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# Total Quality Management: How can We Make the Implementation Effective?

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Total Quality Management (TQM) has been extensively adopted by many organizations but has not necessarily resulted in the desired levels of effectiveness. A large number of failures have been attributed to faulty implementation. This paper presents the results of a study of implementation processes in hospitals. It examines the role of vision, leadership, momentum of change, teamwork, availability of resources, focus, and training on the desired medical and financial outcomes. The paper also discusses the implications of the study for decision-makers.

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## Introduction

Total Quality Management (TQM) has generated a tremendous amount of interest among consultants. Several attempts to implement TQM across many sectors of the economy, including health care, have been made (Dean and Bowen, 1994; Spencer, 1994). The record of successful realization of TQM's potential is dismal. In a large majority of the cases, the failure is attributed to the problems encountered during the implementation process (Reger *et al*, 1994). This points to a need for developing a better understanding of the TQM implementation process and drawing lessons to achieve greater level of success.

Despite its popularity and widespread implementation, there is considerable confusion about TQM. Reeves and Bednar (1994) concluded that part of the contradictions in the current literature could be attributed to the absence of a global definition of quality. However, there are some underlying principles that unite the various models of TQM. Dean and Bowen (1994) suggest that there are three distinctive principles that underpin the various TQM models.

The first and most important principle is customer focus. The goal of satisfying customers is fundamental to TQM and is expressed by the organization's attempt to design and deliver products and services that fulfil customer needs... The second principle, continuous improvement, means a commitment to constant examination of technical and administrative processes in search of better methods... Teamwork - collaboration between managers and non-managers, between functions, and between customers and suppliers - is the third TQM principle (Dean and Bowen, 1994 pp 394-395).

Each of these principles, although stated as distinct, is inextricably linked to one another. The ultimate aim is the fulfilment of customers' needs using the most effective and efficient methods. Customer focus is driven by the desire of an

organization to identify customer needs and acquire feedback on his/her satisfaction with the organization's current efforts to meet those needs. Continuous improvement is the next logical step that requires organizations to act based on the acquired information. In order to achieve and maintain customer satisfaction, organizations may need to continuously develop better products and services, and improve methods of producing and delivering them. Finally, for an organization to experience continuous improvement, everyone involved with producing and delivering a good or service tries to identify opportunities for improvement and works together to implement the necessary changes. This requires collaboration across levels, functions, and other organizational boundaries, making teamwork essential.

Other distinctive features of TQM like visionary leadership, process management, individual and organizational learning, internal and external cooperation, employee empowerment and fulfilment (Anderson *et al.*, 1994) are all related to these principles. Visionary leadership, which refers to the ability of the management to provide a long-term vision for the organization based on changing customer needs rather than on internal control, is a derivative of the first principle - customer focus. Top management has to develop and champion a vision for the organization that facilitates the transition to TQM and maintains customer orientation after the transition.

Continuous improvement, the second principle, underlies the shift towards process management, and the need to facilitate learning at the individual, group, and organizational level. Process management focuses on managing the means rather than the ends. It requires people to understand the organizational processes and seek newer and better ways of doing things. However, employees in a non-TQM environment were not required to examine organizational processes, and often lack the necessary skills to do so. Therefore, process management has necessitated the creation of a learning environment in organizations. A learning environment, exemplified by company training or external and internal educational development opportunities, enhances the ability of everyone to participate in process management leading to continuous improvement.

Teamwork, the third principle, leads to internal and external cooperation, and the need for employee empowerment and fulfilment. Teamwork requires members of the team to indulge in non-competitive

activities to achieve better collective goals. If properly implemented, this results in cooperation within an organization and with other organizations with which it interacts. Finally, in order for the teamwork to be successful, employees must be provided with decision-making authority and organizational support to make real changes to improve processes. It is also essential to see that they receive monetary and non-monetary rewards for their efforts, leading to initiative and commitment to the organization.

Against this backdrop, we look at the issues and their resolution in implementing TQM in the health care sector of Canada and draw lessons for successful implementation of TQM. To start with, we present a model of TQM implementation based on an exploratory study of two hospitals. The various relationships in the model are examined through a large sample survey. The implications of findings are discussed in the last section.

## **The Health Care System in Canada and the Context for TQM**

The health care system in Canada is a complex, nation-wide, publicly funded system. The health care organizations (hospitals, nursing homes, etc.) are largely privately owned or non-owned societies or trusts, but operate under the authority of the ministry of health in each province. The provincial government is in turn constrained by federal standards and financial arrangements between the federal and provincial governments in order to ensure acceptable standards of health care across the country. The federal government was largely kept out of the area of health care until the Second World War. The first major federal government action that influenced health care in the provinces was the introduction of the National Health Grants Programme in 1948 (Taylor, 1960). It provided grants for a variety of public health care services, including professional training and surveys, and hospital construction. In 1956, it adopted the Hospital Insurance and Diagnostic Services (HIDS) legislation that offered the provinces funds for hospital care if they met certain federal conditions, and in 1968, it initiated the Medical Care Insurance Programme which provided provinces funds for non-hospital based health services. The federal programmes effectively subsidized by approximately 50 per cent the provincial government expenditure on the health care infrastructure and also its operating costs.

By the mid-80s, the health care system created a significant financial burden at both the federal and

provincial levels of government. Concern with government expenditure on health care and the general concern with increasing government deficits and declining revenues in this period had caused the governments to rethink policies towards health care. There was a general concern about the level of over-expenditure on health care, along with a belief that there was a lot of waste in the health system, which led to the desire to ensure that the hospital system operated more effectively. In order to achieve the goal, the federal government promoted the adoption of TQM by hospitals in Canada. TQM came to be known as Continuous Quality Improvement (CQI). The Canadian Council of Health Facilities Accreditation (CCHFA) included TQM criteria in Acute Care Standards 1995 that were to be used in the accreditation process for acute care hospitals. Further, the federal ministry of health published *An Inventory of Quality Initiatives in Canada* and a guide called *Quest for Quality in Canadian Health Care: Continuous Quality Improvement* to assist the hospitals to implement TQM programmes. As a result, there has been an increase in the number of hospitals that have adopted TQM and there has also been an expansion in the number of areas that are affected by TQM in the hospitals that have already adopted it.

### Model of TQM Implementation

With a view to get insights into the implementation

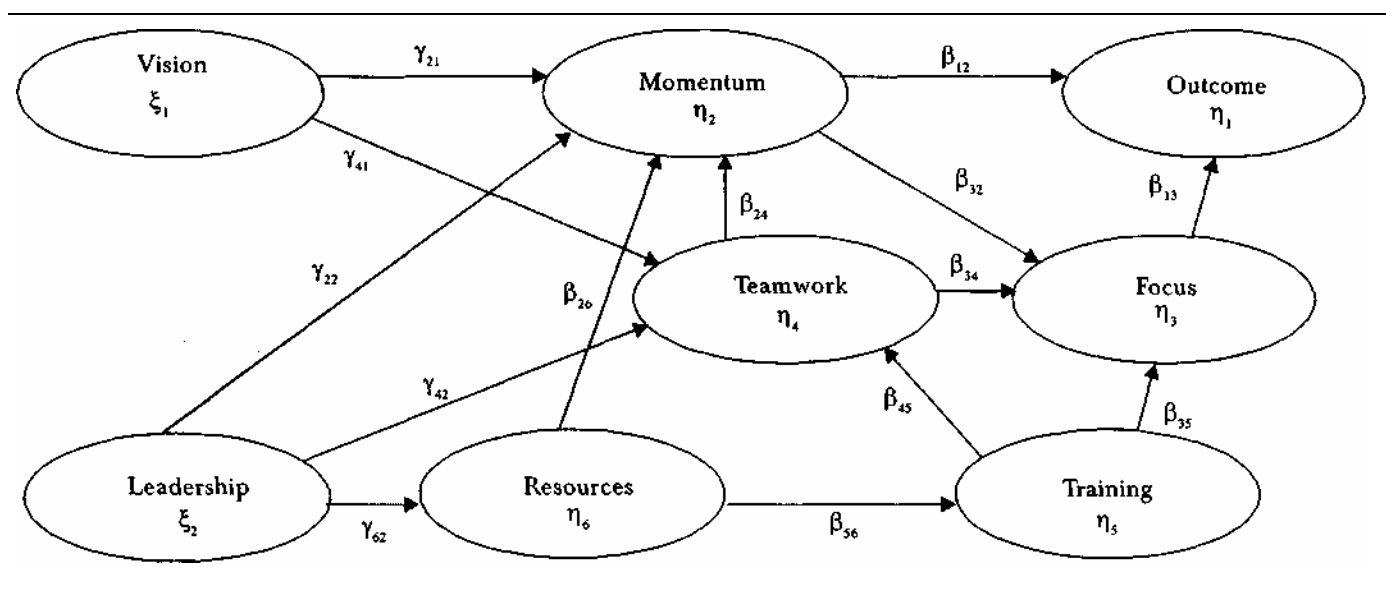
process, we studied two hospitals in a city in Ontario that were at different stages of TQM. The guidelines provided in the book *Quest for Quality in Canadian Health Care: Continuous Quality Improvement* by Health Canada (1993) was used as an initial framework to study the hospital processes. The exploratory study identified the various factors in implementation and the nature of relationship among them. Based on the study, we have developed a model linking the various factors. Figure 1 presents the model. The arrows in the figure indicate the causal relationships among the various factors.

The key factors are: vision of the organization and the place of TQM in it, leadership of senior management, quantum of resources allocated, training and development, and focus on core processes. The end results are seen in terms of momentum for implementation, improvement in quality of medical care, and financial performance. The hypothesized relationships among the various factors are discussed in the following paragraphs. Appendix 1 gives the definitions of the variables.

#### Vision

TQM in hospitals constitutes a shift in paradigm (Hassen, 1993). The hospital staff, particularly senior management, need to reframe their views about hospitals. In particular, it is important that TQM is not seen as an extension of the Quality Assurance System that normally exists in hospitals. Although

Figure 1: Proposed Model of TQM Implementation



both continuous improvement and quality assurance focus on quality, the latter is geared towards meeting some minimum criteria while the former is meant to continuously raise the benchmarks. In different words, quality assurance is static and continuous improvement is dynamic.

However, it is possible that this is not recognized in some hospitals and TQM is treated as an extension of the existing traditional paradigm. The extent to which the adoption of TQM is seen as a shift in paradigm will influence the way in which it is implemented. If TQM is not acknowledged as a large scale departure from the past practices and is implemented in incremental steps, primarily modifications to quality assurance programmes, then it is more likely to fail (Reger *et al.*, 1994). In other words, there is a need for the top management to articulate a vision for the hospital that provides a central place for TQM. If the vision is well communicated, it will help the change programme acquire a momentum that will sustain the implementation even if it runs into difficulties.

A good vision will also help teamwork during the implementation. Hospitals, particularly in Canada, are amongst the most fragmented organizations. Physicians are typically not employees of the organization—the hospital offers them the infrastructure to provide health services, for which they are directly paid by the government. Most often, physicians are affiliated with more than one hospital and also have their own clinics, and hence have very little attachment to any specific hospital. While the other professionals, e.g., nurses and paramedics, are typically employees of the hospital, the division of their work is so constrained by legal as well as professional control that inter-disciplinary interactions are quite minimal. There is a strong need for the management to provide a vision that encourages all concerned to overcome organizational and/or professional barriers to make the implementation of TQM successful.

**Hypothesis 1:** A clear TQM vision will have a positive influence on the momentum of the implementation process.

**Hypothesis 2:** A clear vision will have a positive impact on teamwork in the hospital.

### Leadership

Senior management leadership is crucial for the successful implementation of TQM (Health Canada, 1993). If members perceive that senior management is not serious about the change, then they are more

likely to avoid change. Providing good leadership means having close involvement in the implementation process to maintain momentum. If senior management's leadership during TQM implementation is clearly demonstrated, then it is more likely to be successful.

Management leadership will be evident in the allocation of resources to support TQM. More often than not, TQM is implemented in an environment when hospitals are already facing resource constraints in terms of money and manpower. In many cases, management was expected to create new resources for the programme even as some employees were being laid off because of budget deficits. Leadership means being able to explicitly provide resources, both financial and human, in the face of severe constraints.

Even if some members of senior management and other champions of TQM within the hospital recognize it as a significant departure from the past, it may not be successfully implemented because other powerful members of the organization, e.g., physicians, do not see it as such. In such situations, leadership means use of leverage to influence constituencies and manage their alignment to TQM to encourage teamwork.

**Hypothesis 3:** There will be a positive relationship between leadership and quantum of momentum of the implementation.

**Hypothesis 4:** There will be a positive relationship between leadership and resources provided.

**Hypothesis 5:** There will be a positive relationship between leadership and teamwork during implementation.

### Resources

As mentioned earlier, since most hospitals adopt TQM when they already lack resources, the allocation of resources, both money and trained people, to the TQM programme becomes a crucial decision. Low resource support will force middle managers to make hard choices. This is likely to hold up projects that can easily be implemented hurting the progress of TQM. If a hospital expects each of its units to implement TQM based on normal resources budgeted to it the implementation programme will suffer, which will hurt the overall momentum of the change programme.

Low budgetary allocation will also lead to little or no formal training on TQM related issues. It is quite normal for hospital staff not to have an

appreciation of the type of statistics required in TQM programmes. They need to be taught to design and implement improvement projects. In addition, hospital staff requires teamwork training to encourage teamwork. A shortage of resources will limit the amount of training that can be imparted.

**Hypothesis 6:** There will be a positive relationship between quantum of resources allocated and momentum of implementation.

**Hypothesis 7:** There will be a positive relationship between quantum of resources allocated and training-

### Momentum

It takes a long time for all people to accept TQM as a hospital philosophy and work towards making it a success. When all (or most) people have accepted TQM, the implementation process achieves a momentum that sustains the change process. Early results from pilot projects convince skeptics to participate in the implementation process. However, there is always a chance that a few projects that do not achieve expected results might cause a slow down in the change process. Once the momentum is lost, it becomes difficult to re-energize the hospital to participate in the change process again. When the implementation process loses its momentum, then the hospital starts tinkering with peripheral changes, such as improving catering or cleaning processes, rather than tackling the clinical process that directly contribute to outcomes, both medical and financial.

If the change programme has developed a momentum, it is likely to be able to overcome the hurdles in implementation, which are inevitable. The level of momentum will have direct impact on the desired outcomes.

**Hypothesis 8:** There will be a positive relationship between momentum and focus on core processes.

**Hypothesis 9:** There will be a positive relationship between momentum and outcomes of TQM efforts.

### Training

As indicated above, education and training programmes are needed throughout the implementation process. Since TQM will require staff to use process improvement and quality control tools that they may not be familiar with, they need to be provided such knowledge. This training will allow the hospital to focus on core medical processes rather than peripheral support processes.

Similarly, training in interpersonal relationships and team effectiveness skills are required. For the interdisciplinary teamwork appropriate for TQM, interpersonal and team skills are essential complements to knowledge of TQM tools. Education and training give staff the ability to work in teams. Therefore, an emphasis on education and training during the implementation process will improve the chances of successful teamwork.

**Hypothesis 10:** There will be a positive relationship between training efforts and focus on core processes.

**Hypothesis 11:** There will be a positive relationship between training efforts and teamwork.

### Teamwork

When a hospital implements TQM, the internal constituencies are challenged by a paradigm shift which questions cherished values and beliefs, and ways of operating and giving services. They are obliged to situate themselves within the new paradigm. They may resist change, buffer their interests from change, or actively translate the change in terms of their interests. If powerful constituencies are not accommodated, they may resist the new paradigm and make it unsuccessful. Since the medical constituency is the most powerful, it is critical that physicians be involved as early as possible. If senior management does not have people with medical credentials, doctors need to be represented on any steering committee that is assigned the task of guiding and implementing TQM. If members of the medical staff are not involved in planning the adoption of TQM, they are likely to oppose the change like any other uninvolved constituency, but, unlike, the others will probably succeed in preventing its implementation. Similarly, the middle management, which normally loses its traditional clout in the new environment, will need to be encouraged to work as a team.

If the concept of working as a team is well accepted, which means that the medical staff, nurses, and support staff accept the need to work together rather than remain in their professional silos, there is a greater chance that the hospital will be able to tackle problems in the core processes.

**Hypothesis 12:** There will be a positive relationship between composition of the team and momentum of implementation.

**Hypothesis 13:** There will be a positive relationship between teamwork and focus on core processes.

## Focus on Core Processes

It is essential that the TQM projects focus on improving core processes to gain real improvement in treatment, costs, and customer satisfaction. In several hospitals in which antecedents are not well managed, the projects continue to devote time on peripheral processes such as laundry and cleaning so the gains are not substantive. The core processes can only be improved if the change programme has momentum (based on vision, leadership, and resources), there is teamwork and everyone is participating in the process, and all concerned have the necessary technical training to tackle the core processes. A greater focus on core processes will result in greater improvements in desired outcomes.

**Hypothesis 14:** There will be a positive relationship between focus on core medical processes and outcome of TQM efforts.

## Outcome

At the end of a successful implementation, hospitals should be able to demonstrate improvement in quality of medical care and financial performance. Improvement in the quality of medical care includes improvement of treatment processes, improvements in parameters of well being of the patient, and patient (or consumer) satisfaction. Financial performance includes cost savings on specific processes and well as improvements in overall financial situation of the hospital. As indicated, this will be possible if TQM projects focus on core processes and the change programme has enough momentum to overcome some hard decisions that need to be made during the implementation.

## Examination of Relationships

With a view to examine the above-mentioned relationships empirically, we carried out a sample survey. A total of 574 questionnaires were mailed to the Chief of Medical Staff, member of senior management associated with the TQM programme, and the CQI Coordinator/Director of all general hospitals in Ontario, Canada, listed in the Guide to Canadian Health Care Facilities, 1995. We received 244 completed questionnaires, which is a response rate of 42.8 per cent. About half the respondents were from senior management and the Medical Staff and Quality Coordinator/Director contributed about one-fourth each. Of the 244 respondents, only 172, which is a little over 70 per cent, indicated that they had formal TQM programmes in their hospital, so only those questionnaires were used for this study (Box 1).

## Box 1: Questionnaire

The questionnaire consisted of 70 items. Ten items asked for background information of the hospital and its TQM programme. The remaining 60 items consisted of statements related to variables in the model to which the respondents indicated their agreement/disagreement on a 7-point scale. The variables and the items to measure them had been developed based on the exploratory study of TQM programmes in two hospitals.

## Measures

The questionnaire contained items on all the variables discussed in the model above. Subjects completed the questionnaire by responding to the items on a 7-point scale (7- strongly agree, 4-neither agree nor disagree, and 1 - strongly disagree). As a first step, a factor analysis with varimax rotation was performed to examine whether the items in the questionnaire loaded on to variables for which they were constructed. If an item did not load on to the intended variable or loaded on to two variables, it was dropped. This is in line with the scale refinement method adopted by Setton *et al.*, (1996) and Wayne *et al.*, (1997) for Linear Structural Relations (LISREL) analysis (Box 2). Table 1 shows the number of items, Cronbach alpha, means, standard deviations, and correlation of the measures used in the study.

## Box 2: LISREL Analysis

Linear Structural Relations (LISREL) is a general programme that is used for estimating structural equation models. Its most significant utilization is to test intricate path dependant relationships among variables, but subparts of the programme can be used to perform other tests. LISREL provides a variety of tests to assess the goodness of fit between the hypothesized model and acquired data, and suggests changes in the model that might improve the fit. It also indicates the slope and significance of each path so that each relationship in the model may be tested. A significant feature of the programme is that it has the ability to separate the theoretical concepts in the model from the observed indicators used to measure them, thus improving the quality of tests. Finally, it permits including prior information (from theory or earlier studies) into the model by allowing the researcher to fix or constrain certain parameters that the programme normally estimates in order to produce models that are consistent with real phenomena.

**Table 1: Number of Items, Cronbach Alpha, Means, Standard Deviations, and Correlation of Measures**

Measure	Items	<i>a</i>	Mean	SD	1	2	3	4	5	6	7	8
Vision	5	0.83	5.40	.01	-							
Leadership	4	0.80	5.52	.03	0.59***							
Resources	2	0.75	4.45	.38	0.52***	0.65***						
Momentum	6	0.79	3.97	.12	0.47***	0.45***	0.53***	-				
Training	5	0.85	4.66	.31	0.49***	0.61***	0.71***	0.47***	-0.49***			
Teamwork	3	0.80	6.13	.73	0.60***	0.45***	0.41***	0.39***	-			
Focus	2	0.70	4.83	.42	0.31***	0.21**	0.24***	0.36***	0.24**	0.33***	-	
Outcome	3	0.81	4.80	.21	0.49***	0.30***	0.42***	0.57***	0.39***	0.46***	0.46***	-

\*\*\* p< 0.001 \*\* p< 0.01 \* p< 0.05

### Analysis

As done by Setton *et al.*, (1996), scale scores were used as indicators of latent variables rather than individual items. Since LISREL has computing limitations that make it difficult to fit models with greater than 30 indicators (there were exactly 30 indicators after eliminating items), and there was a need to maintain a sample-size-to-parameter ratio of about 5 (we had a usable sample size of 172) to maintain parsimony, scale scores (summarized in Table 1) rather than individual items were used as indicators.

In order to reduce the number of parameters to be estimated by LISREL, certain parameters were fixed based on the data. Following Wayne *et al.*, (1997), the path from the latent variables to their indicators was set equal to the square root of their scale reliability. The error variances were set equal to the variance of the scale value multiplied by one minus reliability. The scale scores were used as input to LISREL.

### Results and Discussion

The fit indexes for the proposed model were a chi-square of 13.76 (p=0.391) with 13 degrees of freedom, a goodness of fit index of 0.979, and adjusted goodness of fit of 0.941 and a root mean square residual of 0.029. These results suggest that the fit between the proposed model and data was very significant. Figure 2 shows the structural coefficients determined by LISREL and the significance of the coefficients.

#### Vision and Momentum

There is a lowly significant (p<0.05) and small (0.317) relationship between vision and momentum. This means that, though a well-developed and communicated vision does have a positive influence on the momentum of the change process, it does not ensure that the implementation process will be able to

sustain itself on its own. There are other pieces of the puzzle that need to be in place to ensure that the change process achieves and sustains momentum.

#### Vision and Teamwork

There is a highly significant (p<0.001) and large (0.675) relationship between vision and teamwork. This suggests that a well-defined vision has a strong influence on the functioning of teams and is required to ensure that all people in the hospital work as a team.

#### Leadership and Momentum

There is an insignificant (p>0.05) and small (-0.332) but negative relationship between leadership and momentum. This suggests that, unlike vision, leadership does not have any impact on the momentum of the implementation programme. Ironically, the influence, to the extent it is there, is opposite of what was predicted. This is probably because of the unique nature of the hospital system in which all concerned are highly qualified professionals. They may accept a vision for change but may not appreciate regular interventions (or interference) from management as they go about implementing the changes.

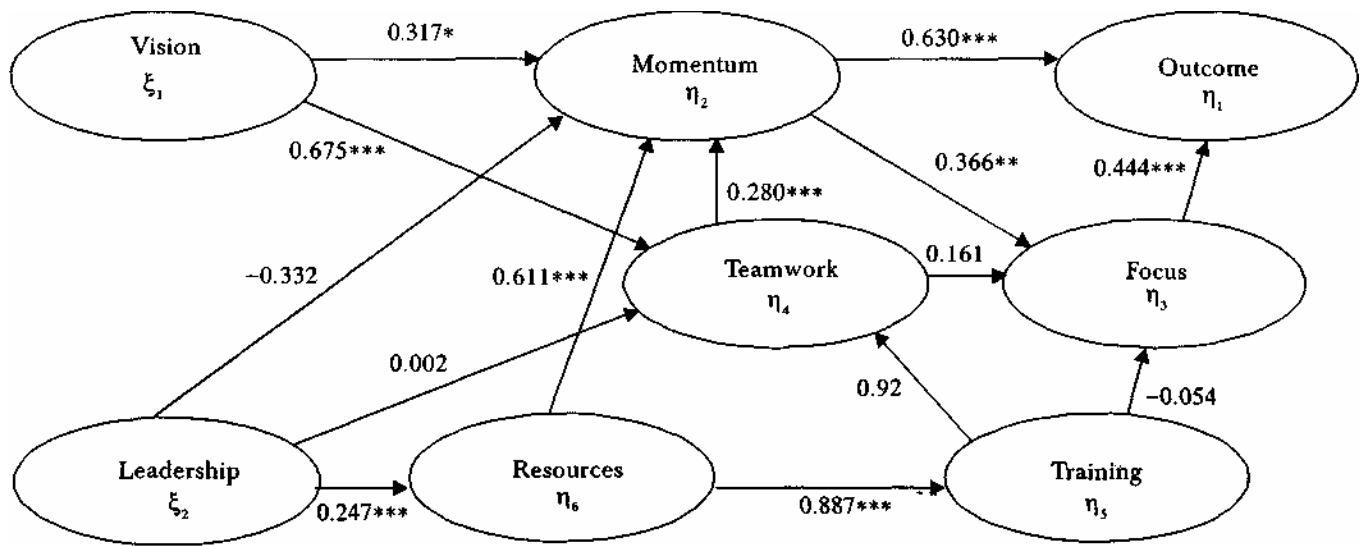
#### Leadership and Resources

There is a highly significant (p<0.001) but small (0.247) relationship between leadership and resources. This suggests that leadership is very essential to ensure that adequate resources are provided for the implementation of the TQM programme.

#### Leadership and Teamwork

There is an insignificant (p>0.05) and very small (0.002) relationship between leadership and teamwork. This suggests that direct senior management participation does not ensure good teamwork. A probable explanation for this is again based on the nature of the hospitals. Highly qualified professionals would like to be empowered to decide on the team

**Figure 2: Structural Coefficients of the Proposed TQM Implementation Model**



\*\*\* $p < 0.001$  \*\* $p < 0.001$  \* $p < 0.05$

and the nature of interactions they have, rather than be prodded by others.

### Resources and Momentum

The relationship between resources and momentum is very significant ( $p < 0.001$ ) and strong (0.611). This suggests that providing adequate resources is critical to maintaining momentum for change. The availability and hence ability to deploy monetary and human resources towards the change process contributes towards the impetus of the implementation.

### Resources and Training

The influence of resources on training is highly ( $p < 0.001$ ) significant and strong (0.887). The significance and strength of the relationship suggests that plentiful resources are absolutely essential for everyone to get the required amount of training for the change programme. In the absence of abundant resources, there is a tendency to neglect resources for training, which can have a drastic effect on the 'overall preparedness for change.

### Momentum and Focus

The relationship between momentum and focus is highly ( $p < 0.001$ ) significant but has a moderate (0.366) influence. This suggests that the greater the momentum for change, the greater the chances that core processes will be changed rather than peripheral processes. In other words, once the change programme has been initiated, it is important that the

change be maintained, despite hurdles in the way, in order to ensure that the TQM programme focuses on critical rather than marginal aspects of a hospital.

### Momentum and Outcome

The influence of momentum on outcome is very significant ( $p < 0.001$ ) and strong (0.630). This means that if the TQM change programme has been implemented without stoppages or slow downs in the process, there is a greater chance of obtaining expected gains in terms of quality of treatment, cost, and patient satisfaction.

### Training and Focus

Training has an insignificant ( $p > 0.05$ ) and small (-0.054) but negative relationship with focus. Both the level of significance and the size (including direction) of the relationship are not in line with the predictions based on literature and the earlier case studies. The prescriptive literature has focused much on the role of training to equip people with the requisite skills to identify potential for improvement, and then design and implement projects to meet the desired ends. It probably suggests that most hospitals have focused excessively on training on teamwork and interpersonal skills, rather than technical training that would equip them to tackle the real issues. Further study is required to separate the two types of training and understand their relationship with other variables.



### **Training and Teamwork**

Training has an insignificant ( $p > 0.05$ ) but large (0.92) influence on teamwork. Although the magnitude and direction of the influence is as predicted, the lack of significance of this relationship is also quite surprising. Once again, this may reflect a weakness of the study in not being able to separate the effect of interpersonal and team training from technical training. As suggested above, further study is required to understand this.

### **Teamwork and Momentum**

Teamwork has a very significant ( $p < 0.001$ ) but small (0.280) relationship with momentum. This suggests that when all members work as a team, it definitely has a positive effect on the momentum of the implementation process, although the actual contribution to the progress may be small.

### **Teamwork and Focus**

Teamwork has an insignificant ( $p > 0.05$ ) and small (0.161) relationship with focus. In other words, teamwork itself does not have much of a role in ensuring that TQM programme focuses on the core processes rather than peripheral processes. As suggested above, its effect is routed through the influence of momentum.

### **Focus and Outcome**

There is a very significant ( $p < 0.001$ ) and moderate (0.444) relationship between focus and outcome. This suggests that the greater the focus on core processes, the greater the chances that there will be noticeable improvements in desired outcomes.

### **Implications for Practice**

The results of this study suggest important implications for implementation of TQM. Although some of the findings are tentative, they provide useful insights on how to better implement TQM programmes.

### **Vision**

It is important that TQM should be seen as a new paradigm—a departure from the past. It is essential that senior management provide a vision that provides new direction to the organization that is compatible with the new paradigm for the programme to be successfully implemented. It is important that it not be treated as an extension of existing quality systems, and the strategic role of the programme be clearly communicated. This is particularly important in organizations with a large proportion

of professional employees, such as hospitals, higher educational organizations, R&D laboratories, and software firms.

### **Leadership**

The traditional literature suggests that hands-on leadership is very critical for the success of TQM implementation, with the leaders showing their earnestness for the change programme by actively participating in the changes. The finding suggests that, while it is important for management to champion the programme by allocating resources and encouraging teamwork, they should empower qualified professionals to sustain the change, rather than micro-manage the process. In other words, in organizations that have a large proportion of professional employees, the concept of leadership is different - it is much more in facilitating action than participating in the action.

### **Resources**

The allocations of monetary as well as human resources for TQM programmes are absolutely essential. Resources are central to the effectiveness of training and educational programmes that prepare the personnel for the change programme. The tendency to cut corners when it comes to spending money on training programmes and/or not deploy people on TQM projects as it cuts into normal operation should be curtailed. There has to be a way to ensure that adequate resources are available for the programme. This also maintains the momentum of change.

### **Teamwork**

As suggested earlier, teamwork is absolutely essential for TQM to succeed. Although teamwork does not seem to have a direct impact on focus, its influence on momentum is significant enough to suggest that efforts to encourage teamwork should be in place. Since most TQM projects require inter-disciplinary interaction, teamwork facilitates the successful implementation of the programme. It is not atypical for professionally staffed organizations to work in silos, so the need to promote teamwork becomes that much more important in such organizations.

### **Momentum**

The change programme has to develop a momentum that has to be sustained against all odds. Once a change programme is initiated, the ability to obtain desired goals is strongly linked to the ability to maintain the progress in the face of opposition, short-term reversals, and other unpredictable happenings.

A change programme that experiences periods of lull during implementation is unlikely to be able to achieve the desired results in terms of outcomes. Maintaining momentum is that more important in professional organizations because power is more evenly distributed across the organization, and any one group has the capability to scuttle the change process.

### **Training**

The current study was unable to separate the effect of interpersonal training from the influence of technical training. However, it is still suggested that both kinds of training are very necessary for the successful implementation of TQM. Such activities should not be seen as a waste of time — the actual training programmes need to be phased out so that people can bring their real experiences to the training situation and relate the concepts to actual problems.

### **Focus**

More often than not, when organizations experience difficulty with the TQM implementation, senior management is unable to make changes to core processes. They resort to bringing changes to peripheral processes to be able to claim progress in the programme, although the important changes are avoided. If organizations are serious about achieving desired outcomes, they cannot avoid making the tough decisions — they have to be able to overcome the difficulties, political or otherwise, to maintain focus on the core processes.

### **Outcome**

When implementing TQM programmes, the immediate outcomes that need to be monitored are operational level improvement, whether in terms of quality of output or cost savings, and not organizational level financial outcomes. There is always a lag in time before operational level improvements are reflected in organizational level measures. If proper measures are used and communicated, the implementation is more likely to be successful.

## **Conclusion**

The study reported in this paper tested a model of TQM implementation with data acquired from hospitals. The proposed model had significant fit with the data. The results suggest that the factors in the model provide a good explanation for changes in outcomes due to TQM implementation. Within limits, the model provides a useful basis to design a TQM implementation programme.

However, a few findings contradicted expectations. First, there is a negative relationship between leadership and momentum. While there is apparent contradiction, the finding is consistent with professional organizations, particularly hospitals. Professionals, particularly doctors, do not like to be micro-managed by others - they require the autonomy to pursue their work. It suggests a desire on the part of the hospital staff to be given a broad vision to pursue and be left to themselves to achieve the goals, without regular interventions by management.

Second, training does not seem to effect either teamwork or focus as expected. But earlier literature and interaction with people implementing TQM suggests that there is some problem with this finding. This is probably because this study could not separate the effects of team/interpersonal skill training from the influence of technical training, thus confounding the relationships. Further investigation is required to resolve the paradox.

Finally, further analysis is required to improve the quality of the findings. The LISREL model was simplified by using single indicators, fixing the measurement models and measurement errors. Some of these constraints can be freed in further analyses. Although the model had a significant fit with the data, several of the coefficients within the model were not very significant. This may be because the variables were quite highly correlated among themselves. There is a need to examine reasons for this and, if necessary, modify the model based on theory and modification indices suggested by LISREL to improve upon the model.

## Appendix 1: Definitions of the Variables

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<b>Vision:</b>	Vision refers to the extent to which senior management could articulate a mission for the hospital clarifying that TQM was a departure from the past paradigm, and provide a new direction to the hospital.
<b>Leadership:</b>	Leadership refers to the extent to which senior management played a visible role in championing the cause of TQM and involved themselves in the details of implementation.
<b>Momentum:</b>	Momentum is the degree of self-sustainability of the change programme based on the early successes in the implementation.
<b>Resources:</b>	Resources refer to budgetary and manpower support assigned to the TQM programme.
<b>Teamwork:</b>	Teamwork is the degree to which all professionals in the hospital work together in the implementation of the programme.
<b>Training:</b>	Training refers to the extent the organization emphasized the need for classroom-based conceptual and/or experiential learning relevant to the programme.
<b>Focus:</b>	Focus refers to the extent that the change programme was able to concentrate on making changes to the core processes rather than peripheral processes.
<b>Outcome:</b>	Outcome refers to both medical and financial outcomes that may be seen as desirable goals of a TQM programme.

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### References

- Anderson, J C; Rungtusanatham, M and Schroeder, R G (1994). "A Theory of Quality Management Underlying the Deming Management Method," *Academy of Management Review*, Vol 19, No 3, pp 472-509.
- Baker, G R; Barnsley, J and Murray, M (1993). "Continuous Quality Improvement in Canadian Health Care Organizations," *Leadership in Health*, Vol 2, No 5, pp 18-23.
- Dean Jr., J W, and Bowen, D E (1994). "Management Theory and Total Quality: Improving Research and Practice Through Theory Development," *Academy of Management Review*, Vol 19, No 3, pp 392-418.
- Hassen, P (1993). *Ex for Hospitals: New Hope for Medicare in the Nineties*, Stoddart Publishing.
- Health and Welfare Canada (1993). *An Inventory of Quality Initiatives in Canada*, Ministry of Supply and Services Canada.
- Health Canada (1993). *Quest for Quality in Canadian Health Care: Continuous Quality Improvement*, Ministry of Supply and Services Canada.
- Reeves, C A and Bednar, D A (1994). "Defining Quality: Alternatives and Implications," *Academy of Management Review*, Vol 19, No 3, pp 419-445.
- Reger, R K; Gustafson, L T; DeMarie, S M and Mullane, J V (1994). "Refraining the Organization: Why Implementing Total Quality is Easier Said Than Done," *Academy of Management Review*, Vol 19, No 3, pp 565-584.
- Setton, R P; Bennett, N and Liden, R C (1996). "Social Exchange in Organizations: Perceived Organizational Support, Leader-Member Exchange, and Employee Reciprocity," *Journal of Applied Psychology*, Vol 81, No 3, pp 219-227.
- Spencer, B A (1994). "Models of Organization and Total Quality Management: A Comparison and Critical Evaluation," *Academy of Management Review*, Vol 19, No 3, pp 446-471.
- Wayne, S J; Shore, L M and Liden, R C (1997). "Perceived Organizational Support and Leader-Member Exchange: A Social Exchange Perspective," *Academy of Management Journal*, Vol 40, No 1, pp 82-111.