Developing a Quality Management System for Behavioral Health Care: The Cambridge Health Alliance Experience

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The rapid pace of change in the health care system presents tremendous challenges for clinicians and managers charged with the delivery of mental health and substance abuse services. Declining reimbursement, new incentive structures, and increasing competition are placing unprecedented pressure on providers to deliver care efficiently. Regulatory scrutiny, consumer dissatisfaction, and a growing awareness of gaps between actual and ideal practice have led to intensifying pressure to improve quality. Yet system change has also presented new opportunities for managing cost and quality of care. Consolidation of facilities and practices into integrated networks, developments in information systems technology, and the emergence of models to facilitate change have led to the rise of "quality management," a framework for assessing and improving clinical, operational, and financial performance within a health care organization. This article reviews some of the precipitating factors and theoretical structures underlying quality management and then, through a case study of one organization's experience, describes the implementation of a quality management program in a behavioral health care delivery system. The case study emphasizes how theoretical frameworks were operationalized and how organizational structure and process were shaped to address challenges well known in quality management, such as authority, accountability, and follow-through. A multiphase model of quality management program development is formulated and used to provide context for this program's development. (HARVARD REV PSYCHIATRY 2000;8:251–260.)

Nearly every health care organization (e.g., plan, network, hospital, clinic) across the country is developing the capacity to conduct quality management (QM). The term is a relatively new one, a semantic amalgam of more familiar terms: *quality improvement* and *utilization management*. A precise definition of QM is still emerging from a coalescence of theory, methods, and practical experience, but QM can be thought of as a framework for assessing and improving clini-

cal, operational, and financial performance within a health care organization.

This article summarizes factors stemming from health care system change that led to QM's emergence, describes the primary theoretical frameworks that serve as QM's foundation, and describes one behavioral health care organization's efforts to implement a QM program.

BACKGROUND

Changes in the U.S. health care system over the last decade include the development of new organizational structures, changed economic incentives, privatization, and the growth of managed care. Quality management has emerged as a result of these changes and is rooted in what can be thought of as the seven *C*'s:

- *Closing gaps in clinical quality.* A vast body of research has documented that the quality of health care varies widely across the United States. In behavioral health[1,2] and elsewhere in medicine,[3] a substantial proportion of practice has been found to diverge from evidence-based treatment recommendations. In some cases, these variances have been linked to lesser clinical outcomes. Federal and state governments, along with purchasers, accreditors, and provider organizations, have fostered a national agenda aimed at closing the gap between evidence-based treatment and actual practice.[4] Progress will require health care organizations to have the capacity to assess and improve their practices.
- *Compliance.* Among the most immediate drivers of change in an organization's clinical practice is the need to comply with regulations, reporting requirements, and performance standards. Requirements for reporting on quality and performance are growing rapidly, as is the expectation that organizations will improve in lagging areas. Failure to comply brings with it the risks of losing contracts and referrals, adverse accreditation or licensure actions, and bad publicity—all of which can threaten an organization's survival.
- *Cost containment.* Utilization management, price competition, at-risk contracting, and reductions in federal and state reimbursement have combined to put unprecedented financial pressure on health care organizations. Many once-decentralized delivery systems are now aggressively managing costs and utilization.
- *Consumer concern.* Consumer satisfaction with health care in the U.S. has been declining over the past decade.[5,6] Prominent among consumers' concerns are access, costs, and managed care practices. While there is little evidence to date that quality is a major influence on consumer decision-making, patient satisfaction has been linked to compliance with care, provider selection, and health plan disenrollment.[7] Some health care organizations are adopting quality improvement methods in order to respond to consumers or to their congressional representatives, who are weighing a variety of proposals to regulate managed care.
- *Continuous quality improvement (CQI).* Improving quality and lowering costs requires that an organization have the capability to evaluate clinical and operational processes and intervene to improve patient outcomes. Many health care organizations have historically lacked a systematic approach to do so. Many are now looking to models such as CQI for guidance. Based on problem identification, priority setting, statistical analysis, and teamwork, CQI can facilitate change in response to internal goals and external mandates.
- *Consolidation.* As long as health care remained largely a cottage industry of independent hospitals and private practices, "managing" quality across these sites was difficult. Consolidation and integration of hospitals and practices into large, integrated systems has made it possible to facilitate systemwide assessment and improvement.
- *Computerization.* Computer-based information systems can now link practice settings across a network, collecting clinical, operational, and financial data. While the maturation of these information systems is incomplete—for example, there are difficulties integrating different types of data—strategic data collection and analysis can provide information about quality and utilization, and lay a foundation for better management and improved care.

THEORETICAL FRAMEWORKS

There is no single theoretical framework for quality management in health care; however, a number of conceptual frameworks inform QM activities. Two influential models are Donabedian's tripartite framework for assessing quality of care in terms of structure, process, and outcome;[8] and CQI, an industrial model for managing change.[9] Where Donabedian's framework provides a perspective on how health care is structured—much as traditional X-rays provide static images of the body's structure—CQI can be thought of as a functional or dynamic model, akin to positron emission tomography's (i.e., PET scan's) view of the body's functioning. A third model, Kaplan and Norton's balanced scorecard,[10] facilitates management of multiple priorities and was adopted by the organization featured in the case study.

Structure, Process, and Outcome

Donabedian's framework for quality assessment evaluates health care through the component parts of structure, process, and outcome.[8] Structural elements are characteristics of patients, providers, settings, and organizations. Process refers to the interaction among structural components or, more specifically, to the type, duration, and intensity of care, including both technical and interpersonal aspects. Outcome is the result of that interaction for the patient. Domains of outcome typically include clinical and functional status, and quality of life. Cost and patient satisfaction are also part of this schema, although they have been categorized either as processes or outcomes. Structures, processes, and outcomes are the building blocks of quality management. They are what are measured, managed, and subject to change.

Continuous Quality Improvement

Continuous Quality Improvement is an industrial quality management model, pioneered by Shewart in the 1920s in the United States, applied with considerable success by the Japanese auto industry, and then rediscovered by the American manufacturing community in the 1980s under the tutelage of Deming and Juran.[9] There are other models of industrial "re-engineering"; CQI is presented here as a representative system. Principles of CQI are as follows:

- Health care is a series of processes in a system leading to outcomes.
- Quality problems can be seen as the result of defects in processes.
- Quality improvement efforts should draw on the knowledge and efforts of individuals involved in these processes, working in teams.
- Quality improvement work is grounded in measurement, statistical analysis, and scientific method.
- The focus of improvement efforts should be on the needs of the customer (e.g., patients, but also referrers, payers, and other components of the health care system).
- Improvement should concentrate on the highest priority problems (i.e., those having the greatest impact on patient outcomes, costs, and other critical areas).

Juran outlines a typical quality improvement process[11] in which a working group begins by defining the problem to be addressed. Measures of the problem are established. A diagnostic process then takes place in which theories about the problem's root causes are formulated and tested. Interventions to remedy the problem are developed and implemented, followed by remeasurement. A "rapid-cycle improvement" variant of CQI calls for serial interventions over days to weeks, with frequent measurement. This allows for an empirical process of diagnosis and intervention, as well as multiple point improvements to address multifactorial problems.[12]

To date, there is little rigorous evidence examining the effectiveness of quality improvement, though an infusion of federal research dollars in this area is beginning to yield results.[13] Even more scarce are studies comparing one method of quality improvement to another.[14]

Contemporary CQI evolved from quality assurance (QA)—the traditional model through which health care organizations addressed quality concerns—in several ways. First, where QA focused mostly on individual cases, CQI assesses care received by all service utilizers and, in some cases, by nonutilizing plan members. Second, QA typically utilized peer review—subjective assessment of an adverse event—whereas CQI focuses on measurement. Structural measures (for example, nurse-to-bed ratios) had previously been used in hospital accreditation, but accreditors and oth-

ers are now emphasizing process and outcome measures in assessing quality. Third, QA tended to be reactive around specific events, whereas CQI seeks to actively shape a culture that sustains routine self-evaluation and ongoing improvement. Finally, CQI integrates clinical improvement with operational and financial performance.

Balanced Scorecard

While researchers have long debated the merits of process versus outcome measurement, it is now becoming recognized that each type of measure is important. Process measures can determine whether a patient is getting evidence-based treatment, and outcome measures can assess whether the patient is getting better.[15] Similarly, health care managers are increasingly asked to lower costs while simultaneously improving quality. Thus, managers need to monitor performance in terms of clinical processes, patient outcomes, and costs. The "balanced scorecard" is a model developed at Harvard Business School that facilitates performance management in these domains (see Table 1).[10]

CASE STUDY: BRINGING QM FROM THEORY TO PRACTICE

The following case study describes a QM program for behavioral health (i.e., mental health and substance abuse) services at the Cambridge Health Alliance, with an emphasis on how the theories outlined above were operationalized and implemented. A *Medline* search yielded a number of reports describing the implementation of QM programs in behavioral health care.[16–25] Each report differs substantially from the others, reflective of QM's recent introduction to behavioral health care. Some focus principally on describing QM theory, while others describe specific quality improvement projects. Collectively, they provide a range of approaches and stages of development. This report contributes to the existing literature by describing our health care system's implementation experience, in particular our efforts to address QM challenges such as establishing focus, authority, accountability, and follow-through. We present a multistage model of QM development, which provides a context for our program's development.

Cambridge Health Alliance

Based in Cambridge and Somerville, Massachusetts, the Cambridge Health Alliance is a Harvard-affiliated, community-based health care network consisting of two hospitals and 24 ambulatory care centers, residency programs in primary care and adult and child psychiatry, and a health plan. The Alliance serves a multicultural, economically mixed population. Inpatient behavioral health services comprise approximately 100 of the network's 240 beds. Ambula-

TABLE 1. A "Balanced Scorecard" of Measures for Cambridge Health Alliance Behavioral Health Services

Services	Measures			
	Satisfaction	Clinical	Access/continuity	Cost/utilization
Adult				
Inpatient	Family involvement Overall satisfaction	Readmission rates Timely treatment plans	Postdischarge appointments Medication appointments	Inpatient days* Length of stay
Outpatient	Family involvement Respectful treatment	Timely treatment plans Primary clinician contact	Appointment within 7 days No-show rate	Completed billing slips Actual vs. expected volume
Child/adolescent				
Inpatient	Family satisfaction Overall satisfaction	Restraint events PRN medication usage	Discharges to partial Postdischarge appointments	Administratively necessary days† Length of stay
Outpatient	Family satisfaction Overall satisfaction	Timely treatment plans Primary clinician contact	Completed intakes Timely medication appointments	Completed billing slips Actual vs. expected volume
Addiction				
Inpatient	Family involvement Overall satisfaction	Elopement rate Planned discharges	Outpatient follow-up Discharges to residential	Patient days Length of stay
Outpatient	Family involvement Overall satisfaction	Timely treatment plans Case management visits	Treatment engagement No-show rate	Completed billing slips Number of outpatient visits

*Inpatient days refers to the total number of inpatient days per inpatient unit per month. The service requires a threshold number of days to meet budgetary goals.

†Administratively necessary days are those deemed by a managed care reviewer to be unnecessary for clinical care at an inpatient level and thus reimbursed at a lower rate.

tory behavioral health services provide approximately 100,000 ambulatory visits and 5,000 emergency visits, and include partial hospital and intensive outpatient services. The Department of Psychiatry employs approximately 400 clinicians, administrators, and staff, and has an annual budget of approximately $29 million.

The Alliance's characteristics suggest some generalizability of its experience with QM. As a moderate-sized, community-based system in an urban setting, the Alliance treats a clinically and demographically mixed population. The network faces problems seen across the country: fragmented service delivery, variability in access, opportunities for improvement in clinical care, and increasing fiscal pressures and external expectations. Less typical of some systems are the Alliance's strong academic affiliation and a historically generous public subsidy. Other differences include a public-sector orientation and mental health "carved in" with general medical care in both the delivery system and the health plan.

QM Needs
Many of the Alliance's patients have one or more characteristics known to make patients vulnerable to receiving poor quality care,[4] including mental illness, complex comorbidities, limited social or financial resources, and a vari-

ety of barriers to access (e.g., linguistic, cultural, educational, and physical). Approximately 40% of the Alliance's patients lack health insurance. Approximately 25% have a first language other than English, requiring interpreters or native language speakers for their care. The community has higher than average rates of mental illness, substance abuse, and homelessness.

Beginning in the early 1990s, the Alliance encountered a growing need to develop a strong quality management capability. First, a merger between two hospitals and their health centers formed the Alliance, resulting in a much larger and geographically dispersed network that required stronger management and improved integration among services. Second, after being sheltered from cost-containment pressures longer than private systems, the Alliance encountered declines in public subsidy, the introduction of managed Medicaid, and federal cuts to Medicare. Third, payers, managed care organizations, state regulators, and accreditors increased their reporting requirements. Finally, the Alliance's formation of a prepaid health plan required an expanded capacity to manage cost, utilization, and quality.

QM Challenges
There were challenges to managing quality and costs in the Alliance's Department of Psychiatry, deeply embedded in

the culture. Each service perceived itself as autonomous and acted primarily on local interests. Quality was defined narrowly by individual clinical services, which assumed responsibility for the care *they* delivered, but not for the patient's progress through the overall delivery system.

Many clinicians, while extremely talented and passionately devoted to patients, had little knowledge of the financial and business dimensions of the clinical enterprise and little accountability for resource utilization and quality reporting. Though the culture was admirably nonhierarchical, egalitarian, and consensus-oriented, these factors contributed to ineffective decision-making. An emphasis on process often overrode progress toward needed outcomes.

As at many institutions, quality improvement work had been marginalized, focused on "interesting" projects rather than mission-critical goals, and carried out by groups that were not well integrated into the department's management structure. Many projects were started, but few resulted in measurable improvement. As external demands increased, the lack of infrastructure, organizational readiness, and focus became apparent.

Goals for the QM Program

The overall purpose of the department's QM program is to assess and improve quality of care, financial performance, operational efficiency, and clinical resource allocation. The program draws heavily on the theoretical models described previously. Specific program goals include the following: (1) to implement quantitative measurement to assess key processes; (2) to bring managers, clinicians, and staff together to review quantitative data and major clinical adverse occurrences to identify problems; (3) to carefully prioritize identified problems and set goals for their resolution; (4) to achieve measurable improvement in the highest priority areas; (5) to meet internal and external reporting requirements; (6) to provide education and training to managers, clinicians, and staff; and (7) to develop or adopt necessary tools, such as practice guidelines, patient surveys, and quality measures.

Quality management development at the department level was part of a wider restructuring by network leadership. The chief executive officer has promoted the development of managerial and leadership skills, greater accountability, and CQI activity throughout the organization.

QM Staff and Education

The department invested in staff, hiring a part-time physician leader, a QM coordinator, and a data analyst, the latter two positions full-time. The coordinator's responsibilities include program management, medical record audits, data presentation, coordination of QM activities, and working closely with frontline managers. The data analyst's skills and responsibilities include statistical analysis of clinical and financial data, database design, and programming in SQL and SAS. For the past several years, the Alliance has been training all employees in CQI. The department augmented this training by sending clinical managers to hands-on workshops with CQI experts.

QM Organization and Process

Department leaders, clinical service managers, and QM leadership work closely together to integrate QM into the clinical, operational, and financial work of the delivery system, so that QM work no longer proceeds in isolation from the strategic priorities of the department.

Figure 1 provides an overview of the organizational structure. Quality management work is conducted at the level of the individual clinical services (adult ambulatory and intensive, child, addictions, and geriatrics), reported to the behavioral health QM committee for peer input, and reviewed by the leadership committee to set priorities, assess progress, and hold managers accountable. The Alliance board of trustees is one example of an agency outside the department to which mangers report results; others are managed care organizations, regulators, payers, and accreditors.

At the outset, the clinical director and QM director met with managers of each service to select quality measures based on internal and external priorities.

The department had no shortage of measures from which to choose. Medicaid, the Department of Mental Health (DMH), and a number of commercial payers each had unique measurement sets for which the department was expected to submit data and performance improvement updates.
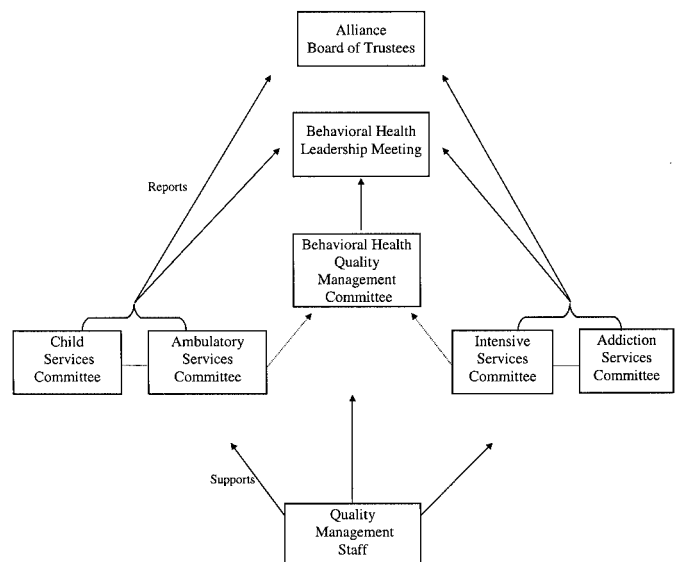

FIGURE 1. Organizational structure for conducting and reporting quality improvement. (Alliance Board of Trustees is an example of one of the "external" entities to which behavioral health services report.)
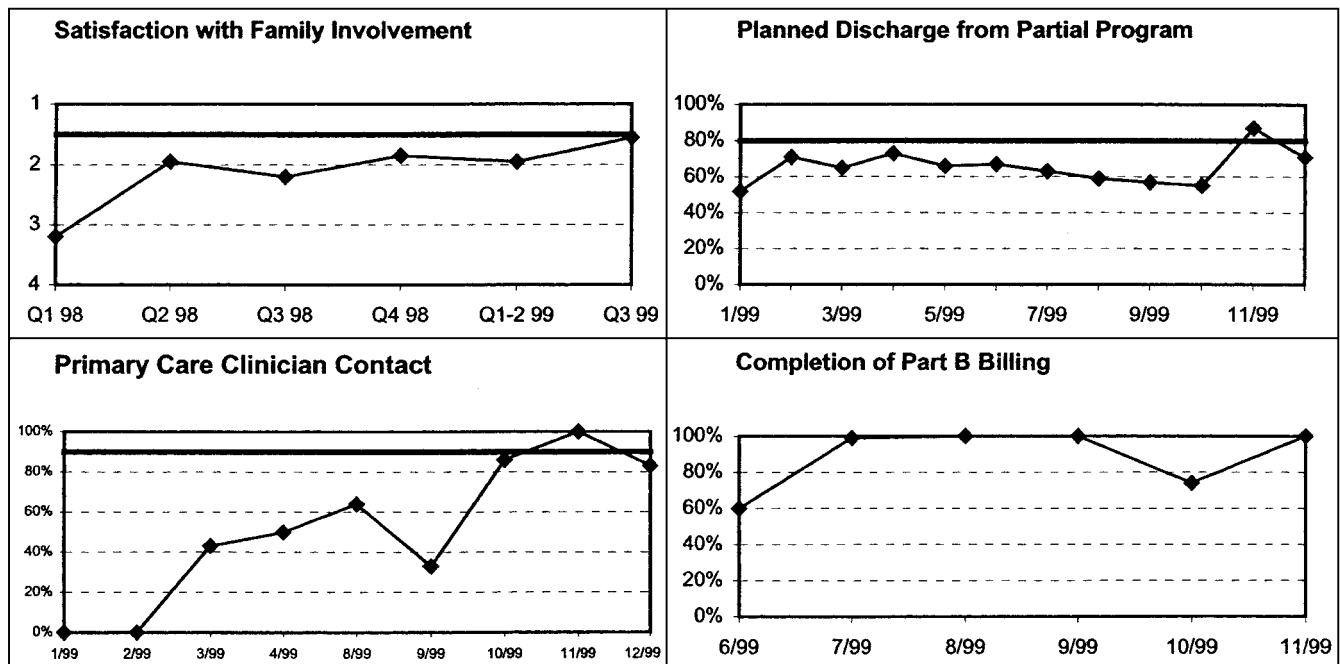
FIGURE 2. Performance change over time for selected measures. Bold horizontal lines represent the goals established for performance on the measures; Q = quarter.

Medicare compliance and Alliance budgetary goals had given rise to additional measures. The board of trustees had adopted a national set of clinical measures, the Maryland Indicators, to which they sought to hold services accountable.

Essentially, the department ceased to attempt to evaluate its performance on all measures. (It had not been succeeding in any case.) Instead, each service selected a few measures for priority attention. Two measures were chosen in each of four dimensions: access, clinical care, cost/utilization, and patient satisfaction. Selection criteria were based on the measure's meaningfulness, its importance to key external groups, the extent to which performance was substandard, and the belief that the measurement gap revealed a significant quality deficit that was within the service's control to improve. Table 1 illustrates part of a preliminary "scorecard" of measures. In the clinical domain, the decision was made to focus initially on process measures.

Initially senior managers selected the measures ("top down"). Over time, measures and goals were added with "bottom-up" participation from the local service level. For each priority measure, an improvement goal was established along with a timeline for achieving it.

Actual improvement work, i.e., redesigning clinical and operational processes to improve performance, is conducted at the level of the organization where the problem exists and led by the manager of that service. In order to measure progress, services are routinely provided with "run charts" (graphs illustrating change over time) for each measure,

compared to a standard or goal (Figure 2). Goals are either established by managers with staff input or reflect an externally imposed standard (e.g., by Medicaid).

At the department's QM committee meeting, clinical managers, clinicians, and staff review quality, utilization and cost data, and major adverse events to identify potential problems. In rotation, the head of each service presents improvement work around priority measures, with time for peer input and discussion. The clinical manager also presents a review of significant adverse events (using a standardized format: event summary, assessment, problems identified, and action plan). The review is discussed, revised as needed, and then approved by the committee.

The strength of the department's QM committee is that it allows for peer discussion, interservice collaboration, and monitoring progress. However, as a committee of peers, it lacks authority to ensure that the work is completed. Accountability for results rests in the department's weekly leadership meeting, led by the department's clinical director and attended by the clinical managers and QM director. Graphs illustrating change over time for each measure are briefly reviewed. The clinical manager summarizes steps to reach the established goal, and if it has not been achieved, describes next steps. The committee also revisits major occurrences 3 months after the QM committee review to ensure the action plan was implemented.

The committee structure has been designed to foster accountability and ensure committee chairs have appropriate

authority. The clinical director, who chairs the leadership meeting, is the direct supervisor of the managers for the five clinical services. He writes their job descriptions, conducts their performance reviews, and determines their salaries, thus having authority to hold them accountable for achieving results. This structure is repeated at each level of the organization. For example, the intensive services committee (Figure 1) is chaired by the director of intensive services, who supervises the committee members: managers of the inpatient units, the partial program, and the emergency service. Each manager is accountable for goals and measures under their domain.

Another feature of the organizational structure is the relationship of the clinical managers to customers outside the department (e.g., the board of trustees). The clinical managers continue to "own" the measures from their service and present the progress of quality improvement work in all reports to external customers, thus reinforcing the locus of accountability. For example, in response to the Board's request for a report on high readmission rates, the intensive services manager presented the work rather than the department head. In this way, those responsible for the work are exposed to the external expectation that it be completed.

CURRENT CQI ACTIVITIES

An initial goal was to have each service working toward measurable change in one priority area. Following a departmentwide template, each service routinely reports on progress using the following format: aim, measure, interventions, results (in graphical format), and next steps. To date, progress has been limited and varies by service. Examples are described below.

Reducing Readmission Rates
Prompted by high readmission rates compared with other institutions that had adopted the Maryland Indicators, a national set of clinical measures, the adult inpatient service established the aim of reducing its rate. An initial chart review showed many readmissions were associated with patients admitted for both a mental disorder and active substance abuse, and followed a previous elopement. Changes in the off-unit privilege policy for patients undergoing detoxification were followed by a sustained decrease in the number of elopements and a transient decrease in readmission rates. Next steps include upgrading inpatient dual diagnosis treatment and improving the process for assigning discharged patients to intensive case management.

Decreasing Restraints of Adolescents
In response to high rates of physical restraints of adolescents, the adolescent inpatient service began a project to decrease their use. Interventions have included staff training in de-escalation techniques, and a next step involves redesigning the treatment program to reinforce behavioral interventions.

Reducing Partial Program Lengths of Stay
The partial hospital program is an acute service that had had a 25-day average length of stay, twice as long as intended. Long lengths of stay were limiting opportunities for the service to accept patients stepped-up from emergency encounters or stepped-down from inpatient care. Transition from partial to outpatient care occurred more slowly than necessary. Interventions included reviewing lengths of stay on daily rounds, discussing expectations and treatment goals with patients and referrers prior to admission, and working with the ambulatory service to begin visits with an outpatient clinician prior to discharge. Over 6 months, the length of stay decreased from 25 to 14 days.

Outpatient Addictions Case Management
The outpatient addictions service, which relied almost entirely on group treatment, decided to add individual case management visits to customize treatment goals, monitor patient progress, and coordinate associated services. To date, they have developed a measure—the proportion of patients in active treatment with at least one case management visit per month—and established a goal to reach 70% conformance within 6 months.

LIMITS TO PROGRESS

It would hardly surprise any clinician or health care manager to learn that the Alliance's implementation of QM has been halting, the clinician buy-in uneven, and the achievement of measurable improvement slow. At times, the process has led to tension and conflict. Culture change is not easy.

The first challenge is content. Many clinicians resent and resist QM activities that are oriented around limiting utilization and cutting costs. Managed care can promote efficiencies, and, particularly in the public sector, it can conserve resources that may be used elsewhere in the health care system. However, managed care has also diminished clinicians' autonomy and drained the delivery system of resources that once sustained a rich professional, intellectual, and educational milieu. In addition, some clinicians believe that managed care has limited the provision of needed services. One can agree or disagree with their perspective, but it is evident that many clinicians are mourning these losses. In implementing QM in such a context, one observes a range of responses not unlike Kubler-Ross's stages of mourning death—denial, anger, bargaining, depression, and acceptance. In our experience, pursuing quality improvement in health care without attending to the associated affect is unlikely to succeed.

Leaders at the Alliance and elsewhere have attempted to acknowledge clinicians' feelings while focusing on adapting to external realities. Another strategy is to create a balance between cost containment and clinical improvement goals. Additionally, clinicians and staff from each of the services should participate in selecting quality priorities, measures, and goals so that they have an investment in the work.

Another challenge is the process. For reasons described earlier, QM's accountability and outcome-oriented process is something of a xenograph for the Alliance, as it is for many other health care systems. In surveying the organization, we found that many local service units (e.g., a specialty outpatient clinic) lacked a single individual with responsibility for the unit's operations and outcomes. We also encountered differences between individuals and their supervisors in how jobs were defined. These findings provided direction for negotiation, promotion, and new hires.

Some clinical managers engaged readily with the QM model. For some others, a lack of engagement or inability to make progress reflected a need to develop skills to carry out newly defined responsibilities. This observation has reinforced the department's investment in CQI training. While some clinicians found QM data to be helpful and intellectually stimulating, others focused on data limitations to the exclusion of content. Accurate data are crucial and typically require ongoing improvement. Some clinicians needed to be encouraged to participate in improving the data and then moving on to what can be learned from the results.

Findings suggestive of quality problems at times led to defensiveness among clinicians, because they were interpreted as criticism of their work. Much time has been devoted to encouraging them to see these analyses as opportunities for new insights and improvement. Reviews of progress toward meeting goals and deadlines also generated defensiveness and anxiety, particularly when steps to address problems had not been taken or did not lead to desired results. These observations underscored the importance of focusing on the work as a *learning* modality rather than a *judgmental* modality. Changes in expectations and roles inevitably bring about anxiety. Limited amounts of anxiety motivate individuals to learn new approaches and carry through on assigned tasks. But anxiety can easily intensify and harden into fear and anger. Positive feedback and continuing encouragement can help managers to learn, achieve competency, and succeed.

Discussions with QM leaders across the country indicate that partial progress with QM is currently the norm rather than the exception. Quality management is a relatively new field and offers health care a limited, still emerging set of concepts and tools. Some of the constraints are technical. There are few well-validated clinical process measures for behavioral health,[26] which requires managers to rely on untested clinical measures or administrative indicators such as waiting times. In focusing on what can be measured, CQI may neglect important aspects of health care.

Much remains to be learned about influencing organizational behavior. As health care organizations struggle to transform their cultures and manage change, perhaps psychiatrists can contribute insights into interpersonal and organizational dynamics. How can clinicians and managers be encouraged to examine data with an open mind rather than defensively? How can the work maintain a constructive orientation toward learning rather than deteriorating into criticism or blame? How can clinicians and staff be helped to focus on the components of problems that they *can* influence, rather than on factors beyond their control? How do leaders uphold accountability without embarrassing nonperformers? More broadly, how does one mesh the humane values of psychiatry—interpersonal sensitivity, a primary responsibility to the patient, and a focus on the individual encounter—with the organizational perspective of QM and the bottom-line orientation of the marketplace?

LESSONS LEARNED

Development and implementation of QM is a gradual process. Table 2 illustrates a model of developmental stages for implementing QM. In the first generation of program development, data are typically limited to enrollment information and billing claims. Analytic priorities include establishing access to key variables, linking databases (e.g., enrollment files and utilization claims), addressing problems with data integrity, and producing clear and meaningful reports. Initial organizational steps include clarifying the organization's structure and developing committees to bring staff and supervisors together at regular intervals.

In a second-generation program, additional data should be drawn from medical records and patient surveys to create measures with more clinical relevance. Due to their complexity and cost, we believe that outcome measures should be phased in once the organization has demonstrated the ability to use process data effectively.[15] The QM committee process should review data and occurrences on a routine basis, identify quality problems, prioritize among these problems, and initiate improvement in the highest priority areas. Individuals at each level of the delivery system should be cognizant of their QM roles and participate actively. Regular follow-up on improvement activities should occur and measurable improvement should begin to be seen.

A third-generation QM program represents a maturation of the preceding processes. Data collection and reporting achieve a flexible capacity to examine new areas as priorities evolve over time. The "learning organization" of Table 2 refers to one that has established routine processes for quality assessment and improvement integrated into the management, daily work, and culture of the organization. There is a

TABLE 2. Developmental Stages of Quality Management for Health Care Organizations

Generation	Data issues	Quality measures	System change

First	Administrative data
	Data access
	Data integrity
	Presentation
		Structural measures
		Process measures
		  • Utilization
		Aggregate data on minor occurrences
		Case reviews of major occurrences
			Training of staff and managers
			Organizational development
			  • Leadership
			  • Data review
			  • Occurrence review

Second	Patient-level data
	  • Medical records
	  • Patient surveys
	  • Pharmacy claims
	Targeted reporting
		Process measures
		  • Indicators of treatment content
		Outcome measures
			Establish routine quality management process
			  • Identify problems
			  • Prioritize among them
			  • Initiate improvement
			  • Follow up on progress

Third	Meeting internal and external needs
	Flexible focus
		Integration
		  • Process *and* outcome
		  • Technical *and* interpersonal
		  • Clinical *and* cost
			Achieving quality improvement goals
			  • Ongoing activity
			  • Measurable improvement in high-priority areas
			  • Meeting internal goals and external expectations
			Establishing a learning organization

common understanding of the expectations of the organization's key customers as well as the organization's own clinical, financial, and strategic goals.

Quality management activities should be "the work" of the organization. In an earlier era, quality improvement projects were often marginal activities, selected primarily to fulfill accreditation requirements and existing alongside the "real work" of managers, clinicians, and staff. Quality management's goals should represent the delivery system's principal objectives, and the work should be oriented toward achieving them.

Individual ownership and accountability are paramount. In order for quality improvement to occur in a large organization, problems need to be owned by individual leaders who are responsible for the clinical and operational processes needing improvement and who are held accountable for the results. Continuous quality improvement's emphasis on teamwork—involving participants from each part of the process under review—is valuable, but teams must have accountable leaders.

Leadership's role is to establish priorities and insist on results. Traditional CQI theory emphasizes the necessity of "buy-in" from leadership. Our experience suggests that improvement will occur only if senior leaders insist on it. Leaving CQI activities to the local level tended to produce projects that were poorly aligned with overall departmental objectives, that had unfocused goals, and that resulted in poor rates of completion. Leadership is needed to establish priorities, negotiate realistic goals, and maintain consistent focus and follow-up.

Quality management requires resource investment. Holding individuals accountable for change requires resources and capabilities. Training in quality improvement methods, providing mentorship and coaching, and making available support for data collection, analysis, and presentation are critical for success. Systems limited in resources—whether managerial or analytic—should limit the number of measures and goals they address.

Continuous quality improvement is dependent on adequate measures. Though serial measurement can focus attention on key processes and drive activity forward, CQI is no better than the measures available. While process and outcome measures are becoming more plentiful, meaningful, and feasible, further development is needed. Process measures need to be evidence-based, valid and reliable, and affordable to implement. Outcome measures need to be standardized across systems and have adequate statistical adjustment for differences among populations. The Agency for Healthcare Research and Quality (formerly the Agency for Healthcare Policy and Research) has funded a National Inventory of Quality Measures in Mental Health to provide a comprehensive catalog of behavioral health process measures for quality assessment and improvement activities (available at www.challiance.org/cqaimh). The inventory includes technical specifications; available validity and reliability data; conformance results; standards; and the measures' foundations in scientific evidence.

CONCLUSIONS

Within the Alliance, QM's tracks have been laid and the process is moving forward, but it has not yet achieved optimal

speed or direction. In terms of the framework outlined in Table 2, our QM program's development is currently in its second generation. We have developed facility with data from various sources. Clinicians, managers, and staff meet on a regular basis to review adverse occurrences, data, and progress in improvement activities. However, a key indicator of QM success is measurable improvement in high-priority areas, and we have achieved this in only a limited number of areas.

We continue to review and adjust our QM process. When we observed that the QM committee lacked the authority to ensure the work was done, a leadership committee was created with supervisory authority. The services' priorities and goals have been sharpened. The number of measures has been reduced, while expectations for accountability and progress have increased. It is broadly recognized within the Alliance that the pace of change in health care will remain rapid and external expectations will continue to rise. The continuation of the network's safety-net mission rests on our ability to meet these expectations and fulfill our strategic goals. Quality management provides a means to reach some of these ends.

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