IMPLEMENTATION OF THE METHADONE TREATMENT QUALITY ASSURANCE SYSTEM
Findings From the Feasibility Study

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This article describes the development and large-scale testing of the Methadone Treatment Quality Assurance System (MTQAS). MTQAS originated as a NIDA (National Institute on Drug Abuse) funded study to assess the feasibility and utility of implementing a performance-based feedback reporting system for narcotic addiction treatment programs. After several years of research to identify a set of valid, reliable, and clinically useful indicators of program performance using patients' in-treatment outcomes, MTQAS was tested in a feasibility study with more than 70 methadone treatment clinics in seven states. For each of nine quarters, participating clinics received a report summarizing their patient outcomes; reports also included summary data permitting comparisons across states, across clinics within a state, and within a clinic over time. In addition, MTQAS included a case-mix adjustment strategy that permitted fair comparisons of performance among programs with systematically different patient caseloads. The structure and operation of MTQAS, selected analyses of the data, and lessons for future performance measurement systems are discussed.

AUTHORS' NOTE: The Methadone Treatment Quality Assurance System Project was conducted in two phases by the Research Triangle Institute under Contract No. N01DA-9-8532 from the National Institute on Drug Abuse (NIDA). Dr. Luckey was project director during Phase II of the feasibility study; Dr. Dorynne Czechowicz was the NIDA government project officer throughout. The opinions expressed herein do not necessarily reflect those of NIDA or any other federal agency. Contributions made to this project by Dr. Czechowicz, the members of the advisory panels, the Center for Substance Abuse Treatment, the National Association of State Alcohol and Drug Abuse Directors, and the participating state methadone authorities and treatment providers are gratefully acknowledged.

EVALUATION & THE HEALTH PROFESSIONS, Vol. 23 No. 1, March 2000 72-90

Methadone is one of the most often studied and most highly regulated medical therapeutics (Molinari, Cooper, & Czechowicz, 1994; Rettig & Yarmolinsky, 1995). Narcotic addiction treatment programs in the United States are regulated by the Food and Drug Administration (FDA), the Drug Enforcement Agency, and State Methadone Authorities. Although the effectiveness of methadone in reducing heroin use and improving productive behavior is well established (Rettig & Yarmolinsky, 1995), questions have been raised about whether some narcotic addiction treatment programs are providing adequate treatment, even in light of this unique three-tiered regulatory oversight system (Ball & Corty, 1988; General Accounting Office [GAO], 1990b). Questions have also been raised about the effectiveness of federal and state oversight methods, which focus largely on compliance with process-based standards. Compliance with present regulations does not guarantee a minimal or acceptable level of program quality or patient outcomes (GAO, 1990b). Much recent attention has been paid to developing potential alternative approaches to the oversight of narcotic addiction treatment, so that the structure, process, and performance of treatment facilities could be systematically measured and compared to a national or state-specific set of norms or accepted standards.

In 1990, the GAO recommended that the National Institute on Drug Abuse (NIDA) and the FDA examine the use of performance standards for narcotic addiction treatment (GAO, 1990a). Subsequently, NIDA initiated an effort to develop and test a performance-based reporting and feedback system for methadone treatment programs. Such a system would serve a quality assurance or monitoring function for federal, state, and local oversight agencies while also helping programs improve their treatment services and patient outcomes. This article reviews the methods and findings of a recent feasibility study of the Methadone Treatment Quality Assurance System (MTQAS).

The MTQAS project involved the development of a prototype performance-based feedback and reporting system and a test of the feasibility of its implementation in a sample of clinics. Specifically, the project had five goals:

1. Define performance indicators, including patient outcomes, that may serve as the basis for a performance measurement system;

2. determine what information must be gathered about patients to fairly compare treatment outcomes among programs by adjusting for case mix (i.e., to separate the contribution of patient characteristics from program performance);
3. investigate operational problems that may arise if such a system were implemented;
4. determine how performance feedback should be structured so that it would be of the greatest utility to programs; and
5. examine how performance-based monitoring might be used to modify the federal regulatory structure for methadone treatment programs.

Due to recent proposals for changes in the federal regulation of methadone treatment, the purpose, goals, and role of MTQAS are of equal or greater importance today than when the project was first conceived. A national test of a proposed accreditation-based oversight system for ensuring quality of care is currently under way with two major accrediting bodies. Likewise, changes in the health care field, along with the federal government's increased focus on measuring performance and results, reinforce the need for systems that provide outcomes-based accountability. Notably, in 1993, Congress passed the Government Performance and Results Act (GPRA), which held all federal programs accountable for providing concrete evidence of progress toward their objectives. Consistent with the GPRA requirements, the Office of National Drug Control Policy (ONDCP) published *Performance Measures of Effectiveness: A System for Assessing the Performance of the National Drug Control Strategy, 1998-2007*, which outlined ONDCP's 10-year strategic plan to confront drug abuse in the United States and to measure progress toward its goals (ONDCP, 1998). Included in this plan are measurable targets specific to the effectiveness and impact of substance abuse treatment. Thus, the development of MTQAS represented a timely response to this heightened sensitivity toward assessing and improving the performance of a critical component of the drug abuse treatment field.

MTQAS provided a valuable tool for narcotic addiction treatment clinics to demonstrate their performance relative to a normative standard, using reliable and clinically useful measures of in-treatment outcomes—that is, measures of change in patient drug use and other behaviors during the course of their treatment episode. Most existing performance measurement or outcomes monitoring systems for substance abuse treatment programs rely on methods that compare patient

status at admission and discharge; pre-post comparisons are then used to assess treatment effectiveness and program performance. However, such measures are inadequate for methadone treatment providers, where retention in treatment (often for a number of years) is a frequent and desired outcome. Instead, MTQAS assessed program performance by tracking the progress of individual patients at regular intervals subsequent to treatment intake. Patient outcomes were then aggregated within clinics on a quarterly basis, and clinic-specific feedback reports were produced that permitted comparisons across treatment providers on 17 different dimensions. Using these reports, outliers could be identified and targeted for increased monitoring or technical assistance.

PROJECT PHASES

MTQAS was conducted in two phases. Phase I (1989-1995) was devoted to the system's initial design, which included identification of measures, a pretest of the measures, and pilot-testing of the procedures. Part 1 of Phase I assessed the reliability and clinical utility of the instruments in a sample of patients from five methadone treatment programs. Results of the analyses performed on data from Part 1 demonstrated that overall, test-retest reliability of the items on each instrument was very good (0.703). Review of reliability scores, in conjunction with clinicians' assessments of the utility of each item, led to revisions in the instruments used for a small-scale pilot-test of the system.

Part 2 of Phase I assessed whether a limited number of clinics (25) could implement this prototype performance-based system under a controlled set of conditions. Staff from all of the participating clinics received extensive training; data collection was monitored via weekly telephone calls to each clinic by the research team; and participating clinicians were paid to collect data on patient outcomes for a 3-month period. This small-scale pilot-test provided evidence that programs could collect the data necessary for a performance measurement system if they were given at least some degree of external support or supervision. Using data obtained during this phase of the project, the research team also developed a case-mix adjustment methodology for use in reporting comparative program outcomes (Phillips et al., 1995).

During this lengthy design phase, input was obtained from a broad range of constituents to guide the development of the system. The project's Internal Advisory Panel included representatives of numerous federal agencies involved in methadone treatment; a separate External Advisory Panel included treatment providers, researchers, state officials, and representatives from several national professional organizations with an interest in substance abuse treatment policy and services. At the conclusion of Phase I, a proposal for the further development and broader implementation of MTQAS in a second phase was unanimously supported by the two advisory panels and by the clinic directors who had participated in the Phase I pilot-test. Anticipating pressure from managed care organizations, treatment providers recommended that measures of patient satisfaction and health care utilization be added to the various drug use outcomes already included in the MTQAS instrumentation. Items unnecessary for measuring program performance or for case mix-adjustment analyses were eliminated, and streamlined instruments were produced for the Phase II feasibility study.

Phase II (July 1995 to March 1998) was designed to provide a feasibility test of MTQAS under realistic conditions with a group of community-based methadone treatment providers. Along with the noted changes in the instrumentation, the Phase II feasibility test moved MTQAS to a research-provider partnership model. Participating providers collected all the necessary data and, in turn, were given feedback reports each quarter. Unlike Phase I, Phase II did not include reimbursement to participating programs for their data collection efforts; instead, programs were asked to adopt MTQAS as part of their standard record-keeping procedure. This expectation further moved the project from the research realm to a full demonstration of the system's real-world operation and utility. The specific objectives of the feasibility test were to

1. determine whether a performance-based system could be implemented in methadone treatment programs on an ongoing basis and identify any operational problems with such a system (implementation), and
2. assess whether performance feedback alone, or in combination with technical assistance, could be used to guide changes in clinic processes or procedures to enhance the quality of care provided (quality improvement).

Eight states were selected and invited to participate in Phase II of MTQAS. Selection of these states was based on several considerations, including the likelihood of statewide implementation, indications of support from the treatment provider associations, availability of staff to handle data processing responsibilities, the size of the methadone treatment service delivery system, and geographic distribution. Seven states (Arizona, Colorado, Georgia, Massachusetts, North Carolina, Pennsylvania, and Washington) agreed to participate in the project. A total of 103 methadone treatment clinics were operating in these seven states at the start of the project; of these, 90 clinics initially indicated that they would become involved in the feasibility study. Overall, 64 clinics (or 71% of the 90 sites indicating initial interest) actively participated in the MTQAS data collection activities throughout Phase II. Active participants included both public and private (for-profit and not-for-profit) methadone treatment programs.

There were several reasons why the feasibility study relied on a purposive sample of states rather than a random sample of clinics nationwide. First, given the important role of state regulations in the oversight of narcotic addiction treatment programs, it was believed that states would likely have responsibility for MTQAS or a similar performance-monitoring system if it were to become permanently operational. By having states assume full responsibility for day-to-day oversight of data collection and processing, and by involving state staff in the distribution and review of clinic feedback reports, Phase II allowed for a realistic assessment of the operation and utility of MTQAS. Second, a state-based implementation also controlled for variations in regulatory and funding patterns that may have contributed to any systematic differences observed in clinics' structure, operation, and treatment effectiveness from state to state. Third, implementing MTQAS on a statewide basis in a small number of states made it feasible to coordinate the project's data collection needs with information available in each state's management information system (MIS), thereby reducing burden on clinic staff whenever possible. Finally, policymakers at the state level were key constituents for MTQAS, because they saw its potential for assisting them in responding to increasing pressure to develop and maintain outcomes-based monitoring systems for substance abuse services.

The actual data-collection activities were the responsibility of counselors in each of the participating clinics. Three separate forms

were used. For each newly admitted patient, staff completed an initial assessment form requiring about 15 minutes to administer. This form collected demographic information suitable for inclusion in case mix-adjustment analyses, as well as baseline behaviors against which future reassessments could be compared. Counselors subsequently conducted periodic reassessments every 3 months for a patient's first year in treatment and every 6 months thereafter. The periodic reassessments required about 10 to 15 minutes to administer and collected information on patients' self-reported drug use and other behaviors, as well as urine test results abstracted from patient charts. The third instrument was a discharge form that provided information on the date and reason for discharge, as well as most recent urine test results, for patients who left treatment during the feasibility study. A brief summary of the data collection procedures and the variables used in MTQAS is provided in Table 1.

Data collection and processing during the feasibility test required a collaborative effort at several levels. Counselors in each of the clinics conducted patient reassessments and completed paper forms, which were then forwarded to a central office in each state for processing. Each quarter, state staff scanned each clinic's MTQAS forms into a database, checked for scanning and coding errors, resolved problems by contacting clinics for clarification, and compiled a data file. States then forwarded the data files to the research team for analysis. Project staff built analytic files aggregating data from all seven states (averaging 5,000 patient reassessments each quarter), matched the periodic reassessment data with admission profiles obtained in previous quarters, and then prepared individualized clinic feedback reports showing aggregate in-treatment outcomes for patients assessed during the quarter, along with comparisons to other clinics participating in the project.

MEASURING VARIATION IN PROGRAM PERFORMANCE

As noted above, the MTQAS project grew out of concerns about the effectiveness of the federal regulation of methadone treatment and the apparent variability in quality across methadone treatment programs (GAO, 1990b). MTQAS included a feedback reporting mechanism to identify variations in clinic performance. Customized feedback

TABLE 1
Methadone Treatment Quality Assurance System Data Collection Procedures and Variables

Instrument	*Timing of Data Collection*	*Variable Measured*
Initial assessment	At admission	Demographics Use of opiates, cocaine, alcohol, and other drugs in past 3 months (self-report) Injection drug use in past 3 months (self-report) Physical health status Mental health status Hospital stays and emergency room use (past 3 months) Employment status Criminal behavior (past 3 months)
Periodic reassessment	Every 3 months for first year in treatment; every 6 months thereafter	Use of opiates, cocaine, alcohol, and other drugs in past 3 months (self-report) Recent use of opiates, cocaine, and other drugs (urinalysis results) Physical health status Mental health status Hospital stays and emergency room use (past 3 months) Employment status Criminal behavior (past 3 months) Satisfaction with treatment Retention in treatment (days) Optional items (at discretion of participating states): use of benzodiazepines, use of marijuana, methadone dose level, take-home privileges, social support/social networks, HIV risk behaviors
Discharge form	At discharge	Date of discharge Status at discharge (successful completion versus other reasons for discharge) Recent drug use (last urinalysis result)

reports, distributed to the clinics each quarter, provided comparisons between clinics within states and across the entire set of MTQAS clinics. Comparisons were also provided within clinics over time, in the form of graphs depicting quarter-by-quarter results for 17 different in-treatment outcomes. Because length of time in treatment is strongly associated with outcomes, separate analyses were provided for patients in treatment less than 1 year (shorter-term) and patients in treatment for more than 1 year (longer-term). Both unadjusted and case mix-

TABLE 2
Methadone Treatment Quality Assurance System (MTQAS) Quarterly Feedback Report: Sample Page for Hypothetical Clinic

Case-Mix-Adjusted Outcomes for Your Clinic, Quarter 5 (July-September 1997)

	Comparison Group	
	All MTQAS Clinics (N = 2,979 patients)	*Clinics in Your State (N = 679 patients)*
Information from patient records		
Urine test results		
Positive for methadone	a	a
Negative for opiates	a	a
Negative for cocaine	a	a
Retained in treatment	+	+
Patients' self-reported information		
Self-reported drug use		
No heroin use	👎	a
No use of other opiates	a	a
No cocaine use	👎	👎
Injection drug use		
No injection drug use	a	a
Satisfaction with treatment		
Did not need additional services	a	a
Mostly or always treated fairly by staff	a	a

a. Indicates an outcome typical of MTQAS clinics, controlling for case-mix.
+ Indicates a significantly better outcome than expected, given the clinic's case-mix (at $p < .001$).
👎 Indicates a significantly worse outcome than expected, given the clinic's case-mix (at $p < .001$).

adjusted outcomes were provided. Tables reporting case mix-adjusted outcomes illustrated how each clinic's outcomes compared to a statistically computed "average clinic," taking patient characteristics (demographics and status at intake) into account.

Table 2 provides an example page from the MTQAS quarterly feedback report, using case mix-adjusted outcomes. The table is intended to be illustrative, showing outcomes for a hypothetical clinic during the fifth quarter of the feasibility study. In this portion of the feedback report, the clinic's outcomes are compared to all other MTQAS clinics providing data in the quarter and to all other treatment programs in the clinic's state. The outcomes include objective and self-reported patient information (i.e., in-treatment outcomes). Clinics were compared on (a) the proportion of patients whose urine tests indicated use of methadone, and abstention from opiates and cocaine, throughout

the entire reporting quarter; (b) the proportion of patients who were retained in treatment; (c) the proportion of patients self-reporting abstinence from heroin, other opiates, cocaine, and injection drug use; and (d) the proportion of patients reporting satisfaction with the program (in terms of services received and fair treatment by staff).

The quarterly report was designed to allow clinics to identify easily the particular outcomes on which they were performing above or below other clinics. As shown in Table 2, clinic ratings were denoted with a series of symbols to indicate performance that was within the normative range, significantly better than average, or significantly worse than average, with appropriate adjustments for case mix. Very stringent statistical criteria were used to identify outlier clinics (alpha = .001). Thus, a clinic director reading the report shown in Table 2 would see that his or her clinic had significantly better-than-expected outcomes for treatment retention in the quarter and significantly worse-than-expected outcomes for heroin and cocaine use. The director would also note that there was insufficient variation in patients' assessments of how they were treated by staff to permit comparisons with other clinics. (Lack of variation was not an uncommon occurrence on the treatment satisfaction variables, as patient ratings were usually highly skewed toward favorable assessments.) On all other outcomes, this clinic performed on par with other MTQAS clinics.

During the feasibility test, we found that the data collected through MTQAS could effectively be used to differentiate between clinics on various in-treatment outcomes. Each quarter, a small number of clinics had significantly poorer outcomes compared to the group as a whole. Figure 1 portrays the distribution of all MTQAS-participating clinics on one outcome (negative urine tests for opiates) for Quarter 5, with outcomes for shorter-term patients (12 or fewer months in treatment) and longer-term patients (more than 12 months in treatment) shown separately. For this quarter, 68 clinics provided sufficient data to receive a report. Of these 68 clinics, 18 reported that less than 40% of their shorter-term patients tested negative for opiates throughout the quarter, and another 12 clinics reported fewer than 50% testing negative. These were the clinics with the poorer outcomes. Among the best-performing clinics, 3 reported over 90% of their shorter-term patients testing negative for opiates, and another 11 had more than 80% testing negative throughout the quarter.

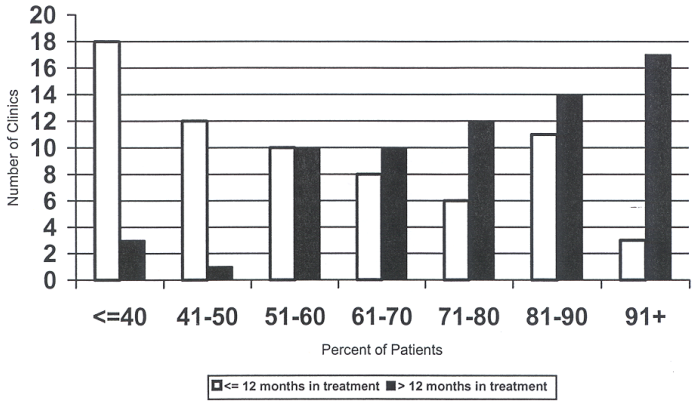

Figure 1: Variation in Outcomes Across Clinics in Quarter 5 (*N* = 69): Negative Urine Tests for Opiates by Time in Treatment

Variability in clinic outcomes was also observed with patients in treatment for more than 1 year. As is typical, longer-term patients had better outcomes: only 4 clinics had fewer than 50% of their longer-term patients consistently testing negative, whereas 31 clinics had at least 81% of their longer-term patients test negative throughout the quarter. This type of analysis is another example of how outlier clinics could be identified for each of the in-treatment outcomes measured in MTQAS.

Identification of outlier clinics was an important component of the MTQAS methodology. The measures were sensitive enough to identify true outliers on any given outcome, as well as to detect significant changes in clinic performance over time. Throughout the feasibility test, a single clinic or set of clinics was rarely identified as a poor performer on more than one or two outcomes in any single quarter. For example, in Quarter 5, four clinics had poorer-than-average outcomes for opiate use (measured using urinalysis data), three had poor outcomes on self-reported opiate use, four had poor outcomes for cocaine use (urinalysis data), and four had poor outcomes on self-reported cocaine use. Fourteen different clinics were represented in these 15 poor-performance scores for the quarter. Thus, the MTQAS methodology was able to differentiate performance on a number of independent dimensions, thereby providing indications of where improvements were most needed in a given clinic. By tracking outcomes over

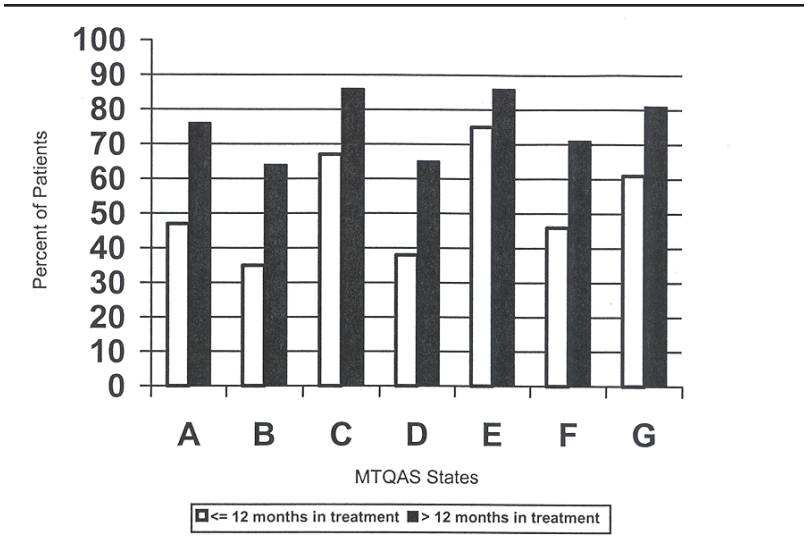

Figure 2: Variation of Outcomes Across States: Negative Urine Tests for Opiates (Quarter 5) by Time in Treatment
NOTE: MTQAS = Methadone Treatment Quality Assurance System.

time, MTQAS was able to identify dimensions on which certain programs were consistently performing above or below average. MTQAS allowed for the identification of poor-performing clinics and the nature of their specific weaknesses; with this information, participating states could then target these clinics for technical assistance, closer monitoring, or other strategies aimed at improving the quality of care provided.

Because MTQAS was designed as a state-based system, it was also possible to assess variations in clinic performance across states. This was an important feature of the system, given the project's goal of providing a potential alternative approach to federal oversight of narcotic addiction treatment programs. Analyses of the data indicated notable differences in outcomes across states, and MTQAS was effective in identifying this variation. For example, Quarter 5 data showed substantial variation across each of the seven states on average clinic outcomes for opiate use as measured by urinalysis results. These state-by-state comparisons are portrayed in Figure 2. (States are not identified.)

As shown, clinics in State B had the lowest percentage of patients testing negative for opiates (averages of 35% of shorter-term patients

and 64% of longer-term patients), whereas clinics in State E had the highest overall outcomes (averages of 75% of shorter-term patients and 86% of longer-term patients). Similar variation among states was found for other outcomes. The ability of MTQAS to detect such differences is important because state regulatory and funding environments can vary greatly, with important influences on the organization and delivery of treatment services at the clinic level. Likewise, there may be important geographic variations in employment, drug availability, and other potential correlates of patient outcomes. Because MTQAS incorporated a state-based design and a standard set of measures, such interstate comparisons are possible. The ability of the system to differentiate among states contributed to its value as a performance-measurement system for narcotic addiction treatment programs.

A particular advantage of MTQAS is that it defined a standardized set of procedures for measuring and analyzing in-treatment outcomes. If clinics share a common methodology for collecting and recording data, this information can be aggregated across clinics within a state, as well as across states. Thus, MTQAS is consistent with ongoing efforts to build national data systems that permit interstate comparisons of treatment effectiveness. In addition, the feedback reporting process provided individual clinics a means of incorporating ongoing analysis of patient outcomes into their continuous quality improvement (CQI) activities. Finally, the feedback reports gave clinics and states concrete evidence of clinic performance relative to other clinics. In this way, the MTQAS system helped to identify performance norms for this important segment of the health care field.

PARTICIPANTS' ASSESSMENT OF MTQAS

Clinic directors, counselors, and state regulatory agencies were the key stakeholders in MTQAS. Counselors had primary responsibility for collecting MTQAS data from their patients at regular (3- and 6-month) intervals. State staff assumed responsibility for data processing. Clinic directors, program staff, and state regulatory staff were the primary audiences for the quarterly feedback reports. Each of these groups responded positively to their participation in the MTQAS feasibility study.

State staff noted several benefits from their participation in the project. Specifically, MTQAS allowed them to (a) establish collaborative working relationships with clinics statewide, (b) increase and improve regular communication with clinics, (c) begin obtaining data from private clinics, (d) respond to the information needs of key stakeholders (e.g., state legislatures), and (e) demonstrate the effectiveness of methadone treatment. Several states also noted that the MTQAS project represented one of the first attempts to gather statewide outcome data for a segment of their substance abuse treatment services system; MTQAS thereby provided a model for future efforts with other substance abuse treatment modalities or other human services. MTQAS also represented the first time that many clinics had been asked to collect in-treatment outcomes on their patients. Whereas substance abuse treatment programs have traditionally relied on patient data gathered at admission and discharge, MTQAS was specifically designed to assess the progress of patients in methadone treatment programs, where retention in treatment is a desired outcome.

Staff from participating states and clinics also provided a number of recommendations for improvements to the system. Specifically, clinicians requested more interpretive guidance in the quarterly feedback reports and brief descriptions of how items were scored or analyzed. In addition, some clinicians suggested that more outcomes (e.g., alcohol use, depression, and anxiety) should be added to the feedback reports. Clinicians also suggested rewording some of the measures, including the response categories for patients' employment status and satisfaction with the treatment received. Additional recommendations for refinements to the system included (a) fully automating the data collection and processing activities, (b) integrating the MTQAS data into clinics' administrative databases and state management information systems, and (c) adding a component to track patients' status after discharge. Notably, clinicians rarely called for reductions in the scope of the system. In fact, most of the suggested refinements stemmed from clinicians' genuine interest in learning more about the data and their desire for information to facilitate the use of the findings for quality improvement purposes.

LESSONS FROM THE FEASIBILITY TEST

For the research team, MTQAS provided lessons about factors that are critical to the successful implementation of any performance measurement system, particularly systems designed to be used collaboratively by regulatory or funding agencies, substance abuse treatment providers, and researchers. At a strategic level, leadership from participating states, treatment provider associations, or both, is a prerequisite for success. End-user support is essential to establish a sense of ownership of the data among participating facilities. At the same time, developers of performance measurement systems must be able to recognize and respond to the temporal and regional variability in clinics' operating environments (including funding, regulatory, and market conditions) that may affect the implementation and operation of the system.

Within participating clinics, one or more staff members must be identified to take responsibility for the day-to-day operation of the system, and they must have the organizational support necessary (e.g., time, resources) for effective oversight. From a technical standpoint, clinics must find creative ways to integrate data collection into their ongoing activities; with MTQAS, clinics had to create their own reminder systems to ensure completion of patient reassessments on the appropriate schedule. Finally, technical expertise in data management at the state level is essential to the effective functioning of a system such as MTQAS.

MTQAS provided several examples of the benefits of collaboration between the research and practice communities. At the same time, the project highlighted the need for better communication between the two groups. The primary example of this disconnect was the quarterly feedback reports. Although the reports were intended to serve as tools for clinics' CQI efforts, their potential was not always realized among the clinics participating in the feasibility study. Efforts were made to produce reports that were user friendly, but clinicians reported difficulty interpreting the data. This difficulty stemmed from a lack of understanding of how particular measures were scored and computed, as well as confusion about the case mix-adjustment methodology underlying key sections of the report. A *Guide to the Quarterly Feedback Reports*, produced early in the project, helped alleviate this problem somewhat by providing clinicians with a source of information

about how the reports were generated. But for MTQAS to function as a quality improvement tool, clinicians had to not only understand the reports, but translate the findings into action. Feedback received from participating clinics indicated that more focused technical assistance may be needed to achieve this goal.

Perhaps the most important lesson learned from the feasibility test was the value of a central data clearinghouse. The strength of MTQAS, and a necessity in any performance measurement system, was its ability to provide comparative data for all participating clinics. In the feasibility test, clinics submitted paper forms to a central state office; the states in turn scanned the forms into a data file, which was forwarded to the research team. The project staff then aggregated data from all seven states and built quarterly data files within which individual patients could be linked over time. This central data clearinghouse was essential for producing interstate data comparisons, and it provided a sizable set of patient and clinic records against which to compare participating programs.

The data clearinghouse was funded by NIDA (and, for two additional quarters, by the Center for Substance Abuse Treatment) for the duration of the feasibility study. With the end of the project, the centralized data analysis capabilities were disbanded. Without a data clearinghouse, data analysis and reporting must be undertaken by oversight agencies within states. However, this likely would limit the comparative base to only those clinics under the purview of a given state. Massachusetts has developed its own MTQAS-like system to monitor the performance of its clinics, and it continues to provide quarterly feedback reports (including case mix-adjusted comparisons) to clinics throughout the state. However, many other states lack the personnel and analytic resources necessary to implement and maintain such a system.

At present, the narcotic addiction treatment field does not have a national performance monitoring system. Three current movements in the field may build on the features of MTQAS or benefit from the lessons of the feasibility test. Efforts are under way at the federal level to implement an accreditation-based oversight system for methadone treatment programs. Because accreditation standards require the collection and use of patient outcome data for performance measurement, an accreditation system could provide the impetus for the development of national or state databases for benchmarking purposes. The

Center for Substance Abuse Treatment has encouraged the incorporation of MTQAS data elements into commercially available computer software packages for patient record-keeping, but a central data repository does not now exist. The development and maintenance of a central data clearinghouse as part of such a system would greatly enhance its market appeal. Finally, there is continued state and federal interest in national substance abuse treatment-outcome studies and the development of standardized data collection systems permitting interstate comparability. Such interest is consistent with the clearinghouse concept that was so central to MTQAS.

CONCLUSIONS

The MTQAS project was successful in achieving all five of its intended goals. During the initial design phase, a reliable, valid, and clinically useful set of performance indicators was defined and tested (Goal 1). A case mix-adjustment methodology was developed and tested to ensure that apparent between-clinic differences were attributable to treatment programming, and not to the characteristics of patients served; this methodology permitted fair comparisons of clinic performance (Goal 2). Activities undertaken during the feasibility test demonstrated that it was possible to implement a performance measurement system in real-world, community-based methadone treatment programs and identified a number of conditions necessary for successful implementation (Goal 3). Feedback reports were developed and distributed each quarter, allowing each clinic to compare its outcomes to all other MTQAS clinics and to itself over time (Goal 4). Finally, as efforts at the federal level continue to move toward an accreditation-based oversight system for methadone treatment, MTQAS has become recognized as a useful tool for meeting accreditation standards pertaining to performance measurement and CQI (Goal 5).

The MTQAS project achieved its goals largely through collaboration among federal agencies and through a partnership between the research and practice communities. Throughout the development and testing of MTQAS, input was sought from a diverse set of constituents including researchers, representatives from federal and state agencies involved in methadone treatment, national professional organizations,

and, most notably, the treatment providers who were the intended users of the system. Developing the final design for MTQAS was an iterative process that involved obtaining feedback and recommendations from these groups at each stage. As a result of this process, MTQAS in able to respond to the needs of states and clinics and can serve as a model for future developments in the field of performance measurement.

The NIDA-funded MTQAS feasibility test concluded in mid-1998. Since that time, several of the participating states and clinics have adapted or adopted it for permanent use. Indeed, the strongest evidence of the value of MTQAS is the degree of interest shown by the narcotic addiction treatment field. At present, Massachusetts has permanently incorporated MTQAS into its substance-abuse-treatment outcome monitoring system and has required the participation of its methadone treatment programs via amendments to its regulations. The state of North Carolina has incorporated the MTQAS measures into its central data system. And the state of Georgia is planning to continue the feedback-reporting process with all of its clinics. In addition, the research team has responded to numerous requests for information about MTQAS from treatment providers and researchers, located primarily in the United States but also in Canada, New Zealand, and the United Kingdom. At present, the Center for Substance Abuse Treatment continues to explore ways to provide information and technical assistance to states and clinics wishing to implement the MTQAS methodology.

In addition to achieving the specific goals of the feasibility test, MTQAS offers additional realized and potential benefits to the field that extend well beyond the scope of the project. Through the use of in-treatment outcomes, MTQAS responds to the unique structure of methadone treatment programs, where retention in treatment is a desired outcome. As a result, clinics using MTQAS have access to information that other outcomes monitoring systems often set aside in favor of pre-post treatment designs. In addition, MTQAS provides a mechanism for differentiating between clinics using a standard set of measures and accounting for differences in patient severity; as such, it serves a valuable quality-assurance function for states and other agencies. As a proven system for measuring and monitoring outcomes of methadone treatment programs, MTQAS could be useful for justifying the benefits of treatment dollars spent, achieving compliance with

state licensure or other requirements, and developing a set of norms for treatment outcomes. Finally, because it is consistent with several key accreditation standards and goals, MTQAS can be a valuable tool for improving the quality of care in narcotics addiction treatment programs nationwide.

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