

## PRACTICE FORUM

# Use of the total quality process in an infection control program: A surprising customer-needs assessment

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The University of Michigan Hospitals began a quality management and improvement process in 1987 as the framework for all of its quality-related efforts and activities. The Infection Control Services department used total quality techniques to develop its mission statement, identify customers, identify customer requirements, and develop quality improvement objectives to meet the requirements. A service evaluation of customers resulted in specific improvement activities. An unexpected result of this evaluation was the difference noted between the Infection Control Services staff members' perception of customer requirements and these customers' actual needs. ICPs should use the continuous quality improvement tools and techniques to enhance their activities within their institutions, to better meet their customer needs, and to make sure that they are complementing their institution's mission. (AJIC AM J INFECT CONTROL 1993;21:155-9)

Most staff members in hospitals are familiar with the quality control and improvement processes originating in the works of individuals such as W. Edwards Deming.<sup>1,2</sup> This approach to quality improvement is known by various names, e.g., continuous quality improvement, total quality management, etc. Such a system was adopted by the University of Michigan Hospitals (UMH) in 1987 under the name *total quality process* (TQP).

The TQP is a course of management that forms the framework for all UMH quality-related efforts, activities, and relationships. It is a philosophy and attitude, as well as a specific methodology with techniques for process evaluation and control. TQP concepts emphasize identifying and meeting valid customer requirements and practicing prevention and self-correction. The process is a

systematic and data-oriented approach to solving problems with a long-term commitment to continuous improvement that results in lasting solutions.

Goals for the TQP include the following:

- Improve quality of all products and services.
- Improve customer satisfaction.
- Improve the working environment.
- Improve cost-effectiveness.
- Improve the institution's competitive position.

The TQP at the UMH began with a training program for managers. Training consisted of five workshops. These workshops addressed TQP concepts, principles, structure, process, tools, and techniques, along with team leader training. This training allowed managers to begin the development of quality improvement teams (QITs) within their areas.

The first step in the TQP for each department or operating unit was to develop a mission statement to define the common purpose, focus, and context for all departmental activities. A service evaluation of the department could then be performed. This evaluation consisted of the following activities:

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1. Identification of customers.
2. Identification of customer requirements.
3. Identification of significant barriers to meeting customer requirements.
4. Development of quality improvement goals to address the barriers.

### **INFECTION CONTROL SERVICES DEPARTMENT**

The Infection Control Services department (ICS) is an administrative department at the University of Michigan Medical Center (UMMC). There are six staff members: a manager, four staff specialists, and a medical secretary. The manager is accountable to an administrator and a medical director (the hospital epidemiologist).

ICS staff provide support for the infection control committee (ICC), covering all seven entities of the UMMC: University Hospital (adult medical-surgical), Mott Children's Hospital, Holden Perinatal Hospital, Women's Hospital, Adult Psychiatric Hospital, Child and Adolescent Psychiatric Hospital, and the Kellogg Eye Center. In addition, there is a large ambulatory care system. Activities include surveillance, outbreak investigation, policy and procedure development and review, and education.

The primary method of communication for infection control activities is performed through infection control liaisons. Liaisons are designated individuals in each hospital department and patient care area. They are responsible for revising and updating their infection control manual, informing their area staff of changes in infection control policies, posting the *UMMC Infection Control Newsletter*, and performing liaison activities with ICS staff.

The six staff members in ICS became a functional QIT in December 1989. The overall purpose of the team was to identify methods to improve services. Initial goals were to develop a mission statement, identify customers, identify each type of customer's requirements, and develop quality improvement objectives to address problems in meeting the requirements.

### **MISSION STATEMENT**

Mission statements enable groups to set boundaries on their activities, know what is and is not within their jurisdiction, and understand where they fit in the organization's overall improvement efforts.<sup>3</sup> Once employees know the hospital's mission and understand how the institution defines quality, they can then begin to make improvements.<sup>4</sup>

The mission statement for ICS was written to correspond with the UMH mission and values

statement. This statement declares, "The University of Michigan Hospitals exist to meet the University's objectives in education, research and service. This mission is accomplished through people and knowledge, our most important resources. In the continuing pursuit of total quality, we are guided by the following values: respect, compassion, integrity, efficiency and excellence." The QIT reviewed this document and then brainstormed regarding the goals of ICS to develop the following departmental mission statement:

Infection Control Services' highest goal is to ensure that the clinical community has the information to protect patients and personnel from adverse events. The department provides expertise in the epidemiological method through education, research, consultation, surveillance and investigation of disease clusters, environmental laboratory services, quality improvement and policy formation. These services exist to meet the needs of all persons associated with the UMH, particularly the patient, for the prevention of infectious complications. The department is a responsible and contributing member of its hospital community.

### **CUSTOMERS**

Garfield<sup>5</sup> notes that a customer is anyone to whom you provide service. With this concept as a basis we used brainstorming techniques to determine what services we provided and to whom.

We decided to separate our customers into those internal to the UMH and those external to the institution. Our internal customers were determined to be the hospital employees, including physicians, nurses, and ancillary and support staff. Our external customers were defined as patients, family and significant others of patients, visitors, regulatory agencies, other ICPs, and the public.

The reason for distinguishing between external and internal customers is based on the degree to which one can influence and negotiate these customers' requirements. With internal customers, one is usually able to negotiate changes in requirements if those requested are unrealistic. This is not ordinarily the case with external customers.<sup>6</sup>

### **CUSTOMER REQUIREMENTS**

Our service evaluation was structured to collect reliable information regarding what customers need and want (current and desired requirements) from our service and products. The purpose was to identify potential improvement projects and also to clarify our goals.

Deming states that the cycle for continuous improvement is *plan, do, check, act* (PDCA).<sup>1</sup> The PDCA cycle was originally introduced by Walter Shewhart.<sup>2</sup> PDCA is a work philosophy that

**Table 1.** ICS customer survey—ICC members

Perceived customer requirements	Actual requirements of customer	Improvements
Report on surveillance activities	Same	Developed summary sheet
Provide a monthly report	Same	Added graphs, changed format of report
Review infection control policies	Same	Changed policy review system
Not mentioned	Orient new members	Orientation packet developed, new members introduced
Not mentioned	Communicate with committee members	Newsletter distributed

emphasizes four phases of activities: *Plan* what improvements and data collection to accomplish. *Do it.* *Check* what you did through measurement, and evaluate lessons learned. *Act* to improve the process and continue improvements. PDCA closely mirrors the nursing process of assessment, planning, implementation, and evaluation, but is applied to a system or process rather than to an individual patient.<sup>4</sup> The Deming cycle assists in determining the desires, both conscious and subconscious, of the customers and in devising services that will meet those needs.<sup>7</sup> We used this to determine our customer requirements.

### Plan

The first step for the ICS QIT was planning how to gather the information. We needed to decide which customers we would approach and what types of information we wanted. In addition, we needed to decide how to obtain the information. Personal meetings and telephone conversations allow two-way discussions; however, survey questionnaires are useful in quantifying customer perceptions.<sup>6</sup>

We decided that a determination of customer requirements would be made through a telephone survey process. Two simple questions would be asked: (1) What activities do you believe are performed by infection control staff? (2) What would you like ICS to do for you in your professional setting? Time was allotted to allow the customers to talk about their concerns. Although the telephone interview was loosely structured, we did want to use this process to try to address the following questions, as outlined by Scholtes<sup>3</sup>: Are we doing the right things? Are we satisfying our customers? Are customers getting exactly the products or services they need, precisely when and how they need them?

### Do

Each ICS staff member telephoned one person representing each of the following areas: medical staff, direct-care health care workers, facilities services (architects, engineers), infection control

liaisons, ICC members, clinical administration, hospital administration, students, campus services, ancillary staff, and support staff. A list was made of the categories of customer, their requirements, and the improvements suggested, so that we could analyze the information.

### Check

We checked the requirements noted by the customers against what we previously believed the customer wanted. Through this exercise, we were better able to evaluate our perceptions of our roles within ICS. This part of the process had been based on the question, "If I were in that person's position, what would I need most?"<sup>5</sup>

### Act

Obvious changes were made immediately. Plans were put into place to address long-term issues.

## SURVEY RESULTS AND IMPROVEMENTS

Differences in requirements between what the QIT thought the customers would want and the actual requirements identified by surveyed staff members were noted. Major differences and comments for improvements were received primarily from three groups: ICC members, infection control liaisons, and administration representatives.

We could not address all requirements from the survey immediately. However, the improvements outlined were developed and implemented within 6 months of the survey.

### ICC

The QIT believed that the ICC members' requirements would be as follows: (1) reporting on surveillance activities, (2) providing a monthly report, and (3) reviewing infection control policies. Additional requirements obtained from ICC members during the survey process included orientation of new members, revision of the system for policy review, and increased communication with the committee (Table 1). Comments received regarding ICC processes included helping members in interpreting the monthly surveil-

**Table 2.** ICS customer survey—liaisons

Perceived customer requirements	Actual requirements of customer	Improvements
Provide a monthly newsletter	Same	No action
Good communication	Same	No action
Not mentioned	Provide regular updates	Quarterly meetings begun
Not mentioned	Maintain infection control manual, keep policies up to date	Highlight changes on policies
Not mentioned	Educate liaisons on new infection control policies and procedures	Computer mail messages used for updates, changes
Not mentioned	Determine correct practices	Minisurveys performed
Not mentioned	Be accessible	Paging system changes, phone message system added

lance report, such as adding summary information as a cover sheet, and changing the format of the report to reflect the data better.

A 1-page cover-sheet summary was developed for the ICC surveillance report. The summary outlines important information taken from the surveillance data. In addition, graphs are used, with comparative time trends included. The format changes have stimulated ICC member discussion and directed attention toward potential problem areas.

A change was made in the manner of presenting policy changes to the ICC. Current policies have the changes written in (rather than retyping the document). Only major policy changes are reviewed and discussed. This practice has assisted committee members in evaluating and focusing on proposed changes.

New ICC members and visitors are now introduced at meetings. We believe that members have been interacting more since this routine began.

### Infection control liaisons

The QIT believed that the infection control liaison requirements would include good communication (with the liaisons) and provision of a monthly newsletter. Additional requirements obtained during the survey process included (1) provide regular updates, (2) maintain the infection control manual for both the unit/department and UMH, (3) provide education regarding new infection control policies and procedures, (4) determine proper techniques and ensure that areas meet regulatory standards, and (5) ensure ICS staff accessibility (Table 2). This information made us realize that the liaison position, which had been created 2 years earlier, could be influential and useful. Since this survey, we have increased involvement of the liaisons in the infection control program.

Quarterly liaison meetings were begun, with topics changing each meeting. Approximately one third of the liaisons attend each meeting, and feedback from these sessions has been positive. We believe that the exposure and interaction provided by these meetings have been useful for all participants.

Regular updates regarding policy changes are now sent out by an electronic mail system. Memos sent with infection control manual update information highlight important policy changes. This system has increased staff members' awareness of changes in policy statements.

The departmental paging system was changed to make ICS staff more accessible. We also added voice mail, to assist individuals in leaving a message for or paging an ICS staff member when no one is in the office.

### Administration

The QIT believed that the administration requirements would include (1) make the infection control program a cost-effective operation, (2) provide cost-containment ideas related to infection control, (3) review infection control practices, (4) provide information promptly, and (5) provide appropriate reports with specific focus on potential risks. Additional requirements obtained during the survey process included (1) education of staff, (2) research related to policies and procedures, particularly invasive practices, and (3) provision of technical assistance to advise administration concerning clinical and nonclinical matters relating to infection control, such as infectious waste (Table 3).

ICS staff have begun performing minisurveys, especially in ambulatory care areas. Surveys have been performed for many years in high-risk areas, such as intensive care units. However, these smaller minisurveys have been added to ensure that other areas are also in compliance

**Table 3.** ICS customer survey—administration

Perceived customer requirements	Actual requirements of customer	Improvements
Review infection control practices	Same } Same } Same }	Minisurveys added to activities, summary reports provided to area
Feedback problems promptly		
Provide reports with focus on potential risks		
Not mentioned	Perform research relative to policies and procedures	No action
Not mentioned	Provide technical assistance	Participation in QITs
Not mentioned	Education of staff	Increased use of videotapes
Make the infection control program cost-effective	Not specified	Incorporated into ICS QIT activities
Provide cost-containment ideas	Not specified	Part of survey activities

with policies and regulatory requirements. We believe that these surveys are preventive because they assist in the identification of potential problems.

Future plans include the development of better mechanisms to track outpatient infections and new methods of inservice education. We will also be developing quality indicators for ICS and conducting another customer survey to monitor our ability to provide good customer service.

#### COMMENTS

Berwick<sup>8</sup> states that quality improves as those served and those serving take the time to listen to each other and to work out their inevitable misunderstandings. Deming tells us to give customer concerns top priority, to study and improve constantly every work process so that the final product or service exceeds customer expectations.<sup>3</sup> Quality, according to Deming, has no meaning except as defined by the desires and needs of the customers.<sup>7</sup>

The ICS staff were certainly surprised by some of our customers' expectations. Before the survey, we believed that we could easily identify each customer's needs. This assumption was not entirely correct! Through our survey and subsequent improvements, we have made progress in meeting the valid requirements of ICS's customers. We

agree with Marszalek-Gaucher<sup>6</sup> that to have a customer focus we must stay in personal contact. Learning to listen carefully to our customers will help us change our products and services to meet the challenges in the future and continue to provide increased value to the institution.

The practice of infection control continues to change, as do our customers. ICPs should join the total quality movement and begin the journey of continuous improvement.

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