1994) also identified two

"forces" which act against TQM: (1) ignorance - lack of knowledge and experience with TQM, and (2) intimidation which leads to avoidance of certain difficult aspects of TQM such as statistical tools.

In addition to these factors, a total quality philosophy involves a sweeping transformation of organizational beliefs, values and behaviours (Olian and Rynes, 1991, p. 306). In many instances, a lack of understanding of quality principles on the part of senior management results in a misestimation of the degree of change involved in the adoption of a total quality strategy. Management may also overlook the sequence of steps in TQM implementation, or seek results too quickly (Spector and Beer, 1994, p. 70). All of these factors can seriously impede the overall success of TQM.

TQM implementation also requires some radical changes to traditional management practices in the West. For instance, the traditional management paradigm stresses authoritarianism. Therefore, while many managers support the principles of employee participation and input, they are uneasy about surrendering their authority (McConnell, 1995, p. 74).

In addition, the development of effective work teams may be problematic in organizational cultures with human resource systems that stress individual performance review and compensation (Waldman, 1993). Moreover, management

practices in the West have generally supported evaluating and rewarding individual performance.

As these examples illustrate, TQM is not always consistent with existing management theory (Dean & Bowen, 1994, p. 410). Successful TQM implementation also requires significant changes in numerous human resource management (HRM) functions. Blackburn and Rosen (1994) found that organizations with higher levels of TQM commitment and effectiveness also report greater changes to their HRM systems. In particular, jobs must be redesigned to afford employees greater autonomy and decision-making authority, and communication lines must be enhanced to increase the amount of information transmitted.

The inconsistency between management theory and TQM often leads to the failure of total quality initiatives. In fact, TQM failures still greatly outnumber the successes (Zbaracki, 1994, p. 12). The failure rate - where TQM efforts do not meet organizational expectations - has been estimated to be as high as 75 per cent (Spector & Beer, 1994, p. 63). Moreover, one study found that out of 500 companies implementing TQM, only 36% claimed some measure of success (McConnell, 1995, p. 71). These dismal figures do not provide a strong argument for the pursuit of TQM initiatives.

In light of these failures, TQM has often been labelled a mere fad with little substance. Despite this criticism, neither academics nor practitioners dispute the fact that the quality movement has been the most influential of all management innovations in the last two decades (Krishnan et al., 1993, p. 71). Moreover, TQM has been credited with some extraordinary success stories. These successes involve business turnarounds for industry giants such as *Ford*, *Motorola*, and *XEROX* (Krishnan et al., 1993, p. 7).

The potential pitfalls of TQM implementation have therefore not discouraged organizations from pursuing strategies of a total quality nature. Most organizations are driven by the promise of TQM: the expectation that implementation of quality initiatives will result in increased customer satisfaction and higher levels of efficiency.

B. Theoretical Model of TQM Implementation

A theoretical model for the implementation of TQM can be derived from the literature. This model appears in Appendix A, and is discussed below.

A TQM initiative generally begins with a *quality vision* introduced by the organizational leader (Juran, 1986). This vision articulates the organization's strategic focus on quality. Hence, TQM must be incorporated into the overall corporate mission of the organization.

Moreover, the introduction of TQM must be prompted by external market pressures including competitors' performance and customer demands (Spector & Beer, 1994, p. 65). To ensure effective implementation, the TQM initiative can not be driven by a desire to merely follow management fads or trends. TQM will fail if it is not based on market expectations because quality efforts will not be aligned with organizational tasks (Spector and Beer, 1994, p. 65).

Once the *quality vision* is introduced, organizational awareness and commitment to TQM must be developed. As Appendix A reveals, three components help to build commitment: (1) *senior management commitment to TQM*, (2) *quality planning*, and (3) *redesign of HRM systems*.

Senior management commitment to TQM is critical to effective implementation because "leadership from the top is what drives TQM" (Sashkin and Kiser, 1993, p. 128). This commitment is fostered by developing an understanding of TQM principles. Top management as a team must commit to quality as a key strategic focus (Spector & Beer, 1994, p. 65). Therefore, divisional and functional differences must be put aside to allow the pursuit of quality to take priority. As a result, senior managers must become aware of critical success factors such as needs for training and leadership. This awareness can then be transmitted to employees thereby building organizational commitment to TQM.

Quality planning can also contribute to the development of such commitment. This process is essentially focused on the customer: identifying internal and external customers, determining customer needs, and responding to these needs (Juran, 1986, p. 21). Within this process, top management should link TQM to a few critical goals which are easily connected to corporate strategy (Jacob, 1993, p. 68). These goals can include quantifiable objectives such as cutting costs, or increasing customer satisfaction. However, the TQM effort and strategic mission of the organization must be aligned in order for TQM to succeed.

In planning for quality, senior management can also target processes for improvement. These processes should represent areas with quality problems. The problem areas should involve relatively simple processes which are also important to the organization and its customers (Scholtes, 1988). These areas can serve as pilot projects for the implementation of TQM.

A quality council composed of senior and middle management should also be formed within the planning phase (Spector and Beer, 1994, p. 65). The purpose of this council is to monitor the progress of the teams, spread TQM successes, and deal with resistance to change (Spector & Beer, 1994, pp.67-68).

In addition to *quality planning and senior management commitment, redesigning HRM systems* will also contribute to the development of organizational

commitment to TQM. For instance, jobs in a TQM organization must be redesigned to encourage creativity and problem-solving among employees (Blackburn & Rosen, 1992, p.54). This redesign involves extensive training in both quality principles and tools. Moreover, performance appraisal and reward systems must also be modified by eliminating short-term performance pressures, and rewarding teamwork (Waldman et al., 1993). In addition, extensive communication plans (e.g., multi-directional feedback channels) are necessary to share information with employees (Blackburn & Rosen, 1994, p.15). Finally, selection processes must be modified to include peer selection, and broader criteria (e.g. problem-solving ability versus narrow job skills) (Blackburn & Rosen, 1993).

Senior management commitment, *quality planning*, and *HRM system redesign* all contribute to the development of *organizational commitment to TQM*. This commitment will affect the other steps in the TQM implementation. For instance, the next step in the implementation involves *quality structure*. This structure is achieved by forming multi-disciplinary teams around the processes targeted for improvements.

Once the *quality structure* has been put into place, *quality activities* can be performed. Within each pilot project, teams members must perform the following activities: (1) identify the needs and customers being served by a process; (2) establish quality specifications to serve those needs; (3) set targets for specific

process improvements to be achieved by a specific deadline; (4) measure process performance with the use of statistical process control methods (SPC); (5) diagnose differences between actual and desired performance; (6) propose recommendations for improvement (Juran, 1986). Teams must set specific, measurable targets of process improvements to be achieved within realistic time frames.

Finally, these recommendations must be *implemented* and evaluated for their effectiveness. The *evaluation* should involve the following question: Were the target process improvements achieved on time? If so, the changes proposed by the team should be institutionalized, and the team should plan for continuous improvement. If not, the performance problem must be redefined, and new action must be initiated (Juran, 1986). In both cases, the efforts of the teams must be reviewed by the quality council. This *evaluation* can be measured against specific team process achievements, and general outcomes of successful TQM implementation (e.g., internal/external customer satisfaction, product/service quality, and internal efficiency).

The model described above was formulated based on the literature on TQM implementation. However, this literature was based primarily on TQM initiatives in industrial settings in the Unites States. Therefore, this model may not be directly applicable or transferable to other industries and/or countries, particularly

health care in Canada.

C. TQM and Health Care

Health care has also been influenced by the philosophy of TQM. Although hospitals have generally been slower to establish total quality objectives, they are increasingly recognizing the importance of ensuring quality in all their systems (Spiers, 1994, p. 42).

The first formal application of TQM to health care occurred in 1987 with the Harvard Demonstration Project. In this project, several American hospitals were paired up with business partners who had implemented TQM in their organizations (Vaughn, 1994, p. 1). The purpose of this project was to assess whether TQM methods derived from industry could be effectively applied to health care (Eagle et al., 1994, p. 29). Results indicated that TQM efforts can achieve measurable improvements in the delivery of health care. Moreover, the Harvard Demonstration Project successfully addressed numerous quality problems in health care.

This project proved to be the catalyst for the adoption of quality initiatives among many hospitals, particularly in the United States. Such quality efforts have shown documented successes on various criteria such as patient perceptions of quality care, cost savings, and reduced turnover time for lab results (Rauber, 1994, p. 9).

These successes have fuelled acceptance of TQM programs by health care administrators in the United States and abroad (Spiers, 1994; Ong & Koch, 1994; Williams & Williams, 1994). Canadian health care has not been immune to the momentum of this quality movement. In consequence, a growing number of Canadian hospitals are adopting TQM programs to improve health care delivery (Berwick, 1993, p. 2).

However, Canadian hospitals have only recently initiated research on quality and health care. The introduction of quality management to Canadian health care has been accelerated by severe downsizing and budget cuts presently confronting Canadian hospitals (Eagle et al., 1994, p. 25). There is a "collective and deeply felt concern" that the present health care system needs urgent reform (Canadian Council on Health Facilities Accreditation, 1993).

In light of this fact, many Canadian hospital administrators are seriously examining quality issues and devoting significant resources toward the development of quality departments. The motivation for the pursuit of quality initiatives in Canadian hospitals stems from concern with clinical quality, cost control, and value to customers (Chang, 1994, p. 27).

Clinical quality is of concern because it is deemed to be the core business of any hospital (Johnson, 1994, p. 690). Similarly, cost control has become a great source

of concern among hospital administrators in Canada (Health Canada, 1993, p. 6). It is rooted in the reality that Canadian hospitals are increasingly incurring larger debts thereby signalling their inability to operate efficiently within their allocated provincial budgets (Eagle et al., 1994, p. 25). The implications of this problem are extensive given the fact that provincial governments can no longer absorb the costs of these deficits. As a result, Canadian hospitals must essentially develop their own strategies for cost containment.

Finally, value to the customer is also becoming an issue because health care is increasingly becoming a source of public debate (Berwick, 1994, p. 2). Customers are demanding accountability on the part of Canadian health institutions. The basic premise underpinning health care in Canada today is that "the responsibility for assuring quality of care rests with the organization providing the care" (Roberts, 1987, p. 69). Moreover, this responsibility extends beyond dollars because of the potential human cost associated with low quality health care (Gappmayer, 1994, p. 28).

These forces are essentially driving health care officials in Canada to examine the philosophy of TQM and the successes it has earned in some business and health care contexts. They are increasingly recognizing the potential benefits of developing an organization-wide interest in the attainment of quality objectives (Eagle et al., 1994, p. 25). The pursuit of quality promises increased efficiency

which translates into reduced deficits and improved quality of health care (Health Canada, 1993). In short, administrators are realising that TQM can provide the impetus for the achievement of these outcomes.

Interest in TQM in Canadian health care spurred Health Canada to commission a study on quality initiatives in Canadian hospitals. This study proposed a description of the implementation phases associated with TQM. Four implementation phases were identified along with projected time frames:

- *building awareness* - gaining understanding of quality principles, developing a quality vision, understanding customer expectations (6 months);
- *planning* - developing a TQM plan, identifying problem areas, assembling teams, training staff, establishing communication and feedback channels (18 months);
- *deployment* - communicating and celebrating results (36 months);
- *full integration* - implementing changes, maintaining commitment to TQM, continuing to improve processes (60 months) (Health Canada, 1993).

These four stages represent the broad phases or periods involved in TQM implementation. However, unlike the theoretical model described above, these phases do not delineate the exact sequencing of steps which must be undertaken to successfully implement TQM. Canadian health administrators are seeking to initiate quality programs, but few formal guidelines exist for them on how to proceed. Hence, there is an absence in the literature of empirically-derived principles for TQM implementation in Canadian hospitals.

3. RESEARCH OBJECTIVES

The main purpose of the present study is to develop a model of TQM implementation in Canadian health care. The specific research objectives include the following:

- *to establish the specific sequencing of actions that need to be taken by Canadian hospitals to proceed with effective TQM implementation;*
- *to describe the broad phases of activities and time frames actually involved in such an implementation;*
- *to review the obstacles to effective TQM implementation in Canadian health care.*

The first objective is attained through the development of a model intended to guide the efforts of Canadian hospital administrators with TQM initiatives. The development of this model involves a three-step process: (1) a theoretical model of TQM implementation was presented above based on the literature; (2) an empirical model of TQM implementation is formulated below based on the experiences of a case hospital; (3) a revised model is then developed which takes into account theoretical formulations prescribed by the literature and the empirical findings derived from the TQM experiences of the case hospital. The revised model offers a basic framework for the implementation of TQM in the present Canadian health system.

The second objective differs from the first objective because it seeks to confirm the phases of TQM implementation, rather than delineate the specific steps that

should be involved in that implementation. This objective is achieved by testing the applicability of the phases of TQM implementation identified by the Health Canada study (1993) to the TQM experiences of the case study. This comparison reveals whether or not the stages of TQM implementation in the case study are consistent with the findings of this study. In so doing, an assessment is also made of the relative generalizability of the findings of the Health Canada study.

Finally, the third objective is attained in a discussion of obstacles to the successful implementation of TQM. This discussion is based on information drawn form the literature, the experiences of the case unit, and an analysis of the current status of health care in Canada.

4. VARIABLES

The specific variables under examination in the present study are related to critical elements of TQM implementation. These elements surfaced in the development of the theoretical model of TQM implementation presented above. They are described in greater detail below.

The first important element of TQM implementation is a *quality vision* which is generally introduced by the organizational leader. This vision involves a "universal way of thinking about quality" which becomes applicable to all functions, divisions, and levels across an organization (Juran, 1986, p. 19). The

quality vision will guide the quality initiative by helping to convert organizational members to the same system of beliefs (Boyce, 1992).

Senior management commitment to TQM has also been demonstrated to be critical for successful implementation (Spector & Beer, 1994, p. 65). A common understanding and commitment to quality must be developed among top management. Senior management must become experienced in managing quality (Juran, 1986) through *training*. In so doing, they can act as role models in conveying the importance of TQM (Saraph & Sebastian, 1993, p. 76). Moreover, top management can set the norms for quality by becoming actively involved in the TQM implementation, and symbolically emphasizing the importance of quality through ongoing *communication* of quality goals (Olian & Rynes, 1991, p 324).

Training and *communication* are two additional variables which play a critical role in the effective implementation of TQM. Extensive *training* is required when undertaking a quality effort. This *training* is basically designed to get organizational members to think about quality (Juran, 1986, p. 23). Employees come to understand quality principles and objectives through *training*. Moreover, *training* can serve to develop the skills required to fulfil quality mandates (Blackburn & Rosen, 1993, p. 31). In particular, employees must be trained to recognize problems, identify faulty processes, and propose solutions.

TQM *training* programs must also incorporate instruction in the application of scientific tools and techniques. These quality tools are referred to as *statistical process control (SPC)* methods which represent another variable in the study. They are used to measure sources of variation in processes. In particular, they are intended to distinguish between common causes of variation (i.e. variability due to system problems) and special causes (i.e. variability due to irregular occurrences such as a power failure) (Deming, 1986). *SPC methods* include control charts, fishbone diagrams, and flow charts (Sashkin and Kiser, 1993, pp. 169-178). They represent another important variable in the implementation of TQM.

Communication is also critical to the effective implementation of TQM. It can help to build organizational awareness of TQM in two ways: (1) communication of the quality vision - a communication plan designed to spread the quality vision, and (2) employee voice and involvement - multi-directional communication channels (i.e. top-down, bottom-up, and lateral) designed to keep employees informed, and encourage participation and feedback (Blackburn and Rosen, 1993, pp. 28-29). In short, ongoing *communication* is critical to fostering commitment to TQM principles.

The most important principle in TQM is *customer focus*. Hence, it represents another critical variable of TQM implementation. The fundamental assumption of TQM is planning for the design and delivery of products and services that fulfil

the needs of customers (Dean & Bowen, 1994, p. 394). The rationale for this assumption is that customer satisfaction is critical to the long-term survival of any organization. Feigenbaum summarizes *customer focus*:

> *Quality is what the customer says it is... not what an engineer or marketeer 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* (Feigenbaum, 1991).

In addition to customer focus, *multi-disciplinary teams* are important for TQM implementation. These teams involve collaboration between employees of different rank, function, and department. The emphasis on teamwork of a cross-functional nature stems from the fact that "processes targeted for improvement transcend hierarchical, functional, and organizational boundaries [so that] teamwork is essential" (Dean & Bowen, 1994, p. 396). Moreover, the effectiveness of *multi-disciplinary teams* is enhanced when members share decision-making, responsibility, and credit for the implementation of process improvements.

They are seven variables in total associated with TQM implementation which are examined in the present study. These variables can be summarized as follows:

- *quality vision (QV)* - organization embraces a philosophy focused on total quality delivery of products and/or services;
- *senior management commitment (SMC)* - SMC is demonstrated through active involvement and symbolic leadership on the part of the organizational leader and senior managers;

- *multi-disciplinary teams (MDT)* - a diverse group of people pooling resources (skills, talents, knowledge);
- *customer focus (CF)* - "quality for the customer as a driving force and central concern" (Sashkin and Kiser, 1993, p. 3);
- *training (TRG)*- training organizational members on both technical and behavioral methods of TQM implementation;
- *communication (COM)*- ongoing communication within and across organizational levels;
- *measurement with SPC methods (SPC)* - a variety of statistical tools used for process measurement, analysis, and evaluation.

5. METHODOLOGY

A. Research Design

The research design of the present study is a case study using qualitative data. The following definition of a case study guides the present research:

> *A case study is 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. (Yin, 1984, p. 23)*

The present study conforms to this definition because it investigates TQM implementation in Canadian health care (i.e. a contemporary phenomenon) within a Canadian hospital (i.e. a real-life setting), without divorcing the phenomenon from the context, and using multiple sources of evidence (discussed below).

Moreover, the case study was deemed appropriate as a research strategy because

of the exploratory nature of the research question. A "how" question is being asked about a phenomenon which is still in the exploratory phases of analysis. The case study methodology is the preferred research strategy in this context (Yin, 1984, p. 17).

The case study is also preferred because the present study examines contemporary events where significant events or variables cannot be manipulated (Yin, 1984). The study aims to examine TQM implementation in a Canadian hospital for the purpose of description. Hence, the variables of TQM implementation are not being manipulated in any way.

A single-case design is used in the present study. The use of a single case is once again justified by the exploratory nature of the phenomenon under study (Yin, 1984, p. 49). The rationale for the use of a single hospital also stems from the reality that in-depth case studies are generally time-consuming and result in massive amounts of data (Eisenhardt, 1989, p. 539). Therefore, it was difficult to conduct an exhaustive examination of a second hospital.

A single hospital was also examined because a comparable hospital was not available in the province of Quebec. Additional hospitals would have to be at virtually the same phase of their TQM implementation. However, few Canadian hospitals initiated TQM implementation at the same time as the case unit under

study. Many hospitals have since examined quality, but their approach to the implementation differs significantly from that of the case unit. The latter followed industry standards for TQM implementation which required significant investments in training and consultants. Canadian hospitals do not presently have comparable levels of resources to devote to a total quality initiative.

A holistic design is used within the single-case study. Hence, the global nature of the TQM implementation in the case hospital is examined without consideration of other sub-units of analysis (Yin, 1984, p.49). This design is appropriate given the fact that the present study is intended to give an impressionistic rather than a definitively analytical view of TQM implementation in Canadian health care (Davis & Cosenza, 1993, p. 303).

The advantage of using the research design described above is the realism of the information being gathered. Moreover, the case study approach was most appropriate given the nature of the proposed research. In attempting to develop a model of TQM implementation in Canadian health care, it was important to examine a hospital actually pursuing this strategy. The case study methodology permitted such an in-depth evaluation of the organization.

B. Selection and Description of Case

The case hospital was selected on the basis of the standing of its TQM effort. This hospital is viewed as the undisputed leader of TQM implementation in Quebec because it initiated its quality effort before many of the other hospitals in the province.

The hospital was a large (628 beds compared to the Canadian average of 300 beds), public ("one which is not operated for profit, accepts all patients regardless of their ability to pay, and is recognized as a public hospital in the province in which it is located"), teaching hospital in a metropolitan area (Canadian Hospital Association, 1994).

The Quality Assurance (QA) Coordinator of the case hospital was initially contacted over the telephone. The nature of the study and its significance were explained. A package was then mailed to the QA coordinator containing an introductory letter, an executive summary of the study proposal, and a sample of the potential interview questions.

The researcher and two study advisors met with the QA coordinator. This meeting involved further explanation of the objectives of the study. At this time, permission was granted to proceed with an in-depth investigation of the quality efforts at the case hospital.

C. Participants

A stratified sampling approach was used for the selection of interviewees: informants included a mix of key players in the TQM implementation. Therefore, the study intentionally sampled a diverse cross-selection of informants. Informants were recommended by the quality assurance (QA) coordinator who acted as a liaison between the hospital and the researcher.

Informants varied across three variables: (1) *department* - informants were drawn from the departments of emergency, nursing, telecommunications and transport, information systems, QA, admitting, social services, professional services, radiology, and physiotherapy; (2) *role in TQM implementation* - informants included team members, team facilitators, and administrators; (3) *rank* - 27% of informants were from the administrative level, 45% of informants represented middle management, and front-line or support staff accounted for 27% of informants.

D. Data Collection

The present study used multiple sources of data collection. The use of multiple data collection methods served to further substantiate the findings of the research by corroborating examination of the variables under study (Eisenhardt, 1989, p. 538).

Two sources of data collection were used: (1) documentation, and (2) interviews. Documentation represents a form of secondary data collection where the researcher retrieves data collected by others. In this case, documentation involved a review of records on the quality initiative at the case hospital. Manual retrieval methods (i.e. physical searches of library materials and hospital records) were employed in collecting documents such as memoranda, written reports, formal studies, and training materials (Davis & Cosenza, 1993, p. 58). This information was retrieved from internal data locations as the information came from within the hospital only.

The interviews represented the primary form of data collection (i.e. data that is collected for a specific purpose from original sources) used in the study (Davis & Cosenza, 1993, p. 262). The interviews involved asking a number of people involved in the quality control efforts at the hospital about their experiences with TQM. These interviews were individual, in-depth interrogations of both hospital employees who were actually involved in the TQM implementation as well as hospital administrators who initiated the quality implementation.

Interviews included questions about the nature and extent of involvement in TQM, factors promoting/impeding TQM implementation, use of TQM tools, and personal experiences with TQM (see Appendix B). These questions were designed to probe interviewees on their feelings and perceptions of the TQM implementation. Moreover, they were intended to enable the researcher to describe the

implementation of TQM in the case hospital. The duration of the interviews varied between 30 minutes and 100 minutes with the average approximating 65 minutes.

Several steps were taken by the researcher to increase the accuracy and reliability of the data collected during the interviews. Such steps included question schedule familiarization prior to interviews, neutral probing of answers (e.g. please elaborate on that more ....), promise of anonymity, and the preparation of informants prior to interviews with the introductory letter, and a copy of the principal research questions (Fleisher & Nickel, 1995).

E. Procedure

Interviews. Potential informants were recommended by the QA coordinator who suggested individuals with significant involvement in TQM. These informants were first approached by the QA coordinator on the researcher's behalf to explain the objectives of the study and the nature of their potential involvement.

The prospective informants were then contacted over the telephone by the researcher. Approximately 85% (11/13 prospective informants) agreed to participate in the study. Interview dates and times were determined during these phone conversations. The phone calls were followed up with introductory letters explaining the purpose of the thesis, and the objectives of the interview. In

addition, prospective informants were given a copy of the main interview questions.

Interviews proceeded in a semi-structured format. Although interviewees were given the basic interview questions prior to the interview, these questions were supplemented with additional queries on issues raised during the interview. Hence, interview questions were open-ended, but also focused.

Interviews were conducted by the researcher and a co-researcher, and transcribed by a third clerical party in attendance. The use of multiple investigators offered two advantages: (1) the richness of the data was enhanced due to the differing perspectives and complimentary insights of the two interviewers, and (2) confidence in the findings was increased (Eisenhardt, 1989, p. 538). Moreover, the third-party transcription ensured a complete and unbiased recording of interview data. This transcription was facilitated by audio-recording of interviews with the use of a tape recorder.

Documentation. Documentation on the TQM initiative at the case hospital was collected during the interviews when informants volunteered certain pieces of information. In addition, a date was set when the researcher visited the case site and perused hospital records on TQM available in the office of the QA coordinator and the medical library of the hospital.

This documented information was used to confirm the approach taken by the case hospital to implement TQM, as well as the time frames involved with each phase of implementation. In addition, it provided specific information about the implementation (e.g., training materials and methods, dates of TQM milestones, and final reports of teams) which did not surface during the interviews.

F. Data Analysis

The general analytic strategy used to analyze the case study data involved the development of a case description (i.e. a descriptive framework used to organize the case study) (Yin, 1989, p.107). The dominant mode of analysis in this strategy was *pattern-matching* where the predicted pattern of TQM implementation was compared to the empirically-based pattern. The predicted pattern of variables was defined in the theoretical model of TQM implementation prepared prior to data collection (Yin, 1989, p. 109).

Data analysis in the study relied on the qualitative data analysis methodology described by Miles and Huberman (1994). This process of data analysis involves four stages: *data collection*, *data reduction*, *data display*, and *drawing/verifying conclusions*.

Data reduction involved the selection, simplification, and transformation of raw data into an analyzable form. This process was performed with the use of contact

summary sheets for the interviews. The contact summary sheets matched the salient points of each interview with the variables under study (Miles and Huberman, 1994, p.52). In addition, they provided background data on the informant and the interview (e.g., site, duration) (see Appendix C).

A data accounting sheet was also prepared whereby a tally was maintained of the number of times a particular variable appeared in every interview. This sheet is presented in Appendix D. The data accounting sheet permitted an audit of the variables and what is known about them (Miles and Huberman, 1994, p. 79).

Document summary forms were also used to reduce the data from the documents collected on site. These sheets included a description of the document, its significance, and a summary of its contents (see Appendix E). The purpose of these forms was to assess the relevance of the document to the present study (Miles and Huberman, 1994, p. 54).

Data display involved the presentation of data into various organized forms. Some forms used were lists of the primary inhibitors of TQM implementation identified by informants (see Appendix F). Another form involved a table of utilization of TQM tools (see Appendix G).

The next step in *data display* involved impression aggregation. This step involved coding transcript sheets with a descriptive keyword process (Fleisher & Nickel, 1995). The text was therefore coded according to the variables (and terms representative of those variables) specified in the theoretical model of TQM implementation.

Conclusion drawing/verification primarily involved the pursuit of objectivity. The degree of objectivity can be assessed by the level of reliability and validity of the findings. Several tactics are offered to increase the reliability and validity of qualitative research (Miles and Huberman, 1994; Yin, 1989).

Some of the tactics used in the study for these purposes included: (1) checking for representativeness - the frequency of responses was compared across interviewees, and (2) weighing the evidence and ruling out rival explanations - the frequency of respondents' statements was tabulated (i.e.a form of content analysis) (Miles and Huberman, 1994). The outcome of the drawing/verifying conclusion stage is outlined in the results section below.

6. RESULTS

The principal findings of the present study will be presented in terms of the variables, the quality outcomes, the obstacles to TQM implementation, and an empirical model of TQM implementation based on the experiences of the case

hospital.

A. Variables

Quality vision. This variable received the least number of mentions among informants (13 mentions) (see Appendix D). The quality vision was described as a philosophy or value system of the hospital. As one informant stated:

> *"TQM was a concept. It was a sense that we needed some kind of umbrella concept to bring into higher focus quality issues in the hospital.... Was there another way to look at quality that would breath a different kind of life into that whole notion [of quality] and try and help maybe refocus the organization on issues that were of prime importance for the quality realm".*

The above quote shows the underlying reason for the hospital's decision to implement TQM: to bring quality to the forefront as the core focus of the hospital. TQM allowed for a new perspective to be brought to quality issues while simultaneously stressing their relevance to the organization and their implications for survival. These elements contributed to the quality vision.

The hospital's quality vision was incorporated into the mission statement. However, the infrequent mention of quality vision throughout the course of the interviews signals that it did not significantly contribute to the implementation of TQM. Hence, the quality vision did not appear to be commonly shared or accepted among organizational members.

Senior management commitment (SMC). Senior management commitment did receive significant mention among informants (43 mentions) (see Appendix D). However, the variable generally aroused a negative connotation as informants frequently criticized the lack of *SMC*. Team players involved in the TQM implementation felt that they did not receive sufficient support from the top: *"This was something very new, and you need some guidance from the people who brought it in, who believed in from the very beginning. So we needed a lot of support, and it didn't seem to pan out that way."*

The lack of *SMC* was identified as the primary inhibitor of TQM implementation (see Appendix F). The implications of this finding are discussed below.

Multi-disciplinary teams (MDT). This variable received the most mentions among informants (146 mentions) (see Appendix D). Feedback about this element of TQM implementation was positive. Informants claimed that the experience of working with people from different levels, functions, and departments heightened sensitivity and awareness of the impact of processes on multiple customers.

Customer focus (CF). This variable also received frequent mention among informants (63 mentions) (see Appendix D). *CF* was generally referred to in descriptions of the philosophy of TQM. It was the most significant principle of TQM which appears to have been internalized by organizational members:

"When you approach people to look at different projects, they are more willing to look at how it affects other departments, and not view it as a threat as much".

Training (TRG). This variable received the second highest number of mentions (139 mentions) among informants (see Appendix D). The training was favourably described by virtually all informants: *"I thought the training certainly covered what we needed to know and dealt with all of the different elements that were necessary".* Moreover, training was deemed to be the biggest facilitator in the TQM implementation.

Informants even claim to apply some of the TQM principles and techniques presented during training on a daily basis. For instance, one informant commented on the importance of data driven decision-making:

"...since TQM I found that in order to get issues resolved I needed proof behind me when I was addressing the issue. So I have designed forms that I've put into place in the department for keeping track of different things. So maybe I am using TQM without really thinking about it."

Communication (COM). This variable received a relatively low number of mentions among informants (61) (see Appendix D). However, the variable was addressed in three ways: (1) as a TQM technique of sharing information through a communication plan; (2) as a positive outcome of TQM implementation where communication between departments, functions, and levels has been enhanced; (3) as a reflection of lack of SMC through inadequate publicizing of TQM

philosophy.

The last point is addressed in the following quote: *"[TQM] was not well publicized by the senior management of the hospital. So it was up to the pilot teams to walk the walk and talk the talk...You know its difficult for 11 people to sell TQM in a large hospital environment like this."*

Measurement with SPC. This variable received the third highest number of mentions (90 mentions) among informants (see Appendix D). Feedback on the use of SPC methods was generally positive. This variable was always discussed in conjunction with the performance of quality activities such as conducting measurements and displaying data. The case hospital used many of the TQM tools prescribed in the literature (see Appendix G).

However, informants criticized the lack of ongoing use of SPC methods, particularly those methods related to measures of process performance. *"With TQM, you need to measure and measure! And we were able to only do it once, so we have a baseline, but nothing to compare it to".* The absence of such measures was viewed as a shortcoming in the TQM implementation of the case hospital. This issue is further addressed below.

B. Quality Outcomes

Informants identified some positive and negative outcomes of the TQM implementation. Few of these outcomes have been documented in a systematic way; they were merely drawn from the perceptions of interviewees of the TQM initiative. Hence, they are essentially subjective views of quality outcomes.

The positive outcomes included greater employee involvement, enhanced customer focus (i.e. increased sensitivity to the needs of patients and other departments), improved communication, a reduction in turf wars, and morale improvements. In addition, the pilot teams earned some successes such as a reduction in laboratory turnaround time, and improvements in patient transportation time.

By contrast, some of the negative outcomes of TQM implementation included negative feelings due to unmet expectations, resentment of the time commitment involved in TQM, and union and employee resistance. The most significant of the negative outcomes involved the unmet expectations. Employees appreciated being asked for their feedback, and being involved in recommending sources of improvement. However, employee participation is not always possible, and this fact has created some disappointment. In addition, the members of the pilot teams were disappointed when their recommendations did not receive the support of senior management.

Disappointment also resulted from the lack of spread of TQM throughout the hospital. As one informant stated: *"We were hoping that, as we went through this process, we would see more and more people aware of TQM, involved in it, and embracing the philosophy".*

Despite this fact, none of the pilot team members regret their involvement in TQM (although they did occasionally resent the time commitment - *"the time commitment to it was huge"*). These respondents appreciated the learning experience, and claim to apply some of the TQM techniques and tools in some way on a daily basis. As one informant stated:

> *"TQM has been a lesson, an experience that will allow me in the course of my management of the department to solve problems in a different way, or in a modified way, and to be more conscious than I already was at the beginning of the importance of involving people who are doing the job when there is a change, and the consumers of these products."*

Finally, most informants were asked to rate their hospital as a total quality institution on a scale of 1 to 10. The responses varied between 2 and 8, and the average was 5. This mean indicates that the case unit is generally perceived to be half-way toward meeting its objective of becoming a total quality hospital.

C. Obstacles to TQM Implementation

Informants identified numerous obstacles to the effective implementation of TQM at the case hospital. These inhibitors are presented in Appendix F.

As previously noted, the primary inhibitor identified by respondents was lack of senior management commitment to TQM. Senior managers did not remain abreast of developments with the pilot teams nor did they regularly discuss quality issues at executive meetings. One informant was quoted as stating: *"We were supposed to have at least one of our senior management meetings each month to only talk about quality issues. That could never happen. Finance always overshadowed everything."*

The fact that top management support to TQM was lacking hindered the development of organizational commitment to TQM because the absence of SMC did not help to raise awareness of TQM. In this way, lack of executive commitment posed a significant obstacle to TQM implementation.

A second obstacle to the TQM initiative involved the lack of involvement of physicians. Many front-line employees took their cues from physicians who remained distant from the TQM effort. Physicians' lack of support for the effort affected employees' perceptions of the importance of the quality movement:

> *"Staff as a whole [were discouraged] when there wasn't a lot of physician involvement. You really discourage the staff because they realize that the physicians are key stakeholders in these activities. And if you can't get them on board in a more significant way, then you know you are going to have difficulty at every turn of the road."*

Another obstacle to TQM involved informants' claim that the pilot team mandates were too big. Some pilot teams complained that the mandates set by the quality council were too broad for employees unfamiliar with TQM: *"It was a huge problem we were tackling... huge which I think created problems because for our learning experience it was just too big".*

For example, one team was designed to address the issue of having patients arrive to their destination on time. However, team members quickly discovered that so many elements factored into patient transportation that the team's mandate became unmanageable. Therefore, broad pilot team mandates posed an obstacle to the TQM implementation because the processes under study were simply too complicated.

Another obstacle to effective TQM implementation was resistance. This resistance surfaced among employees and within unions. Resistance occurred at the grass roots level among employees who questioned management's motives for initiating TQM. Employees felt that management was seeking to lay blame for inefficiencies, and to justify lay-offs. By contrast, unions were concerned with the effect of TQM on jobs and the implications for compensation systems. The fact that this resistance was inadequately handled presents another example of the perceived lack of SMC because such resistance should have been dealt with by senior managers and the quality council.

Informants also identified the pilot basis upon which TQM was initiated as an obstacle to TQM. The extended use of this approach limited the spread of TQM throughout the hospital: *"As long as you see something being worked on a pilot basis, it's like, "OK, I will work with those principles during the project itself, but then when I get out of the project, I do my business normally".*

The absence of structure (i.e. deadlines and goals) was also identified as an obstacle to TQM implementation. Informants claimed that no firm deadlines or goals were ever imposed on these teams. The absence of concrete deadlines was intended to avoid pressuring the teams. However, the teams lagged in making their recommendations as they got inundated in the massive banks of data which had been collected. As one informant stated:

> *"We had no deadline for producing results. And that felt good at the time because you felt you had an endless amount of time to do things. It took a little bit of pressure off you, but it made you not make some key decisions about what you are going to look at [..] so I really think we should have been held to task..."*

The establishment of realistic time frames may have sharpened the focus of team efforts. Moreover, the specification of goals may have motivated employees with the TQM efforts. Once again, quality goals and deadlines for their achievement should have been established and reinforced by senior management and the quality council.

A further obstacle to the TQM implementation was related to the fact that the case hospital did not properly evaluate the quality outcomes. As one informant stated: *"We have been weak on evaluation"*. Although processes were initially measured, such measurements are not ongoing -*"We don't do those kinds of measurements on a regular basis and in a systematic way"*. Therefore, the hospital has no means of continually evaluating the processes in question. Continuous use of SPC methods would help with such evaluations, and facilitate overall evaluation of the progress of the quality effort.

The discussion above reveals that the quality efforts of the case unit were lacking in several respects. The obstacles associated with the TQM implementation effort can be summarized as follows:

- *Inadequate commitment to TQM on the part of top management;*
- *Measurement of processes not ongoing;*
- *Lack of physician buy-in;*
- *Pilot basis orientation;*
- *Absence of structure (i.e. deadlines and goals);*
- *Pilot team mandates too big.*

D. Empirical Model of TQM Implementation

Analysis of the transcription and documentation data revealed that the implementation of TQM in the case hospital differed significantly from the

implementation process shown in the theoretical model (i.e. the model derived from the literature) (see Appendix A). The empirical model of TQM implementation based on the experiences of the case hospital is presented in Appendix H, and is explained below.

The *quality vision* was introduced by the organizational leader who first expressed an interest in TQM by requesting further information on the subject. The motivation to pursue TQM stemmed from competition with other hospitals (e.g., competitiveness in attracting health care professionals), and a desire to satisfy customers (i.e., patients, physicians, departments). These sources of motivation are consistent with the theoretical model. However, the quality vision did not appear to be adequately publicized throughout the hospital. Hence, it was not shared by all organizational members.

An American consulting firm specializing in TQM implementation was recruited to assist the hospital with its quality initiative. A local firm was also hired to advise on provincial and federal health care guidelines. These consultants conducted a readiness study within the hospital to assess the organizational culture. This data was also used to create a training manual specific to the needs of the case unit.

Orientation and *training sessions* were first provided for senior management. This *training* was intended to develop understanding and commitment to TQM. Top management was instructed in the principles of TQM, and the critical success factors required for the effective implementation of TQM. Therefore, the TQM effort did initially have the commitment of senior management.

However, as described above, top management support for TQM was not fostered throughout the quality implementation. Therefore, senior management commitment to TQM did not fuel *organizational commitment to TQM.* This lack of commitment on the part of top management contradicts the theoretical model. The full implications of this problem are further reviewed in the discussion section below.

By contrast, *quality planning* was performed. Within this step, a quality council composed of senior managers and the QA coordinator was assembled. This council did not include any middle-level managers or front-line people. The quality council selected problem areas, and determined TQM pilot teams around these areas. The problem areas were not linked to the strategic mission or quality vision of the hospital; they simply represented problems of a long-standing nature. These problems areas were determined through the use of a majority voting technique among senior managers.

One purpose of the quality council was to oversee the quality effort, and to build organizational commitment to TQM. The quality council oversaw the quality effort by evaluating the progress of the pilot teams. However, evaluations were sporadic because team progress was only evaluated during infrequent oral progress reports and the final presentations. Therefore, unlike the theoretical model, evaluation was not performed throughout the process.

The quality council sought to build *organizational commitment to TQM* by spreading the successes of the quality movement and staging a TQM day. However, this process once again did not appear to be ongoing as the theoretical model suggests. Moreover, the quality council did not deal with resistance to change as recommended in the theory. In short, *organizational commitment to TQM* was weak because of these shortcomings in quality planning which contribute to the development of this commitment.

Organizational commitment to the quality effort was also weak because HRM systems were not redesigned. Union resistance within Canadian health care is simply too strong to allow for a significant restructuring of HRM systems. Quality *training* was performed, but it was only offered to pilot team members and facilitators. This fact served to limit the development of organizational awareness and commitment to TQM.

A *quality structure* was put into place with the formation of multi-disciplinary teams around the processes targeted for improvement. The composition of the teams was determined by the quality council. The team members were trained in TQM tools and techniques by the consultants, as were the facilitators.

The teams performed the *quality activities* specified in the theoretical model of TQM implementation. In so doing, they developed recommendations for improvement of specific processes. Some of the recommendations were implemented fairly quickly within each problem area. These remedies did not require any significant investment of resources (i.e. financial or personnel). For instance, the pilot team examining turnaround time for lab results in the Emergency Room discovered that certain lab results did not appear on the hospital's computer terminals. They therefore spoke to Information Systems (IS) who arranged to make these results accessible to users.

This step reduced the number of calls to the labs which previously slowed down technicians in processing results. Moreover, this enhancement was *"built into our internal costs.. it wasn't anything we needed external expertise for"*. Therefore, it was neither excessively time-consuming nor costly to implement.

The remaining recommendations from all the pilot teams were included in separate final reports which were presented to the quality council approximately 2 years

after the teams were first put into place. To date, most of these recommendations have not been implemented: *"I would say that of all the recommendations that were made, not a lot got put into place"*. The pilot teams either encountered resistance from divisional directors due to resource constraints, or senior management has not endorsed the recommendations. In short, *implementation* has been weak in the TQM effort, and there has been no systematic *evaluation* of quality outcomes.

The TQM initiative at the case unit appears to have stagnated at this stage. It is presently being overshadowed by more pressing health care concerns at the provincial level: numerous hospitals are closing, and the case unit is part of a merger with four other teaching hospitals. Several quality teams have flourished, but the three initial pilot projects have disbanded.

E. Phases of TQM Implementation

The implementation phases of the TQM initiative at the case hospital were consistent with the phases prescribed in the Health Canada study (1993).

The first six months were devoted toward *building awareness* of TQM. This phase was followed by the *planning phase* which took over a year to complete. The next phase, *deployment* of the TQM effort, has occurred since October 1992 which is also consistent with the three-year time period projected in the study.

However, the study also estimates that the final stage, *full integration*, will take approximately 5 years, and the hospital is presently only in its fourth year of implementation. However, given the stagnation of the TQM effort to date, *full integration* appears unlikely within the next year.

7. DISCUSSION

As the results section above revealed, the TQM effort implemented by the case unit has not lived up to all its expectations. The TQM literature on health care generally states that, at best, success will only occur within 3-5 years of the implementation (Health Canada, 1993). The case unit is only in the fourth year of implementation so the full effect of TQM is not yet known. However, most informants still express some degree of disappointment with the quality effort.

In light of this fact, the empirical model of TQM implementation derived from the experiences of the case unit is inadequate in terms of its overall effectiveness. This model must be modified to take into account the problems listed above. The revised model appears in Appendix I. This model holds greater promise for the successful implementation of TQM in a Canadian health care setting.

A. Revised Model of TQM implementation

The revised model begins in the same way as the theoretical and empirical models: a *quality vision* is introduced by the organizational leader. This vision

is triggered by consideration of competitors' actions, and customer demands.

After the introduction of the *quality vision*, *commitment to TQM* must be developed among top management. This commitment can be fostered through training designed to: (1) enhance understanding of quality principles, and (2) raise awareness of critical success factors. Moreover, *senior management commitment* to TQM must be maintained and demonstrated throughout the quality implementation to help increase *organizational commitment to TQM*.

In addition to *senior management commitment*, *quality planning* will also contribute to the development of *organizational commitment to TQM*. For instance, customers and their expectations must be identified. These expectations should also be linked to the strategic objectives of the firm. Moreover, the pilot problems selected to initiate the effort should be linked to the strategic goals of the hospital. These problem areas should also be relatively simple and direct.

Within quality planning, a quality council must also be formed. The quality council should be composed of middle managers from different strategic departments in the hospital and senior managers (Pehrson, 1994, p. 36). This council should not be built exclusively from top management (Pehrson, 1994, p. 36). In this way, there is less overlap between the quality council and the top management committee.

The more committed top management is to TQM, the less their presence becomes necessary on the quality council (Spector and Beer, 1994, p. 67). Executive commitment to TQM can be demonstrated from the activities of the senior management team which can remain distinct from the quality council. Moreover, the presence of middle management on the council helps to promote TQM at the front-line level (Pehrson, 1994, p. 30). It also provides TQM leadership on a daily basis, and reduces resistance from employees who might otherwise view TQM as a temporal agenda item for top management.

The quality council should select strategic problem areas to be addressed by quality teams. The council should also continually evaluate the progress of teams, advertise the quality initiative, and deal with resistance to the initiative.

In addition to *senior management commitment* to TQM and *quality planning*, *quality structure* will also feed into the development of *organizational commitment to TQM*. *Quality structure* involves assembling quality teams around the processes requiring improvement. These teams should be multi-disciplinary in nature. In particular, a valiant attempt must be made to recruit physicians in the TQM initiative. Although physicians generally cannot spare the time for training, they have been found to be attracted to TQM tools and techniques because of their scientific orientation (Ummel, 1994, p. 12; Pehrson, 1994, p. 37). The TQM method closely resembles the medical model: diagnosis → treatment → follow-up.

Therefore, physicians can potentially adopt TQM methods if they are applied to areas directly relevant to their work.

Moreover, physicians and other team members need not attend comprehensive training sessions; they can experience *training* on a just-in-time basis (Rauber, 1994, p. 88). Such training involves instructing players in TQM tools as the need arises. This form of training can be applied to both physicians and other organizational members because it provides information on TQM in more digestible chunks.

Once the *quality structure* is put into place, the *quality activities* specified in the theoretical model must also be performed within teams. Specific deadlines and goals must also be established for the achievement of process improvements. Moreover, communication between quality teams and the quality council and top management should be maintained on a regular basis.

In the *implementation* step, recommendations not requiring a significant resource investment should be implemented immediately. By contrast, recommendations requiring resources should be presented to the quality council who must respond to the recommendations in a timely fashion.

In the *evaluation* step, the effectiveness of any recommendations which are implemented must be evaluated. This evaluation should involve systematic and consistent documentation of process performance and outcomes. Such documentation may be facilitated with the use of SPC methods.

Teams should also plan for continuous improvement of processes in the *follow-up* step. Continuous improvement may be achieved through the formation of TQM sub-committees designed to address specific process problems. In this way, the implementation of TQM is not perpetually perceived as a "pilot project".

The revised model described above represents a composite of theory on TQM and actual experiences with TQM at the case hospital. It is presented as a descriptive framework for the successful implementation of a total quality initiative in a Canadian hospital.

B. Comparison of Three Models

I have now presented three models of TQM implementation: (1) a theoretical model based on the literature, (2) an empirical model based on the experiences of the case hospital, and (3) a revised model which combines both theory and empirical findings. It is important to compare these three models in order to describe the similarities and differences between them.

All three models begin with the introduction of a *quality vision* by the organizational leader. This introduction is followed by the development of *senior management commitment* to TQM. The theoretical and revised models posit that this commitment should be ongoing, and should therefore foster the development of *organizational commitment to TQM*. However, in the empirical model, *senior management commitment* was not consistent throughout the TQM implementation, and therefore, it did not contribute to organizational commitment.

Quality planning appears in all three models, and it feeds into the development of *organizational commitment to TQM*. However, within *quality planning*, the composition of the quality council differs in the empirical model relative to the theoretical and revised models. In the empirical model, the quality council is composed solely of senior managers. By contrast, the revised and theoretical models call for the involvement of both senior and middle managers for reasons discussed above.

Moreover, *HRM redesign* appears in the theoretical model. However, in the empirical model, the only facet of HRM affected by the TQM implementation and contributing to organizational commitment to TQM was *training*. Conversely, the revised model does not include *HRM redesign* at all for two reasons: (1) just-in-time training is recommended in the revised model which, by definition, cannot be performed at a single time in a single step, and (2) union resistance is currently

too strong in Canadian health care to allow for a significant restructuring of HRM systems.

By contrast, *quality structure* appears in all three models. However, in the revised model only, *quality structure* feeds into the development of *organizational commitment to TQM*. Given the absence of HRM redesign and intensive training, just-in-time training must be planned and initiated in the quality structure when multi-disciplinary teams are formed. Within these teams, an effort must also be made to recruit physicians since lack of physician involvement was a significant obstacle in the TQM implementation at the case hospital. These elements of TQM implementation (i.e. sequence of *quality structure* and physician buy-in) are unique to the revised model.

Quality activities and *implementation* appear as steps in all three models of TQM implementation. However, in the empirical model, *implementation* is weak as few recommendations had actually been implemented at the time of the study at the case hospital. Moreover, the empirical model ends with *implementation* because there is no *evaluation* of outcomes.

Both the theoretical and revised models have *evaluation* steps to monitor the effectiveness of implemented quality recommendations. The revised model also includes a *follow-up* step where TQM sub-committees are formed to continue the

TQM initiative since continued piloting of projects seemed to prevent the overall filtration of TQM in the case hospital. In this way, the *follow-up* step feeds into the development of *organizational commitment to TQM.*

The revised model is intended to describe the specific sequencing of actions to be taken for an effective TQM implementation in a Canadian hospital. It therefore fulfils the primary objective of the present study which was to provide guidelines for Canadian hospital administrators seeking to implement TQM.

8. LIMITATIONS

One limitation of the present study involves the sample size: a single case study was performed in one hospital. The use of a single case study was justifiable to the extent that the study was exploratory in nature (Yin, 1989, p.43). Nonetheless, analysis of a single institution brings into question the overall generalizability of the findings. Caution should be applied in transferring the results of this study unilaterally to hospitals across Canada.

The transferability or external validity of the study is therefore in question. However, the construct of generalizability is addressed with the use of multiple data collection techniques, specifically documentation and individual in-depth interviews. Data generated from such different sources as well as the use of two interviewers per interview serves to corroborate the research in question thereby

enhancing the study's generalizability to other settings (Eisenhardt, 1989).

A second limitation of the present study is associated with the dependability of the findings. The changing social conditions surrounding the implementation of TQM in Canadian health care can not be ignored (Marshall and Rossman, 1989, p.146-147). Health care in Canada is operating in a high degree of uncertainty. Therefore, the viability of quality initiatives in the future may be questionable given the resource investment required to launch TQM. This fact must be taken into consideration when considering the overall dependability of the study's findings.

The reliability of the present study is also a source of concern. Reliability deals with the consistency of the findings. However, in the case of qualitative research, it has been argued that such studies can not be replicated: the real world is constantly changing therefore it is impossible to repeat the exact same study (Marshall and Rossman, 1989, p.148).

Moreover, in observing the issue of reliability as a potential limitation of this study, it is important to note that the study was intended to be impressionistic: the goal was to understand the overall process of TQM implementation in this case unit. Given the exploratory stage of TQM implementation in Canadian health care, the study permitted such a holistic assessment of the phenomenon (Davis and

Cosenza, 1993, p.303).

Another potential limitation of the study is related to use of individual in-depth interviews as one source of data collection. One-on-one interviews often prove to be very time-consuming, and they frequently result in fatigue on the part of the researcher and information overload (Davis and Cosenza, 1993, p. 305). This overload and fatigue can potentially obscure the interpretive ability of the interviewer. However, this potential limitation was addressed with the use of two interviewers who were simultaneously probing for answers.

A final limitation of the present study is that the revised model recommended for successful TQM implementation in Canadian health care has not been tested. There is no way of attesting with any degree of certainty to the effectiveness of the model. Therefore, future researchers are invited to apply this model to the total quality implementation efforts of Canadian hospitals thereby testing its viability and validity in this context.

9. FUTURE RESEARCH

In view of the discussion above, future research on TQM and health care can test the revised model of TQM implementation developed in the present study. This model is intended to provide some empirical guidelines for the pursuit of TQM initiatives in Canadian health care.

However, there is a need for more such empirical guidelines. These guidelines or principles can be formulated with additional research using a similar methodology. The TQM efforts of more case hospitals must be examined in order to develop prescriptions for the implementation of total quality programs in the context of Canadian hospitals.

Future research can also devote greater attention to the obstacles to effective TQM implementation in Canadian health care. The present study outlined some of the difficulties encountered in the pursuit of quality initiatives. These inhibitors merit further research attention because they can seriously impede the success of a quality initiative in a Canadian hospital.

Moreover, some similarities may exist between the obstacles encountered in Canadian health care and business settings when implementing TQM. This research may therefore produce information which will aid different organizations in their pursuit of quality efforts.

Finally, there is also a need for longitudinal research on TQM implementation in Canadian health care. To date, these implementation efforts have been examined at one phase of implementation, therefore, the research view is essentially post-dictive. However, researchers can trace the TQM implementation effort in a Canadian hospital starting from its initiation over an extended period of time.

This type of research will provide valuable insight into the exact process by which TQM is implemented in a Canadian hospital, and the obstacles to that implementation.

10. TRENDS IN QUALITY AND HEALTH CARE

Quality initiatives in health care appear to be flourishing at the present time. These trends create concerns in terms of their implications for the status of health care delivery. Moreover, they raise numerous interesting questions for future research.

One development in quality and health care is related to the fact that many quality initiatives in Canada are now being labelled as Continuous Quality Improvement (CQI) (Health Canada, 1993). This term is being more readily accepted than "total quality management" because the use of the term "management" has negative connotations for some employees. TQM tends to be perceived as a management fad or innovation thereby arousing resistance among workers. By contrast, CQI is somewhat better received.

CQI reflects many of the same principles as TQM. It stresses the following elements (Health Canada, 1993, p. 9):

- *Processes of health care and health delivery;*
- *Customers who are served;*

- *Continuous monitoring of quality with the intent to improve upon it;*
- *Committed leadership;*
- *Education;*
- *Long term commitment.*

However, CQI differs in terms of its implementation from TQM. The multi-disciplinary teams in CQI are generally organized around medical specializations rather than processes requiring improvement. Therefore, QI teams may be developed within say, surgery, emergency, or geriatrics. These teams comprise professionals from different backgrounds (e.g., physicians, nurses, social workers, dieticians, occupational therapists), but they are within a common specialization (Cheung & Koch, 1994, p. 19).

As a result, CQI places greater emphasis on clinical quality. Will CQI be more effective than TQM because it focuses on clinical quality which is the overriding concern of hospitals? Will it gain more acceptance and legitimacy on the part of front-line employees, physicians, managers, and administrators? Further research is evidently required to probe these questions, and to fully understand the effect of CQI in health care, particularly in Canada.

Research on quality in health care is also seeing increased use of the term patient-centred or patient-focused care. This term has been defined as "the redesign of

patient care so that hospital resources and personnel are organized around patients rather than around various departments" (Sherer, 1994, p. 14). The guiding principle of patient-centred care is bringing services as close as possible to the patient.

Patient-centred care stresses decentralization, cross-training, work-redesign, teamwork, and restructuring (Sherer, 1994, p. 14). It therefore represents another means of ensuring satisfaction to the customer. Moreover, patient-centred care programs are deemed to be an outgrowth of TQM programs. However, this quality initiative raises numerous questions: Is it more efficient to bring services to the patient? Can such a system create potential bottlenecks? Will such restructuring become prohibitively expensive for budget-constrained Canadian hospitals? Future research should examine these issues and many others associated with the implementation of patient-centred care.

Another trend in quality in health care is clinical benchmarking. Clinical benchmarking basically involves measuring outcomes categorised by a specific disease or procedure, and comparing performance against a benchmark standard (Bellile, 1995, p. 15). Multi-disciplinary teams then assess performance, and implement process changes to improve performance.

These programs are deemed to be a positive evolution of TQM for two reasons: (1) they focus on clinical projects rather than administrative ones which do not directly impact patient health, and (2) they provide a useful means of measuring performance (Bellile, 1995. p. 15). Clinical benchmarking also stresses multi-disciplinary teamwork, communication, and empowerment (Bellile, 1995, p. 16). However, an added dimension of this quality initiative is that it provides meaningful information for clinical decision-making. Will the collection and use of such information adequately respond to the quality needs of Canadian hospitals or, should clinical benchmarking be used in conjunction with other total quality efforts? Once again, these issues represent important subjects for future research.

11. CONCLUSION

The present study has examined TQM in health care in Canada. In particular, it has developed a descriptive framework for TQM implementation in Canadian hospitals. This framework appears in a revised model of TQM implementation which is formulated from theoretical guidelines drawn from the literature and empirical findings on TQM implementation in a Canadian hospital.

In developing this framework, the obstacles to effective TQM implementation within a Canadian health care setting are also reviewed. This discussion was based primarily on the experiences of the case hospital. It therefore revealed elements of TQM implementation which must be taken into account as potential

pitfalls to a successful total quality initiative.

The present study also verified the primary phases of TQM implementation prescribed in a study by Health Canada (1993) for Canadian hospitals. It confirmed three out of the four stages (*awareness*, *planning*, *deployment*), and their projected time frames.

In examining what the present study has achieved, it is important to recognize the fact that Canadian hospitals are operating in a highly dynamic environment. Therefore, it is difficult to reach any definitive conclusions on the status of quality and health care in this country.

Budget cuts, closures, and mergers are all legitimate threats presently confronting hospitals in Canada. This turbulence in Canadian health care is a relatively new phenomenon given the stability of the industry in the past. However, the era of certainty appears to be vanishing as the public and various government regulatory bodies are increasingly demanding accountability on the part of health care institutions. Canadian hospitals are now being asked to cut costs, streamline processes, and improve services, or risk closure. Within this environment, the quest for quality appears to be flourishing.

With all the economic and social pressures on the Canadian health system, efforts are being made across hospitals in Canada to cuts costs while safeguarding quality (Chang, 1994, p.27). Canadians are being confronted with the reality that their most cherished social program - health care - has become a huge financial drain on provincial and federal budgets. In consequence, health care practices and the overall operating efficiency of Canadian hospitals are being re-evaluated. As a result, "quality" may increasingly become the primary indicator of long-term success and survival in the Canadian health system.

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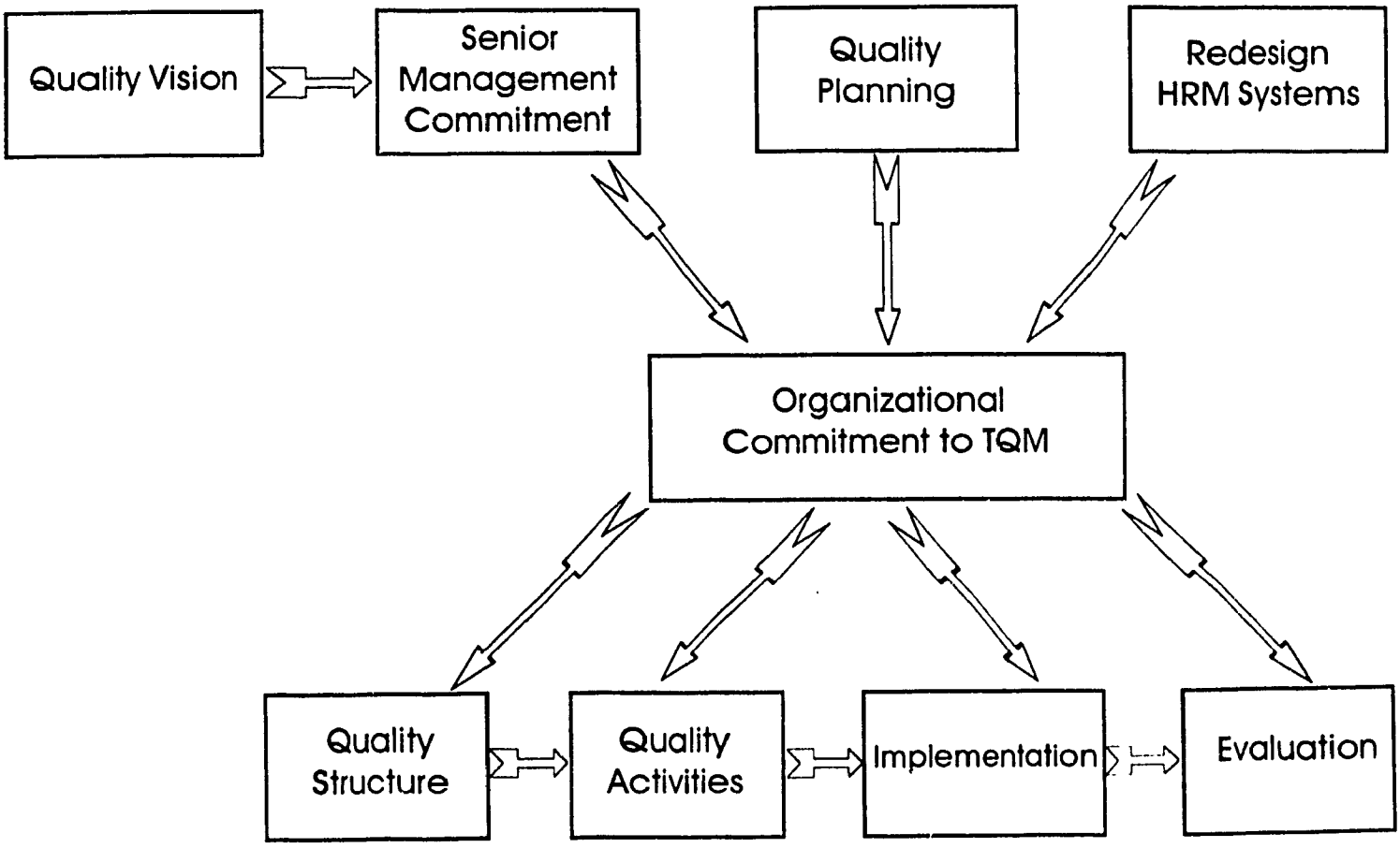
APPENDIX A: THEORETICAL MODEL OF TQM IMPLEMENTATION



APPENDIX B:

SAMPLE INTERVIEW QUESTIONS

1. When did you first become aware of Total Quality Management (TQM)?

2. What forces prompted the hospital's decision to implement TQM?

3. How was the decision taken? Who was involved in the decision-making process? When was the decision taken?

4. Were there any objections to undertaking TQM? If so, what were they? How were they countered?

5. What kind of information/data needs did you have with TQM? Was this information/data available?

6. How was TQM transmitted to personnel in the hospital? What training efforts (if any) were used?

7. What steps did you take to implement TQM? What role did you serve in the implementation?

8. With whom were you involved in the TQM implementation effort? What were their responsibilities in this effort?

9. What TQM tools and techniques are you using?

10. What criteria were established to determine whether or not specific goals of TQM were met?

11. Did the TQM implementation evoke any changes in hospital processes? If so, what were the changes?

12. Did TQM implementation affect performance? If so, how?

13. What were some of the critical factors that acted to facilitate TQM implementation? What factors inhibited this implementation?

14. What role did leadership serve in the TQM implementation? Who demonstrated these leadership behaviours?

APPENDIX B: (cont)

SAMPLE INTERVIEW QUESTIONS

15. What were some of the positive outcomes of TQM implementation? Are these outcomes documented?

16. What were some of the negative outcomes of TQM implementation? Are these outcomes documented?

17. What would you have done differently with the TQM implementation process?

18. What were your expectations of TQM?

19. Were these expectations met? How?

20. Will it be difficult to maintain momentum and commitment to TQM in your hospital? Why or why not?

21. On a scale of 1-10, how would you rate your hospital as a "total quality organization"?

APPENDIX C:

CONTACT SUMMARY FORM: SAMPLE

Contact Type: Interview
Contact #: 8

Site: XX
Contact Date: 95/05/04
Contact Time: 10:00
Coder: ZK
Date coded: 95/05/12

Page	Salient Points	Variables/ Themes
2	Training very intensive - responded to information needs	TRG
3	Multi-disciplinary teams increased sensitivity to differing perspectives	MDT
4	TQM effort heightened sensitivity to needs of customers	CF
5	Pilot team mandate too broad	Inhibitor
6	Didn't get much support from senior management -- big downfall for team	SMC
7	Communication enhanced	Positive outcome
8	TQM Sub-committees have taken root (spread of TQM)	Positive outcome
10	Need guidance from top for TQM success	SMC
11	Physicians not involved in TQM process	Inhibitor

APPENDIX D:

DATA ACCOUNTING SHEET

VARIABLES (# of mentions)							
INFORMANT	QV	SMC	TRG	CF	COM	SPC	MDT
1			22	8	1	15	34
2	3	4	17	6	1	17	18
3	2	4	7	6	5	18	19
4		5	13	3	4	10	5
5		2	4	2	1	4	8
6				12	1	1	6
7	4	6	5	4	16		22
8	2	10	10	6	6	2	9
9	1	3	15	5	13	7	9
10		5	12	7	7	5	5
11	1	4	34	4	6	11	11
Totals	13	43	139	63	61	90	146

APPENDIX E:

DOCUMENT SUMMARY FORM: SAMPLES

DOCUMENT FORM

Site: XX
Document: 1
Date received: 95/04/24

Name of document:

TQM Transport Team Final Report and Recommendations.

Event with which document is associated:

Presentation of pilot team findings to Quality Council in February 1994.

Significance or importance of document:

Reviews entire work process of pilot team, and describes outcomes to date.

Brief summary of contents:

Description of team mandate;

Composition of team;

Review of training of team members;

Summary of work methods including communication plan;

Description of customers;

Data collection and results of data analysis;

Recommendations of team;

Difficulties and benefits associated with TQM experience.

APPENDIX F:

PRIMARY INHIBITORS OF TQM EFFORT

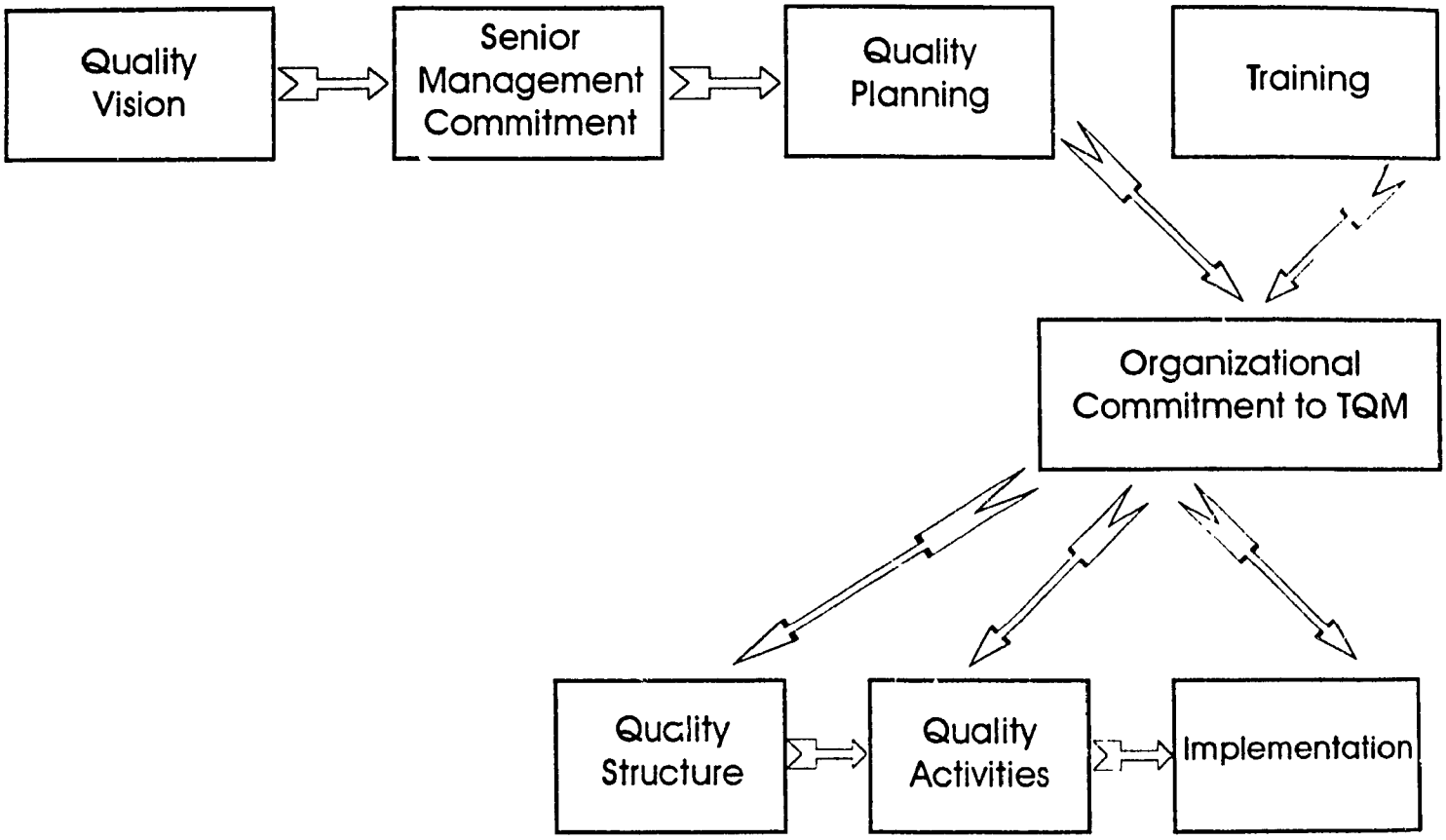
INHIBITORS	# OF MENTIONS
Lack of senior management commitment	26
Lack of physician buy-in	14
Pilot team mandates too big	10
Employee resistance	9
Other: (< 5 mentions) -Pilot teams too large -Lack of TQM advertising -Union resistance	 4 3 3

APPENDIX G:

UTILIZATION OF TQM TOOLS

Rank	Tool	# of mentions
1	Process Flow Chart	11
2	Internal Customer Survey	11
3	Fish Bone Diagram	8
4	External Customer Satisfaction Survey	6
5	Other (less than 5 mentions): -Brainstorming techniques -Control chart	 2 1

APPENDIX H: EMPIRICAL MODEL OF TQM IMPLEMENTATION AT CASE HOSPITAL



APPENDIX I: REVISED MODEL OF TQM IMPLEMENTATION