

QA & I

Behavioral Tools for Behavioral Optometry



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Abstract

Total quality management (TQM) is a philosophy which organizations utilize to evaluate processes in order to improve the quality of products and services. TQM is the philosophical foundation of quality assessment and improvement (QA & I) programs. Although TQM originated in the manufacturing industry, it is now being applied in many other settings, including health care and optometric practice. Juran's model of the TQM process is divided into four stages: project definition and organization, the diagnostic journey, the remedial journey, and holding the gains.¹ This process is very similar to patient care in the behavioral optometric practice. Several behavioral concepts which were identified by Margach² are also inherent to TQM. These concepts are modifiability, the use of multiple modalities, and the emphasis on prevention. TQM offers the behavioral optometrists a philosophy for continually assessing and improving the efficiency of office procedures and employee satisfaction, as well as the quality of patient care.

Key Words

behavioral optometry, total quality management, quality assessment and improvement process, customer, indicators, benchmarking, process flow diagram, modifiability, prevention, teamwork

Soon after I became Director of the Learning Disabilities Unit at State University of New York, State College of Optometry (SUNY), I received notification of the upcoming monthly meeting of the Quality Assessment and Improvement Committee. I immediately put a copy of the agenda into a manila folder, labeled it "QA & I," and placed it on top of the papers mounting on my desk. That was the beginning of an ongoing journey into quality-oriented management and its application in a multidisciplinary behaviorally-oriented clinic. Just as QA & I is an open-ended process, so is my education. After six months, I've developed a conceptual framework of QA & I which I am able to apply to most administrative tasks and responsibilities. This paper is an attempt to crystallize my own understanding of the behavioral foundation of QA & I, and, extend its application to behavioral optometric practice.

Quality assessment and improvement is not a specific task or an end in itself. It is an ongoing process that must evolve in order to reflect the constantly changing parameters of modern health care and the unique needs of an individual practice. The only commonality between various quality assessment programs is their underlying philosophy—total quality management.

Total Quality Management

Total quality management (TQM) was introduced in the 1930s. Deming³ ob-

served that defects in the quality of manufactured goods were rarely caused by individuals, but rather by the processes and systems of production. Even when defects were attributed to employees, usually the root cause was poor job design, overly complex processes, poor training, or unclear purpose. Deming's philosophy focuses on the processes that drive the individuals. Rather than accusing workers of incompetence, a manager's job is to involve all employees in efforts to assess the problems (quality assessment) and improve the system (quality improvement), which ultimately improve the quality of the products. The translation of quality improvement into revenues is described by Deming's chain reaction. With each improvement in processes and systems, productivity increases and better products are created. Market share increases and revenues rise.

Crosby illustrates the benefits of quality improvement by focusing on the costs of poor quality.⁴ Companies without TQM programs often spend large percentages of their revenues on maintaining quality. *Appraisal costs* are incurred by inspection of products and services to determine if they meet requirements. *Failure costs* are the result of waste, rework, and corrective actions. On the other hand, companies with TQM programs emphasize *prevention costs* to simplify processes and ensure the process is initially done correctly. Appraisal and failure costs are significantly reduced.

Although this approach was originally applied to manufacturing, its utilization need not be restricted. Berwick and associates point out that it can be applied to the production of any kinds of goods and services in any organization, large or small.⁵

Some key concepts have evolved and are now being applied in various health care settings.⁶ (p.27)

1. Quality improvement is driven by leaders of the organization.
2. Customer orientation permeates the organization.
3. A transition from inspection-based management to process improvement then occurs.
4. Formal process improvement methods and statistical tools are used.
5. All employees are involved in the exploration of processes.

TQM and Health care

Health-care organizations began to implement TQM concepts 10 years ago with some astonishing results. The Harvard Medical Practice Study found that "system problems" caused 72% of adverse events, compared to 28% caused by substandard medical care.⁷ Experts in industrial quality assessment who served as consultants to health care organizations reported that "Health care is just as riddled with operational quality defects as any other industry."⁸ One study estimated that quality improvement initiatives could save \$200 billion annually, or 28% of our nation's health-care expenditures.⁹

In 1992, the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) began to rewrite its accreditation standards for ambulatory care in order to give more emphasis to quality assessment and improvement. The JCAHO describes its accreditation system in one word: performance.⁶ Health-care organizations must demonstrate the capacity to deliver high quality care AND improve all aspects of performance over time. The 1994 Accreditation Manual for Ambulatory Care⁶ includes an entire chapter which delineates requirements for an organization's leaders to develop, implement, and assess quality improvement programs.

TQM and Optometry

In 1993 the Board of Trustees of the American Optometric Association established the Commission on Quality Assurance and Improvement (CmQAI). The

mission of the CmQAI was "to encourage the implementation of clinical practice guidelines and to help improve the quality, effectiveness and uniformity of patient care provided by licensed optometrists." The CmQAI manual¹⁰ is a guide for the development of a quality assessment and improvement program in the optometric office. Self-assessments, sample formats, resources, guidelines and references are provided for five components of quality assessment and improvement programs: credentialing and privileging, documentation and record review, patient satisfaction, risk management, and utilization management.

The Total Quality Education (TQE) Grant Program was established by CIBA Vision in conjunction with the Association of Schools and Colleges of Optometry. TQE grants provide financial resources for optometry schools to incorporate TQM principles into the processes of optometric education. A recent issue of *Optometric Education* highlighted TQE projects.¹¹ For example, a clinical preceptor conference at the New England College of Optometry brought together clinical faculty from external sites to discuss the enhancement of students' problem solving skills in the clinic. The project sought to improve the clinical teaching skills of faculty members, thereby improving the clinical education of students. Outcomes were measured by faculty evaluation of the conference and by comparison of student evaluations of faculty before and after attending the conference.

The Department of Veterans' Affairs (VA) began utilizing TQM principles in 1992. Newcomb identified several clinical indicators which are applicable to patient care in the private sector as well as in VA Medical Centers.¹² For example, a quality indicator for glaucoma patients is obtaining threshold visual fields every year, and a quality indicator for the legally blind is assuring a low vision evaluation.

TQM and the Private Practitioner

Some optometric clinics (e.g., those in the VA or other hospital-based programs) are required to implement QA & I programs by the JCAHO. Some private practitioners have similar requirements which are being imposed by managed care plans. Many behavioral optometrists, however, have decided to function outside of managed care in order to offer their patients

full-scope services. Therefore, private practitioners, especially behavioral optometrists, have been much slower to embrace TQM. They conceptualize QA & I as applicable to only a limited number of office functions. Doctors with successful practices without a TQM framework are reluctant to consider change. However, in a world of rapid change, strategic planning is necessary. Gaucher and Coffey discuss the need for a paradigm shift. "The way you saw events and acted in the past may have been a successful paradigm at that time, but will it be the right model for the future?"¹³ (p.37)

TQM offers the private practitioner a philosophy for managing all aspects of optometric practice and the flexibility to adapt to the evolving health-care market. What follows is a plan for the private practitioner who wishes to begin to utilize TQM principles in his or her office.

IMPLEMENTING TOTAL QUALITY MANAGEMENT

Quality improvement requires a willingness to change, which must begin with leadership. It cannot be delegated to office staff or managers. Leaders of the organization must first gain knowledge of TQM by reading, attending seminars, and visiting other organizations which have quality improvement programs in place. As leaders become more familiar with TQM concepts, they must be willing to commit the time and money required to continually teach new skills to all members of the organization. Finally, they must serve as role models and facilitators as quality improvement initiatives are implemented. Many pioneers of TQM in health care noted that once these principles were introduced, their utilization began to spread through various levels of the organization.⁵ However, the most effective TQM programs are integrated into the organization's overall philosophy and strategic planning.

TQM begins with a shift toward a customer-oriented paradigm. A customer is anyone who is affected by office processes. In addition to patients, customers might include patients' families, consulting professionals, optical laboratories, insurance companies, and colleagues. There are "external" and "internal" customers. External customers are the patients, third party payers, and referral sources. Internal customers include office staff and consult-

ing health-care professionals. Every customer has different requirements and expectations. For example, consider the case of a patient requiring a psychological consultation. The optometric office staff needs certain information to facilitate that referral, the psychologist will require a report, and the insurance company expects completion of appropriate forms. The quality of the service received by the patient (the external customer) is dependent upon the quality of the internal customer-supplier relationships.

Although many models of quality improvement exist, they all describe a similar process. Teams of employees consider customer needs, identify and prioritize problems, evaluate the relevant processes, develop plans to improve the process, and measure the outcomes after implementation. I have chosen Juran's model to describe how TQM may be applied to behavioral optometric practice. Juran's model is divided into four sequential phrases: project definition and organization, the diagnostic journey, the remedial journey, and holding the gains (see Table 1).

Project Definition and Organization

Project definition begins by querying customers about their needs and expectations and clarifying customer-supplier relationships in order to identify opportunities for improvement. For example, in the Learning Disabilities Unit, patients require timely reports from providers, providers expect medical records to be made readily available by staff, and referral sources need specific information from staff. If customer requirements are not being met, then each of these needs requires a team of employees to begin the diagnostic journey.

Teamwork is essential to the TQM process. In order to understand an entire process which has been identified as problematic, input should be sought from employees at various hierarchical levels. Each team member "contributes his or her unique knowledge of the process being examined."⁶(p.33) When policies and procedures are created by managers who are uninvolved in day-to-day operations, the result is often inefficiency, conflict, and ultimately poor quality. As these problems emerge as "indicators" in the QA & I process, solutions should be sought from

Generic Steps in Problem Solving

PROJECT DEFINITION AND ORGANIZATION	1. List and prioritize problems 2. Define project and team
DIAGNOSTIC JOURNEY	3. Analyze symptoms 4. Formulate theories of causes 5. Test theories 6. Identify root causes
REMEDIAL JOURNEY	7. Consider alternative solutions 8. Design solutions and controls 9. Address resistance to change 10. Implement solutions and controls
HOLDING THE GAINS	11. Check performance 12. Monitor control system

Table 1. Steps in the Quality Improvement Process. (Reprinted with permission from the Juran Institute, Inc.)

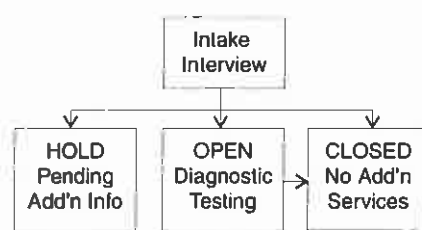


Figure 1. The "Old" Process. Placement of cases on "hold" was a dead end in the process. There were no procedures for follow-up to determine if additional services were indicated.

the employees who will be asked to implement them. By allowing employees to have greater control over their work environment, a "quality snowball effect" is created. Employee teams encourage comprehensive views of the processes, more effective solutions, higher quality, and enhanced employee satisfaction. The team "whole" is greater than the sum of its parts.

The Diagnostic Journey

The foundation of the diagnostic journey is the collection of information in order to identify flaws in the office processes. The appropriate diagnostic instruments are used to collect, display, and analyze information. The most fundamental tool in the QA & I toolbox is the process flow diagram, which is a graphic representation of the sequence of steps in a process.¹⁴ The development of the process flow diagram fosters realization that underlying even the most convoluted chaotic collection of steps there is a process, and at each step in the process there is a customer and a supplier.

Within the Learning Disabilities Unit, patients would occasionally be placed in a state of limbo when additional informa-

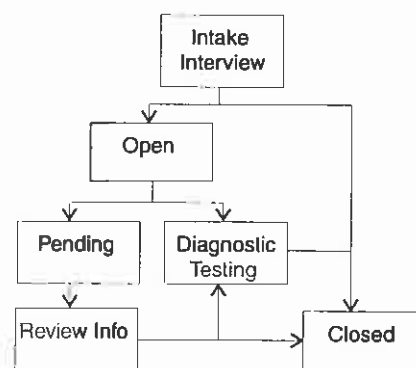


Figure 1a. The "New" Process. At the intake, all cases are classified as either open or closed. Every open case has a case manager who is responsible for all follow-up until the case is closed.

tion was requested from other sources. A process flow diagram was constructed which identified a dead end in the process (see Figure 1). The solution was the development of a case management system to follow all open cases, and classifying all "pending" files as open (see Figure 1a). The result was a decrease in the number of patients "falling between the cracks."

Rather than increasing the amount or types of data collected, the diagnostic journey should utilize existing data sources. The process of quality improvement would not be effective if it created additional layers of paperwork for staff. The additional time commitment is better spent on team analysis of data and determining the root causes of problems. Some examples of data that are collected and analyzed as part of QA & I efforts in the Learning Disabilities Unit include number of patients who do not keep appointments, length of time required to complete re-

ports, number of patient records which cannot be located, and number of therapy sessions patients receive for various diagnoses.

The Remedial Journey

Once the root causes of flaws in the process have been identified, the remedial journey may begin. There are three steps in the remedial journey:⁵(p.109)

1. Developing the remedy
2. Implementing and testing the remedy
3. Dealing with resistance to change

The remedy chosen should be selected after considering several options. The various team members who provide different perspectives of the process will likewise provide a wide spectrum of solutions. The team should consider the cost/benefit ratio of each potential solution as well as the time frame required for its implementation. Remedies are not always characterized by "more": more money, more staff, or more equipment. A remedy may involve reallocating resources such as staff responsibilities, changing forms, redesigning office processors, or enhancing communication channels.

Once a remedy is selected and enacted, activities must be closely monitored to ensure that the initial problem is solved and no new problems arise. For example, a satellite medical records department was created in the Vision Therapy Service and the Learning Disabilities Unit to reduce the number of missing charts. The initial problem was resolved; however, many charts were being improperly filed by doctors who were not familiar with the numerical filing system. This new problem had not been anticipated. At a follow-up team meeting, the staff felt strongly that it would be easier for them to maintain the medical records than to train all the doctors in proper procedures. The doctors were glad to allow staff to manage all charts as long as they had them available as needed.

Resistance to change can be minimized by heterogeneous teams. Remedies should be developed by employees empowered to improve the quality of their working lives and by managers with the authority to place them into action. Successful quality improvement teams also deal with resistance to change by anticipating its source. If major streamlining of processes eliminates someone's job, be prepared to discuss his or her options. If

the remedy involves changes in processes performed by a large number of personnel, consider piloting a small scale implementation. A more limited but successful remedy can be the key to overcoming inertia and demonstrating the need for change to others.

Holding the Gains

Unfortunately, processes tend to regress toward "pre-QA & I" levels of performance unless activities are initiated to "hold the gains." Remedies that are process-oriented have a stronger tendency to regress than technical remedies. For example, establishing a satellite medical records department within the Vision Therapy Service and the Learning Disabilities Unit is a "technical" remedy. The procedures for locating and maintaining medical records have not been altered. They are merely being performed in a different location. Once the remedy was in place, measurements indicated a large improvement in performance which was maintained with no additional intervention. On the other hand, creating a case-manager system to track all open cases established new processes, realigned some existing procedures, and impacted numerous personnel. Measurements indicated an initial improvement in performance followed by a decrease. A review by the quality team indicated significant resistance to change and suggested some refinements to the process, which are under consideration.

The one step in the quality improvement process which is not included in Juran's model¹ is the celebration. Rewarding project members for their success encourages employees at all levels to actively participate in future efforts. A celebration can also serve as a means to broaden the scope of quality improvement activities within an organization. The greater the visibility of quality improvement programs, the greater the likelihood that quality improvement will become an integral part of the daily work of all employees.

IMPROVING THE QUALITY IMPROVEMENT PROCESS

Total quality management does not occur overnight. It is an evolving process. As a process, the TQM program itself should be subjected to the same QA & I initiatives as any other office process. A TQM audit

is vital to track progress in putting TQM principles into practice.

In 1987, Congress established the Malcolm Baldrige National Quality Award to recognize companies achieving quality improvements. Most health-care organizations are not eligible to receive the award because of their not-for-profit status. However, the award guidelines provide an outstanding framework for organizations to perform a self-assessment of their TQM efforts. Gaucher and Coffey¹³(p.559-69) have adapted these guidelines for use by health-care organizations. The core values of TQM are represented by seven distinct criteria, which are weighed to reflect their contribution to the quality improvement process. For each of these criteria there is a rating scale to judge the level of achievement in implementing TQM principles (see Table 2). A scoring system based on a maximum of 1,000 points evaluates performance for each criteria as well as overall performance. Companies that have won the Baldrige Award typically score between 700 and 800 points. This self-assessment tool can provide a profile of the strengths and weaknesses of a TQM program and direction for its continuing evolution.

Benchmarking is another strategy that can advance a quality improvement program. It is the process of measuring a characteristic of the organization by comparing it to another organization known for its high quality.¹³ Benchmarking can help to improve processes and outcomes by exploring strategies which have established "track records." Benchmarking can be a very formal process requiring a significant investment of resources, or it can be informal. At our monthly meetings of the QA & I committee, the various clinical services deliver their quarterly reports. Remedies that were being implemented in other clinics were often the starting point for improvement initiatives within the Learning Disabilities Unit.

Behavioral Concepts and TQM

The analogy between Juran's model¹ of the quality improvement process and behavioral optometric practice is striking. Every patient seeking behavioral optometric care invokes the same problem-solving sequence. Thus, Juran's model enables the practitioner to implement a quality improvement program by providing a framework that is familiar and comfortable.

Criteria and Weight (Percent)	Rank		
	10	5	1
1. Leadership/9.5	Quality is the number one priority of the leadership team of the organization and department.	Rewards and recognition reinforce the quality improvement process.	Organizational and departmental mission, values, vision are developed and shared broadly with all employees.
2. Information and Analysis/7.5	Expert systems actively support quality by planning and design and achieve on-line prevention of problems.	Processes are in place to ensure reliability, consistency, standardization, timely update, and rapid access throughout the organization.	Data are available on operations, processes, employee factors such as safety, morale, and customer satisfaction.
3. Strategic Quality Planning/6	Quality improvement plans are totally integrated into long-term and short-term planning processes.	Every department has a written quality plan including a mission statement and a goal attainment plan.	Critical processes have been identified and flowcharted.
4. Human Resource Development and Management/15	You are viewed as the employer of choice.	Training programs are based on needs assessment of employees and managers. They are linked to long-term and short-term goals of problem solving, waste reduction, and process simplification.	Employee indicators reflect the success of empowerment and employee involvement methods.
5. Management of Process Quality/14	Superior clinical outcomes are achieved and utilized to define quality for payer groups. Your organization is a benchmark for others.	Processes are in place to assure quality of all processes and services. Audits occur to check the quality system.	Tools and techniques of quality are utilized for quality assurance and to meet JCAHO requirements.
6. Quality and Operational Results/18	You are deemed the provider of choice by your customers and suppliers. Other health-care organizations use your processes as benchmarks.	Supplier quality indicators are developed.	Institutional customer groups have been identified, valid requirements established, and indicators developed to measure product and service quality.
7. Customer Satisfaction/30	Customer surveys and the general public indicate best-in-class results compared to other quality institutions.	Customer input is utilized to improve processes and develop new products.	Methods for determining current and near-term customer requirements are defined and measures are developed to track performance.

Table 2. Self-Assessment Tool for Health-Care Organizations Based on the Baldrige Criteria.

The correlates of TQM and behavioral optometry do not begin and end with Juran's model. Gaucher and Coffey describe TQM as a "combination of philosophy, knowledge, and skills ... uniquely effective in accomplishing major organizational change through improvements in quality, cost effectiveness and human relations."¹³(p.26) Behavioral optometry might be defined as a "combination of philosophy, knowledge, and skills uniquely effective in accomplishing major change in vision through improvements in quality, efficiency and human relations."

Margach² identified several concepts which distinguish functional from structural optometry. Several of these principles are inherent in the philosophy of TQM: modifiability, the use of multiple modalities, and the emphasis on prevention.

"Modifiability" is the central concept which distinguishes functional from structural optometry. For the functional/behaviorally-oriented optometrist, refractive condition is viewed as a behavior. It can be changed, given the appropriate environmental manipulation. In fact, failure to

effect the changes sought are presumed to result from the application of inappropriate procedures. The basic premise that behavior can be modified is unrefuted. Both behavioral optometry and TQM are practiced from the viewpoint that "function determines structure," and therefore changes in structure will follow modifications in function. Within the Vision Therapy Service and the Learning Disabilities Unit, locating patient records which are often needed once or twice per week was problematic. Several attempts at facilitating the process were directed at modifying

procedures without changing the existing structures of either clinical service or the Medical Records Department. All failed. Finally, the "satellite" Medical Records Department was established within the Vision Therapy Service and Learning Disabilities Unit. Once the structure was modified, based on the required function, the number of missing charts and the amount of time spent searching for them decreased dramatically.

Behavioral optometrists use a team approach to create change, not only by enlisting other professionals in patient management, but also by creating multi-modal therapy programs. Margach states, "The broader the base of behavior that can be woven into rehabilitative and habitative regimens, the more thoroughly learned will be the improved performance."² Likewise, the broader the base of perspectives that can be woven into the quality improvement process, the more durable will be the improved performance. From a broader perspective, TQM can be viewed as the result of the teaming of several key concepts, just as vision is the emergent of Skeffington's Four Circles.^{15,16} When all the concepts are applied to daily work routines in an orchestrated balance, the outcome is improvements in quality.

My first attempts at QA & I initiatives were not as successful as I had hoped, largely because I had omitted one of the key concepts from the multi-modal team: education. None of the staff had received any training or exposure to the TQM philosophy and its potential application in a health-care setting. When remedies were implemented, they were perceived as unilateral decisions rather than comprehensive solutions. Once problems and remedies were presented from a customer-oriented paradigm at monthly QA & I meetings, performance measures showed more marked improvements.

Prevention of vision problems is a goal of the patient care processes of behavioral optometry. At the first signs of susceptibility to visual maladaptation, our patients are offered and encouraged to accept preventive measures, which are directed at the root cause of the visual problem instead of the overlying symptoms.² The environmental stressors which cause the visual maladaptation rarely recede, and prevention often becomes maintenance. Preventive measures are kept in place and the

patient is encouraged to return to the optometrist regularly to monitor visual status.

Prevention is one of Crosby's Absolutes for Quality Management.⁴ The quality improvement process prevents mistakes by identifying their root causes and applying remedies directly to the processes. Prevention is far more effective at improving quality than "after-the-fact" methods, such as inspection, just as treating the root cause of the problem is more effective than treating the symptoms. Crosby uses the standard of "zero defects" or error-free work as the goal of quality improvement programs.^{4,17} In order to achieve this standard, maintenance or "holding the gains" is essential.

The multidisciplinary management of the learning disabled, although intended to offer a more comprehensive view of the patient, can cause disorganized and fragmented treatment plans. Within the Learning Disabilities Unit, providers would often spend significant amounts of time collecting information and coordinating various treatments. Occasionally, patients were inappropriately scheduled due to these difficulties in coordination of patient services. Prevention of these scheduling errors became one of the goals of the QA & I team. The team realized that communication was hampered by the large percentage of part-time faculty. The psychologist performing the assessment works on Monday and Wednesday, but the optometrist treating the vision problem is available only on Tuesday and Friday. This could not be changed. Therefore, the team began to apply the standard of "zero defects" to several processes centered around the medical record in order to enhance communication between providers. For example:

1. Every referral to another clinical service will use a consultation form.
2. Every diagnostic evaluation will include a report, which will be placed in the medical record within two weeks of the service.
3. All telephone conversations with parents and other professionals will be documented in progress notes.
4. The medical record will be made available for every patient encounter and as needed.

As these preventive measures were applied to the process of maintaining medical records, the number of scheduling

changes began to decrease. The QA & I team is now focusing on methods to measure the enhancement of multidisciplinary care and "holding the gains."

Conclusions

After the first meeting of the QA & I Committee that I attended, I was told to write a yearly QA & I plan for the Learning Disabilities Unit which delineated the clinical indicators I would be evaluating. My first perception of QA & I was thus totally devoid of TQM concepts; it was merely another task I had to find the time to accomplish. Six months later I had learned enough to realize that QA & I is not something you do; it is a frame of mind. It is a management philosophy that percolates through your entire organization. Over the past few months I have focused on educating the staff of the Learning Disabilities Unit and evaluating the internal customer-supplier relationships which form the backbone of quality patient care.

My first set of clinical indicators focused on administrative and system issues such as medical records, written reports, and defining responsibilities for case management. As I became more comfortable with TQM concepts and tools, I began to see the relationships between these indicators and the quality of patient care. Multidisciplinary evaluation and management will become the clinical indicator in the next QA & I plan and measurements revolving around these administrative issues will serve as the window to view the quality of patient care. The road to quality care begins long before the health-care provider meets the patient.

The most difficult part of my journey was making the first step. I was not provided with any manuals, templates, or even a beginner's text. I learned by doing and "benchmarking" or modeling what was being done in other services. I have had success and failure and I have learned from both. I realize now that my journey into total quality management and its applications in the Learning Disabilities Unit was facilitated by my behavioral orientation to patient care. My patients became the various processes within the Learning Disabilities Unit but the concepts were unchanged.

I hope this article can serve as a guide for the first step into Total Quality Management. Many would argue that "TQM is

a matter of survival for health-care organizations."¹³ (p.556) If this is true, then I will survive.

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