Keys to Quality: Conducting a Performance Improvement Project for Behavioral Health in Managed Care Based on the Principals on QISMC

September 2002

Prepared by:

Dow Wieman, Ph.D., H. Stephen Leff, Ph.D.
Amy DiRamio, Sarah Witham
the Evaluation Center@HSRI

Eric Goplerud, Ph.D., Elise Young, MSW
Substance Abuse and Mental Health Services Administration
This Toolkit is one of a series of such kits commissioned by the Evaluation Center@HSRI. The Center is supported by a cooperative agreement with the Center for Mental Health Services, Substance Abuse and Mental Health Services Administration. The mission of the Evaluation Center is to provide technical assistance related to the evaluation of adult mental health systems change.

The Center offers seven programs all of which are designed to enhance evaluation capacity. The Consultation Program, which provides consultation tailored to the needs of individual projects; the Topical Evaluations Networks and Web Program, make use of multiple methods of communication via the internet; the Toolkit Program, which provides evaluators with tested methodologies and instruments related to specific topics; the Materials Program, an evaluation materials program which supplies evaluators with original papers on selected topics and identifies relevant literature in the field; the Conferences and Training Program designed to enhance the evaluation skills of producers and consumers of evaluations; Multicultural Program focusing on evaluation issues related to culturally, racially and ethnically diverse populations; and the Knowledge Assessment and Application Program, focuses on filling the gap between knowledge development and knowledge application activities.

The Toolkits are designed to provide evaluators with complete descriptions of methodologies and instruments for use in evaluating specific topics. Based on information from a needs assessment study conducted by the Center and on feedback from evaluators in the field, we have identified a number of important topics that evaluators are frequently interested in examining. Expert consultants have been engaged to review the background of these topics and to compile Toolkits that provide evaluators with state-of-the-art evaluation techniques to use in their own work.

The Evaluation Center@HSRI is also interested in supporting “user groups” for its Toolkits. These groups will provide a forum for Toolkit users to share their expertise and experiences with the Toolkits. If you would like to participate in a user group, please complete the form enclosed and return it to the Evaluation Center@HSRI.

We hope Keys to Quality: Conducting a Performance Improvement Project for Behavioral Health in Managed Based on the Principals of QISMC will be helpful to persons conducting or reviewing behavioral health QI projects in managed care.

H. Stephen Leff, Ph.D.
Director

Virginia Mulkern, Ph.D
Associate Director
Keys to Quality:
Conducting a
Performance Improvement Project
for Behavioral Health
in Managed Care
Based on the Principles of
QISM C

Funded by:
Office of Managed Care and the Center for Mental Health Services
Substance Abuse and Mental Health Services Administration
# Table of Contents

**Introduction** .......................................................... 1

Conducting a Performance Improvement Project for Managed Behavioral Health Care Based on the Principles of QISMC .................................................. 1

Key Constituency Representative Input .................................... 2

Project Context ..................................................................... 2

Organization of the Workbook .............................................. 3

Guide to Using the Workbook .............................................. 5

Note to Planners and Implementers ........................................ 5

Note to Administrators and Regulators .................................... 5

Table 1: Standards and Recommendations for Behavioral Health Quality Improvement Projects ......................................................... 6

**Phase I: Planning Your QI Study** ....................................... 9

**Step 1** Involve Consumers and Other Stakeholders in the Quality Improvement Process ......................................................... 9

1.1: Process should encourage, and create opportunities for enrollee participation. (Corresponding QISMC Standard: 1.4.1.4) ................................................................. 9

Case Illustration 1.1: A State Agency Involves Multiple Stakeholders in Report Card Design ......................................................... 10

**Step 2** Select a Topic for the Quality Improvement Project .......... 11

2.1: Public payers and MCO should contribute to topic selection (Corresponding QISMC Standard: 1.3.1.2) ................................................................. 11

Case Illustration 2.1: Substance Abuse Agency Seeks to Reduce The Number Of Patients Leaving Substance Abuse Programs Against Medical Advice (AMA) ................................................................. 11

2.2: Topics should be identified through continuous data collection and analysis (Corresponding QISMC Standard: 1.4.1.1) ................................................................. 12

Case Illustration 2.2: MBHO Recognizes Need to Study Depression in Persons with Myocardial Infarction ................................................................. 12

2.3: Topics should be selected systematically and prioritized to achieve greatest benefit for enrollees (Corresponding QISMC Standard: 1.4.1.2) ................................................................. 13

2.4: Selection process should take into account prevalence of condition, sociodemographic characteristics and health risks of consumers, and interest of consumers in the service to be addressed (Corresponding QISMC Standard: 1.4.1.3) ................................................................. 14

Case Illustration 2.3 and 2.4: Welfare Agency Chooses A QI Study Topic On The Basis Of Prevalence And Enrollee Needs: Ancillary Services For Low-Income Women with Substance Abuse Problems ................................................................. 14
Step 3  Public Payers and MCO’s Select Performance Indicators and Measures that are Scientifically Sound and Relevant to Important Impacts 

3.1: Public payers and MCO should contribute to selection of performance indicators (Corresponding QISMC Standard: 1.3.1.2) ....................................................... 16

Case Illustration 3.1: State Medicaid Agency, Health Plans and PRO Collaborate in HEDIS-Type Study of Treatment for Adult Depression. .................................................. 16

3.2: Performance indicators should be objective, clearly defined, evidence based (Corresponding QISMC Standard: 1.4.2.1) ................................................................. 17

Case Illustration 3.2: A State Substance Abuse Agency And A Provider Group Select Performance Indicators To Measure The Rate Of Patients Leaving Treatment Against Medical Advice (AMA). .................................................. 17

3.3: Indicators should measure changes in health status, functional status, satisfaction or valid process of care proxies for these outcomes (Corresponding QISMC Standard: 1.4.2.3) ................................................................. 18

Case Illustration 3.3: State Mental Health Agency Evaluates Impact Of Transfer From Hospital To Community on Consumer Functioning And Satisfaction ........................................... 18

3.4: Process measures should be used as proxies for outcomes only when validity has been established in literature or by expert consensus (Corresponding QISMC Standard: 1.4.2.2) ................................................................. 19

Case Illustration 3.4: Public-Academic Collaboration Establishes Guidelines For Public-Sector Pharmacological Treatment Of Consumers With Schizophrenia .................. 19

3.5: Some indicators should allow comparison with other organizations or benchmarks (Corresponding QISMC Standard: 1.4.2.4) ................................................................. 20

Case Illustration 3.5: Managed Care Organization Uses Standardized Measures to Compare Provider Groups ................................................................. 20

3.6: Performance indicators are identified through continuous data collection and analysis .............................................................................................................. 21

Case Illustration 3.6: An MCO’s Ongoing Monitoring of Utilization Data Reveals Area for Future QI Project ................................................................. 21

Step 4  Choose an Appropriate Research Design and Data Collection ...................................................................................................................... 22

4.1: The improvement should be reasonably attributable to interventions undertaken by the organization (Corresponding QISMC Standard: 1.4.4.3) ................................................................. 22

Case Illustration 4.1: Researchers Study Effect of QI Program on Recognition, Treatment of Depression in Primary Care .............................................................................................................. 22

4.2: Sampling methodology should validly reflect all practitioners and enrollee groups (Corresponding QISMC Standards: 1.4.4.2, 1.4.3.2.1) ................................................................. 24

Case Illustration 4.2: Consumer Satisfaction in a National Managed Behavioral Health Organization .............................................................................................................. 24

4.3: Sample should be randomly selected from total population for whom the indicator applies. (Corresponding QISMC Standard: 1.4.2.1) ................................................................. 24

Case Illustration 4.3: Impact of Disseminating Quality Improvement for Treatment of Depression in Primary Care Practices: Sampling from Managed Care Organizations .............................................................................................................. 24
4.4: Baseline measure of organization performance should be established and change measured continuously for at least one year after desired performance level is achieved. (Corresponding QISMC Standard: 1.4.3.1) 25

Case Illustration 4.4: Veteran’s Administration Monitors Outcomes of Intensive Case Management Program for an Extended Period. 25

4.5: Same measurement methodology should be used for baseline and follow-up assessment. (Corresponding QISMC Standard: 1.4.4.2.2) 26

Case Illustration 4.5: Psychiatric Hospital Measures Changes in Symptomatology. 26

4.6: Project design should allow for comparison before and after improvement effort, and in some cases for comparison with other organizations. 27

Case Illustration 4.6: Health Plan Surpasses Organizational Benchmark for Continuity of Care. 27

4.7: Identification of subjects should factor in changes in enrollment status. 28

Case Illustration 4.7: State Medicaid Agency Surveys Enrollees with Severe Mental Illness on Quality of Life, Health Status and Satisfaction. 28

4.8: A power analysis should be conducted prior to data collection. 29

Case Illustration 4.8: Managed Care Organization Tests Preventive Intervention with Children in Families with Parental Depression. 29

4.9: Project hypotheses and data analysis plans should be articulated prior to data collection. 30

Case Illustration 4.9: Team of State Substance Abuse Agency Staff and Providers Develop Intervention for Consumers Leaving Treatment Against Medical Advice. 30

4.9.1: If survey data are collected and some potential subjects are non-English speaking, appropriate translation methods should be employed. 31

Case Illustration 4.9.1: Improving the Detection of Mental Disorders in Primary Care. 31

4.9.2: Timing of data collection should be based on knowledge or theory of timing of effect of intervention on indicator. 32

Case Illustration 4.9.2: Community Mental Health Center Implements Clinical Pathways for Treatment of Persons with Severe Mental Illness. 32

4.9.3: If longitudinal designs are used, appropriate methods should be used for reducing attrition. 33

Case Illustration 4.9.3: HMO Implements QI Project to Address Readmission Rates for Psychiatric Hospitalizations. 33

Phase II: Collecting Data

Step 5 Collect Data 41

5.1: If data are collected from consumers, the project should be reviewed by a human subjects committee or IRB. 41

Case Illustration 5.1: A State Agency Takes Steps to Protect Human Subjects In a Study of Substance Abuse Treatment for Women. 41
5.2: If consumer satisfaction data are collected, data collection should be clearly separated from service ......................................................... 42
Case Illustration 5.2: Quality Improvement for Depression Treated in Primary Care: Collection of Service Data ......................................................... 42

5.3: If individual enrollee data are collected, each enrollee should be given information about his/her rights, and data should only be collected for persons who give their informed consent ......................................................... 43
Case Illustration 5.3: Obtaining Consent from Consumers to Participate in Study of the Treatment of Depression in Primary Care ............................................ 43

5.4: Appropriate methods to protect confidentiality and security of data should be employed .................................................................................. 44
Case Illustration 5.4: Protecting Confidentiality in a Consumer Satisfaction Survey ................................................................. 44

5.5: Staff involved in data collection should be adequately trained ................................................................................................. 45
Case Illustration 5.5: Health Plan Staff Training in the Implementation Phase of a New Quality Monitoring Program .................................................. 45

5.6: If the project entails large-scale data collection, a pilot test should be conducted .................................................................................. 46
Case Illustration 5.6: Pilot Study Assesses Impact of Disseminating Quality Improvement for Depression to Managed, Primary Care Practices .......................... 46

Phase III: Analyzing and Interpreting Data ................................................................. 49

6.1: Reliability and validity of data should be assessed based on systematic and ongoing collection of information and should meet scientific standards (Corresponding QISMC Standard: 1.4.3) ........................................... 49
Case Illustration 6.1: Hospital Uses Profiling Data to Improve Quality of Care for Bipolar Disorder ........................................................................... 49

6.2: Interventions should result in demonstrable improvement (Corresponding QISMC Standard: 1.4.4) ................................................................. 50
Case Illustration 6.2: Quality Improvement Project Reduces Length of Stay in a Partial Hospital Program ............................................................. 50

6.3: Tests of statistical significance should be appropriate to the project design and data source (Corresponding QISMC Standard: 1.4.4.2) .................. 51
Case Illustration 6.3: Analysis of Client Satisfaction Data by an MCO ........................................................................................................................ 51

6.4: Improvement should be sustained at least one year after improvement was demonstrated (Corresponding QISMC Standard: 1.4.5) ......................... 52
Case Illustration 6.4: HMO Addresses Problem of Long Waiting Times for Behavioral Health Appointments ................................................................. 52

6.5: Approaches to missing data should be established ................................................................................................................................. 53
Case Illustration 6.5: Methods for Dealing with Missing Data in a Large Study of Multiple Primary Care Clinics ........................................................................ 53
If survey data are collected, bias due to non-response should be assessed and, to the extent possible, statistical adjustments should be made to correct for these biases.  

Case Illustration 6.6: Dealing with Non-response to a Satisfaction Survey in a Medicaid Managed Care Plan.  

Appropriate statistical adjustments should be made to account for differences in the characteristics of individuals measured at baseline and at follow-up.  

Case Illustration 6.7: Controlling for Pre-Post Site Differences Between Consumers in a Study Quality Improvement Interventions in Primary Care.  

Appropriate risk adjustment methodologies should be used when comparing results with benchmarks or other organizations, or when comparing providers within the organization.  

Case Illustration 6.8: State Agency Compares Contracting Provider Organization on the Basis of Post-Discharge Symptom Severity.  

If improvement is not achieved, the organization, consumers and other stakeholders should attempt to understand the cause of the failure and plan an alternative intervention or additional data collection.  

Case Illustration 6.9: Follow-up in a Study of Antidepressant Therapy in an MCO.  

Phase IV: Providing Feed Back for Service Improvement  

Step 7 Feedback Data to Service Providers to Improve Services  

Data collection and analysis should be integrated with planning and implementing improvement strategies  

Case Illustration 7.1: Psychiatric Outcome Study Identifies Additional Quality Improvement Activities.  

Results of QI studies are disseminated to providers and consumers in a variety of methods.  

Phase V: Evaluating your Performance Improvement Program  

Step 8 Assess the Burden and Benefit of the Quality Improvement Project  

Upon completion, projects should be re-evaluated and monitored for at least one year.  

Case Illustration 8.1: Improving the Detection of Mental Disorders in Primary Care.  

Bibliography  

Appendices
Introduction

**Keys to Quality: Conducting a Performance Improvement Project for Behavioral Health in Managed Care Based on the Principles of QISMC**

This workbook is designed to provide technical assistance to persons conducting or reviewing behavioral health quality improvement (QI) projects in managed care. For this purpose, it presents a set of criteria defining exemplary behavioral health QI practices and case illustrations of these criteria. The workbook was developed by the Evaluation Center@HSRI for the Substance Abuse and Mental Health Services Administration (SAMHSA).

The increasing use of managed care strategies in the organization and financing of behavioral health services has introduced rapid changes in public service systems. Most states have already implemented mandatory managed care programs for TANF/AFDC Medicaid populations. Increasingly, states and local authorities are also implementing such programs for persons receiving SSI/SSDI, who comprise the majority of Medicaid enrollees with severe and persistent mental illness and severe substance abuse disorders. This growth of managed care has heightened already existing concerns about the quality of public behavioral health services.

One strategy to address these concerns is the federal government’s requirements for managed care providers of Medicare services to conduct quality assurance and improvement activities, and their recommendations to the states for similar oversight of Medicaid providers. The Health Care Financing Administration’s (HCFA) most recent guidance for managed care providers regarding QI activities is found in the Quality Improvement System for Managed Care (QISMC), a set of standards for QI programs and activities.

One major component of QISMC is a requirement to conduct Performance Improvement Projects, defined as “an initiative by the organization to measure its own performance. . . undertake system interventions to improve its performance, and follow-up on the effectiveness of those interventions” (HCFA, 1998, p.4). HCFA goes further to specify a set of standards for minimally acceptable Performance Improvement Projects, addressing both process and methodological issues. *It should be emphasized that projects described in this workbook are intended to illustrate the standards as outlined here and do not necessarily fulfill current or future HCFA requirements.*
This project seeks to complement the QISMC standards by 1) Conceptualizing the QISMC standards as steps in a performance improvement project, 2) Providing examples from actual projects that illustrate how QISMC standards and recommendations for performance projects from other sources can be addressed and 3) Incorporating additional criteria to define exemplary quality improvement projects in behavioral health.

Project Goals and Products

The project was planned to have one major end result—a workbook consisting of step-by-step guidance on how to conduct an exemplary behavioral health QI project with illustrations of each step from QI studies. Each step will be selected to highlight one or more specific attribute of an exemplary QI study (e.g., sampling methodology, feedback to service providers, etc.). This workbook seeks to complement the QISMC standards by: 1) conceptualizing the QISMC standards as steps in a performance improvement project; 2) providing examples from actual projects that illustrate how QISMC standards and recommendations for performance projects from other sources can be addressed; and 3) incorporating additional criteria to define exemplary quality improvement projects in behavioral health.

These materials will be distributed in both paper and electronic forms and, resources permitting, in one or more training conferences in exemplary behavioral health QI practice based on the written materials, to be developed. Both the written materials and the training are anticipated to be directed to a multi-organizational audience including but not limited to MCOs, peer review organizations (PROs) and external quality review organizations (EQROs), community based service providers, HCFA staff, and state behavioral health and Medicaid authority staff.

Key Constituency Representative Input

The goal of this step in the process of developing the workbook was to solicit practical feedback from representatives of likely user groups on the utility of the case studies and recommendations on ways to increase the impact of the project findings. Specifically, we presented 3-5 completed case studies to a group of persons representing SAMHSA, HCFA, PROs and EQROs, MCOs, community behavioral health service provider organizations, and state behavioral health and Medicaid authorities. The list of persons consulted is contained in Appendix A. Their recommendations were invaluable in preparing this workbook.

Project Context

The Evaluation Center@HSRI (http://www.hsri.org/) is a national technical assistance center for the evaluation of mental health systems change, supported by the Center for Mental Health Services (CMHS, http://www.mentalhealth.org/) of the Substance Abuse and Mental Health Services Administration (SAMHSA, http://www.samhsa.gov/). This project was initiated by the SAMHSA Office of Managed Care (http://www.samhsa.gov/mc/) and is being conducted under the guidance of Mady Chalk, Ph.D., and Eric Goplerud, Ph.D. of SAMHSA. Elise Young of
SAMSHA and Chris Heldman, formally of SAMHSA, also provided guidance for this project. Crystal Blyler, Ph.D., of the CMHS Community Support Program Branch, is the Government Project Officer for the Evaluation Center@HSRI.

**Organization of the Workbook**

This workbook is organized as phases in a quality improvement project suggested by the QISMC standards and supplemented by recommendations from other sources. Each phase consists of several steps.

**Phases**

I. Planning your QI Study (Steps 1-4)

II Collecting Data (Step 5)

III Analyzing and Interpreting Data (Step 6)

IV Feeding Back Findings for Service Improvement (Step 7)

V Evaluating your Performance Improvement Program (Step 8)

**Steps**

These steps are grouped into the five phases of a quality improvement project.

Step 1. Involve Consumers and Other Stakeholders in the Quality Improvement Process

Step 2. Select a Topic for the Quality Improvement Project

Step 3. Select Performance Indicators and Measures that Address Important Impacts and have Desired Scientific Properties

Step 4. Choose an Appropriate Research Design and Appropriate Data Collection Methods

Step 5. Collect Data

Step 6. Analyze and Interpret Data

Step 7. Feed Back Data to Service Providers for Service Improvement

Step 8. Assess the Burden and Benefit of the Quality Improvement Project for the Purpose of Planning Future Projects

First and foremost, we selected steps based on our readings of the QISMC standards. For each step, we first present a rationale. The rationale is intended to explain the reasons for the step and to describe activities necessary to carry it out. Following the rationale, we present one or more important considerations for that step. Considerations under each step are indicated by key symbols to signify their importance in the quality improvement process. Each of these con-
We recognize that resource constraints may limit the degree to which performance improvement projects can incorporate all of the features of research and evaluation. Nevertheless, we believe that noting these features may prompt some projects to incorporate some desired elements of research and evaluation that would otherwise be overlooked.

Because performance improvement projects, as described by the QISMC standards, share some of the intentions of research and evaluation projects, we include some additional considerations based on research and evaluation sources. These are also indicated by key symbols, but differentiated from QISMC standards by the identification as “added recommendation.” We recognize that resource constraints may limit the degree to which performance improvement projects can incorporate all of the features of research and evaluation. Nevertheless, we believe that noting these features may prompt some projects to incorporate some desired elements of research and evaluation that would otherwise be overlooked.

Key considerations for each step in the improvement project are each accompanied by an illustrative example. For the illustrations, we searched for examples or activities that we judged best, or at least better, practices from actual behavioral health performance improvement projects, or comparable activities. These illustrations should not be considered perfect in all respects, but examples of best practices for the standard or recommendation that they depict. When we were unable to find an example of a standard or recommendation from an actual behavioral health project, we considered examples from physical health care. If no example could be found, no case illustration is provided. It is our intent that this be a continual project; as appropriate illustrations appear, they will be integrated into the product.

The QISMC process involves terms and acronyms unique to the Health Care Financing Administration. These terms and acronyms are decoded in the body of this workbook. However, for the convenience of the reader, these terms and acronyms are also listed alphabetically in Appendix C. Appendices D-F contain topics, instruments, and benchmarks suited to performance improvement projects as described in this workbook. Appendix G contains a compendium of the studies used for the case illustrations throughout this document.

A complete list of the criteria defining exemplary behavioral health quality improvement projects can be found in Table 1. The chart is organized by phase, under each phase are the appropriate step(s), followed by a reference to a QISMC standard or a recommendation that falls under that step. The corre-
sponding QISMC Standard is noted in the right hand column. Items that do not have a corresponding QISMC standard are recommendations that we have added from other performance measurement sources (i.e., *Performance Measurement Using the Consumer-Oriented MHSIP Report Card*).

**Guide to Using the Workbook**

This workbook is intended to serve a broad range of users but especially those responsible for planning and implementing performance improvement programs and administrators and regulators responsible for reviewing performance improvement programs.

**Note to Planners and Implementers**

For persons planning and conducting performance improvement program projects, the workbook provides step-by-step guidelines for completing a program. We suggest reading through the workbook before starting a project and then following these steps in the order they are presented. For each step, suggestions and examples for achieving quality projects are presented. At the end of each phase, there is a checklist for reviewing whether recommended steps have been completed. Appendix G contains a checklist for all steps. It should be noted that projects described in this workbook are intended to illustrate the standards as outlined here and do not necessarily fulfill current or future HCFA requirements.

**Note to Administrators and Regulators**

Administrators and regulators can use this toolkit as one source of information for reviewing and assessing projects. The toolkit can provide information on steps that might have been taken and methods that might have been employed for each step in a performance improvement project. The checklist described above may be used in this context as an assessment guide. At the end of each phase, we have also included pages for readers to record their notes.

This document, including the checklist, is provided on computer disk as well as in hard copy. This permits users to tailor the information to reflect local considerations, and electronically complete checklist.
### Table 1: Standards and Recommendations for Behavioral Health Quality Improvement Projects

<table>
<thead>
<tr>
<th>Domain/Criterion</th>
<th>Corresponding QISMC Standard or Added Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHASE I: Planning your QI study</strong></td>
<td></td>
</tr>
<tr>
<td><strong>▲ Step 1: Involve consumers and other stakeholders in the quality improvement process</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 Process provides opportunities for and seeks enrollee participation</td>
<td>Corresponds to QISMC 1.4.1.4</td>
</tr>
<tr>
<td><strong>▲ Step 2: Select a topic for the quality improvement process</strong></td>
<td></td>
</tr>
<tr>
<td>2.1 Public payers and MCO contribute to topic selection</td>
<td>Corresponds to QISMC 1.3.1.2</td>
</tr>
<tr>
<td>2.2 Topics are identified through continuous data collection and analysis</td>
<td>Corresponds to QISMC 1.4.1.1</td>
</tr>
<tr>
<td>2.3 Topics selected systematically and prioritized to achieve greatest benefit for enrollees</td>
<td>Corresponds to QISMC 1.4.1.2</td>
</tr>
<tr>
<td>2.4 Selection process takes into account: Prevalence of condition or need for service, Enrollee demographic characteristics and health risks, Interest of consumers in the aspect of care or services to be addressed</td>
<td>Corresponds to QISMC 1.4.1.3</td>
</tr>
<tr>
<td><strong>▲ Step 3: Select performance indicators and measure that address important impacts and have desired scientific properties</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Public payers and MCO contribute to selection of performance indicators</td>
<td>Corresponds to QISMC 1.3.1.2</td>
</tr>
<tr>
<td>3.2 Performance indicators are objective, clearly defined, evidence based</td>
<td>Corresponds to QISMC 1.4.2.1</td>
</tr>
<tr>
<td>3.3 Indicators measure changes in health status, functional status, satisfaction or valid proxies</td>
<td>Corresponds to QISMC 1.4.2.3</td>
</tr>
<tr>
<td>3.4 Process measures are used as proxies for outcomes only when validity has been established in literature or by expert consensus</td>
<td>Corresponds to QISMC 1.4.2.2</td>
</tr>
<tr>
<td>3.5 Some indicators allow comparison with other organizations or benchmarks</td>
<td>Corresponds to QISMC 1.4.2.4</td>
</tr>
<tr>
<td>3.6 Performance indicators are identified through continuous data collection and analysis</td>
<td>Added Recommendation</td>
</tr>
<tr>
<td><strong>▲ Step 4: Choose an appropriate research design and appropriate data collection methods</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 The improvement is reasonably attributable to interventions undertaken by the organization</td>
<td>Corresponds to QISMC 1.4.4.3</td>
</tr>
<tr>
<td>4.2 Sampling methodology validly reflects all practitioners and enrollee groups</td>
<td>Corresponds to QISMC 1.4.3.2, 1.4.3.2.1</td>
</tr>
</tbody>
</table>
### PHASE II: Collecting Data

#### ▲ Step 5: Collect data

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>If data are collected from consumers, the project is reviewed by a human subjects committee or IRB</td>
<td>Added Recommendation</td>
</tr>
<tr>
<td>5.2</td>
<td>If consumer satisfaction data are collected, data collection is clearly separated from service provision</td>
<td>Added Recommendation</td>
</tr>
<tr>
<td>5.3</td>
<td>If individual enrollee data are collected, each enrollee is given information about his/her rights, and data is only collected for persons who give their informed consent.</td>
<td>Added Recommendation</td>
</tr>
<tr>
<td>5.4</td>
<td>Appropriate methods to protect confidentiality and security of data are employed</td>
<td>Added Recommendation</td>
</tr>
<tr>
<td>5.5</td>
<td>Staff involved in data collection are adequately trained</td>
<td>Added Recommendation</td>
</tr>
<tr>
<td>5.6</td>
<td>If project entails large-scale data collection, a pilot test is conducted</td>
<td>Added Recommendation</td>
</tr>
</tbody>
</table>

### PHASE III: Analyzing And Interpreting Data

#### ▲ Step 6: Analyze and interpret data

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Reliability and validity of data are assessed and meet scientific standards</td>
<td>Corresponds to QISMC 1.4.3</td>
</tr>
<tr>
<td>6.2</td>
<td>Interventions result in demonstrable improvement</td>
<td>Corresponds to QISMC 1.4.4</td>
</tr>
</tbody>
</table>
6.3 Tests of statistical significance are appropriate to the project design and data source

6.4 Improvement sustained at least one year after improvement is demonstrated

6.5 Approaches to missing data are established

6.6 If survey data are collected, bias due to non-response is assessed and, to the extent possible, statistical adjustments are made to correct for these biases

6.7 Appropriate statistical adjustments are made to account for differences in the characteristics of individuals measured at baseline and at follow-up

6.8 Appropriate risk adjustment methodologies are used when comparing results with benchmarks or other organizations, or when comparing providers within the organization

6.9 If improvement is not achieved, the organization, consumers and other stakeholders attempt to understand causes of failure and plan alternative intervention or additional data collection

**PHASE IV: Feeding Back Findings for Service Improvement**

▲ Step 7: Feedback data to service providers, consumers and other stakeholders to improve services and choice

7.1 Data collection and analysis is integrated with planning and implementing improvement strategies

7.2 Results of QI studies are disseminated to providers and consumers in a variety of methods

**PHASE V: Evaluating your Performance Improvement Program**

▲ Step 8: assess the burden and benefit of the quality improvement project for the purpose of planning future projects

8.1 Upon completion, projects are re-evaluated and monitored
Phase I
Planning Your QI Study

**STEP 1**

Involve Consumers and Other Stakeholders in the Quality Improvement Process

**Rationale**

Consumer participation in the quality improvement process helps to insure that it will maintain a proper focus on recipients of care, and that it will have credibility. A broad representation from throughout the system of care is necessary because “the work of individuals and organizational units is interconnected and quality improvement focuses attention on the ways that people and organizations work together.” Providers are important because they are critical to obtaining information necessary for an effective QI program. Top-level administrators provide the authority to allocate needed resources and the leadership to obtain support from other stakeholders (Guidelines 1.4.1.4; NCQA p. 10; MHSIP p. 9).

1.1: Process should encourage, and create opportunities for enrollee participation.

(Corresponding QISMC Standard: 1.4.1.4)

The QISMC standards point out the need to provide an opportunity for enrollee input into the priorities of the QAPI program. Inclusion of enrollees (often referred to as consumers in the mental health arena) as well as other stakeholders contributes to the relevance and credibility of the process.

Possibilities could include enrollee representation on a quality assurance committee or subcommittees or routine inclusion of QAPI issue on the agenda for a general enrollee advisory committee. The QISMC standards specifically address this issue for particular focus areas such as mental health and substance abuse stating that priorities in these areas should be developed in consultation with users of these services or their families. (QISMC Standards, pg. 19-20).
Case Illustration 1.1: A State Agency Involves Multiple Stakeholders in Report Card Design

The MHSIP Policy Group initiated the report card project in the fall of 1993 with funding support from the National Center for Mental Health Services (SAMHSA, PHS, USDHHS). Anticipating the development of a national managed care report card under the administration’s plan for healthcare reform, the Committee recognized a need to begin planning its mental health component. As events developed, the primary audience for the report card has been individual states proceeding in their own healthcare reform efforts. (Toolkit on Performance Measurement Using the MHSIP Consumer-Oriented Report Card, The Evaluation Center@HSRI).

Exemplary Activity: Providing for Consumer Participation

A task force was formed to develop the consumer-oriented report. This group included a wide array of participants including recipients of mental health services, family members, federal and state mental health and substance abuse officials, academic experts in services research, and providers of mental health services. The purpose of including these groups was to gain the perspectives from a variety of stakeholders in the development of the report card. Over an eighteen-month period the task force formally and informally solicited the views of the groups from which its membership was drawn.

At the May 1996 annual conference the MHSIP Consumer–Oriented Report Card received an enthusiastic reception from the MHSIP community. Several states have implemented their own versions of the report card. Some states have also replicated the MHSIP report card development process, convening stakeholder groups for discussions of values and concerns in the public mental health system and review proposed performance indicators and measures.

Discussion:

Finding persons who can adequately represent stakeholders is a critical step in a quality improvement process. A representative of a stakeholder group must have a genuine understanding of the concerns of the group’s members. One strategy for identifying persons qualified to represent consumers is to work with consumer advocacy organizations and consumer provider groups, which now exist in many localities. Lists of these groups may be obtained from state agencies responsible for behavior health and from CMHS and SAMHSA. Additionally, although not indicated by this Case Illustration, it is important to assess whether the particular consumers (or other stakeholders) included in the process are truly representative of the entire service recipient population.
STEP 2

Select a Topic for the Quality Improvement Project

Rationale

Selection of topics based on input from multiple stakeholder groups, including both public payers and the MCO, is recommended for several reasons. First, if diverse stakeholders are able to reach consensus on a topic, it is necessarily one that is deemed important by these groups and probably has a large potential impact on quality of care. Second, a project that was initiated by collaboration among stakeholders is more likely to be credible to a diverse audience, and thus may be more able to stimulate improvement.

In most cases, a topic should be an issue that affects a significant portion of the organization’s enrollees (or a specified sub-population) and should have a significant impact on enrollee health, functional status, or satisfaction (Guidelines, 1.4.1). Meeting this standard will be more likely if enrollees participate in the selection process and if topics are identified using data that are routinely collected and analyzed. Projects should focus on areas where improvement can be affected by the organization. Identifying these areas and obtaining support for the proposed intervention thus requires a broad range of representation by all stakeholders.

2.1: Public payers and MCO should contribute to topic selection (Corresponding QISMC Standard: 1.3.1.2)

HCFA, in QISMC Standard 1.3.1.2, specifically calls for public payers (i.e., HCFA and state Medicaid authorities for Medicaid managed care, and HCFA alone for Medicare) to collaborate with the MCO in selecting topics for QI.

Case Illustration 2.1: Substance Abuse Agency Seeks to Reduce The Number Of Patients Leaving Substance Abuse Programs Against Medical Advice (AMA)

Exemplary activity: Public Payers and MCO’s participate in Selecting Topics

In one state substance abuse service system, the state agency was seeking a topic for a quality improvement project. Agency representatives met with an organization of service providers and together they settled on the topic of understanding and reducing AMA rates. Their choice was based on four concerns: 1) Clients leaving AMA causes programs to increase their volume of admissions to maintain a full census, and the admission process is the most labor intensive and costly component of acute treatment; 2) High AMA and high admission rates makes it difficult for pro-
grams to manage their contracts with the state; 3) Frequent discharges and admissions disrupt program milieu; and 4) The literature indicates that clients who drop out of treatment have poor outcomes. Lowering the AMA rate, therefore, would lead to better patient outcomes as well as improved contract utilization. They concluded that the most effective means of addressing this issue would be to form an interagency quality improvement team with responsibility for designing and carrying out a quality improvement project.

The group, named the Acute Treatment Services Against Medical Advice (ATS AMA) Team, met 13 times over the next 16 months to plan and implement an improvement strategy. The team conducted a survey of staff and patients to gain a fuller understanding of the problem and developed a pilot intervention program. The result of these activities was a fuller understanding of the AMA problem and the information necessary to develop a full-scale intervention for a subsequent QI project.

**Discussion:**

Simply bringing stakeholders together to develop a QI project will not guarantee that a productive topic will be chosen. Prior to any discussion, project leaders should present stakeholders with a preliminary list of proposed topics, along with information about the significance of each. Based on this information, the group can then prioritize the proposed topics.

In this case the topic selected was one in which the agency and the MCO were both interested, for somewhat different reasons. The two organizations may wish to make this process more systematic, for example by having each generate a list of proposed topics based on other QISMC standards such as identification through continuous data collection (QISMC 1.4.1.1) and prevalence of the condition (QISMC 1.4.1.3), then jointly prioritizing these topics. Agreement on a topic might then involve modification and refinement of the project.

**2.2: Topics should be identified through continuous data collection and analysis**

*(Corresponding QISMC Standard: 1.4.1.1)*

---

**Case Illustration 2.2: MBHO Recognizes Need to Study Depression in Persons with Myocardial Infarction**

A national managed behavioral health organization (MBHO) managing the behavioral health services of several Mid-Atlantic HMOs through “carve-out” contracts had established an ongoing Prevention Program to address issues that might affect various at-risk groups of enrollees. One of the early projects in this
program was to assess the rate at which depression was detected in the primary care setting and subsequently treated, a topic that was chosen because of the widespread documentation of this problem in the research literature.

**Exemplary Activity: Identifying Topics on the Basis of Data Collection**

In order to monitor the effectiveness of this project, the MBHO continued to conduct an ongoing analysis of data related to the incidence and prevalence of depression, along with a variety of other psychiatric and medical illnesses. Over time they found that the QI Depression Project was generally successful in improving the detection and treatment rate for depression, but they also observed that the incidence of depression continued to be very high among patients with coronary artery disease, and especially those with a Myocardial Infarction. Knowing that detection of depression in general was an issue that required ongoing monitoring and that unrecognized or inadequately treated depression in this medically ill population could seriously worsen their medical course, they acted to develop a Prevention Program project specifically targeting persons with coronary artery disease with the goal of improving the early identification, referral and treatment of clinical depression.

The proposed program is expected to be of significant benefit to the 600-720 members of the at-risk subgroup among the 366,000 enrolled members.

**Discussion**

Any ongoing data collection activity has the potential to support quality improvement projects, but only if resources for data analysis are available as well. Without ongoing data analysis, quality improvement processes cannot be proactive in identifying important topics. Continuous data analysis also results in better quality data.

2.3: **Topics should be selected systematically and prioritized to achieve greatest benefit for enrollees**

*(Corresponding QISMC Standard: 1.4.1.2)*

(Case Illustration in Section 2.4 below)
2.4: Selection process should take into account prevalence of condition, sociodemographic characteristics and health risks of consumers, and interest of consumers in the service to be addressed (Corresponding QISMC Standard: 1.4.1.3)

Case Illustration 2.3 and 2.4: Welfare Agency Chooses A QI Study Topic On The Basis Of Prevalence And Enrollee Needs: Ancillary Services For Low-Income Women with Substance Abuse Problems

In a state that pioneered the development of a back-to-work welfare reform initiative, officials overseeing the program contracted with a consulting firm to convene a series of focus groups around the state to assess the effect of the program and monitor issues and problems. Participants in these groups represented a range of perspectives and interests: program enrollees, front-line service providers, and representatives of advocacy groups, political leaders, and members of the general public.

The results of these focus groups generally indicated that the program was proceeding as planned, with one exception: participants in the groups expressed concern about one group of people who seemed to be failing in the program, and in fact, were often worse off than before: low-income women with substance abuse problems.

Exemplary Activity: Identifying a topic on the basis of prevalence, need and potential benefit.

The head of the agency designated the Director of Quality Improvement to follow up and authorized funds to address the issue. The Director of QI approached the consulting firm to explore the problem further and devise an appropriate response. The consultant’s first step was to conduct a review of the literature to better understand the nature and extent of the problem of substance abuse among low-income women. She found several recent national studies indicating that low-income women with substance abuse problems have more severe socioeconomic, medical and psychological problems than substance abusing men or non-substance abusing women.

The consultant’s next step was to request a report from the agency’s MIS Department which showed indeed that a considerable proportion of enrollees who had not succeeded in the back-to-work program were women with substance abuse problems. She then conferred with staff members of the state’s mental health and substance abuse agency, and with several local experts in the field about recommended approaches to the problem. After she had received a variety of these, and further reviewed the literature, she presented the directors of the agency and the QI pro-
gram with several alternatives, which were the most widely supported. In the absence of a clear consensus, the agency officials settled upon the one that appeared most feasible and consistent with the agency’s mission: this was a program to provide ancillary services for women with substance abuse problems who are seeking to return to work. Before fully committing the agency’s resources to this approach, however, they decided to conduct a pilot study to assess the cost-effectiveness of such a program.

Discussion

Quality improvement projects can be thought of as having an expected benefit. This benefit will be a function of how many persons will benefit from the project, to what extent, and with what perceived importance or utility. Comparing candidate projects along such dimensions is facilitated by providing and recording information in systematic ways, and forms for this purpose should be developed. Methods for eliciting group judgments such as Delphi techniques serve this purpose as well.

The importance of the topic selected by the agency in this Case Illustration was demonstrated by evidence from the focus groups, supported by reports in the literature. If the agency wished to insure that this topic represented the most prevalent problem, and the greatest need of enrolled consumers, it could do this by analyzing data for consumer characteristics, utilization patterns, etc. Then, if this topic was chosen over some other in part for reasons of expediency, this factor would be made explicit.

**STEP 3**

**Public Payers and MCO’s Select Performance Indicators and Measures that are Scientifically Sound and Relevant to Important Impacts.**

**Rationale**

Step 2 involved the selection of topics. With that accomplished, appropriate indicators must be selected. By indicators, here we mean single items, or instruments composed of multiple items, that measure the processes or outcomes of care. Indicators should measure change in health status, functional status or satisfaction (or serve as valid proxies for these outcomes). Indicators should be objective, clearly defined and based on current knowledge. The selection process should consider the feasibility of collecting the required data. Finally, all stakeholders should be involved in the selection of indicators to ensure that
they reflect diverse opinions and values about how the system should function (Guidelines, 1.4.2, NCQA p. 25; MHSIP, p. 20).

Appendix E contains a selection of multi-item instruments. The most extensive information available on single-item indicators can be found at the web site of the Center for Mental Health Service Quality

3.1: Public payers and MCO should contribute to selection of performance indicators
(Corresponding QISMC Standard: 1.3.1.2)

Case Illustration 3.1: State Medicaid Agency, Health Plans and PRO Collaborate in HEDIS-Type Study of Treatment for Adult Depression.

The Medicaid Agency in a Mid-Western state had just received approval of a HCFA 1115 “Research and Demonstration Waiver” under which it would contract with several MCO’s to manage the health care of a large proportion of the state’s Medicaid population. Agency staff responsible for this initiative observed that quality of behavioral health services was a common problem area in similar programs elsewhere. Accordingly they decided to include this as one of the first topics for the program’s Quality Improvement program.

Exemplary Activity: Participation of Public Payers

The study was developed using a collaborative approach involving the health plans, the Department of Health Services (the state Medicaid agency), and the PRO as members of a study group. The study group discussed professional standards of care, developed study goals and objectives and assisted in designing an appropriate collection tool. As an outcome of the discussion, the group settled on the following three quality indicators:

- Percentage of consumers with suicide risk assessment
- Percentage of consumers on medication with a dosage in the therapeutic range
- Percentage of patients educated about diagnosis, prognosis, and treatment of depression.

When the study was completed the PRO reviewed the results by an interdisciplinary team of physicians, nurses biostatisticians and administrators, then released in draft format to the Medicaid agency. After reviewing the drafts, the Medicaid agency approved them for distribution to the plans for comment. The PRO notes that valuable input from both the State and health plans was incorporated into the development of final plan-specific reports.
**Discussion**

As in Case illustrations 2.1 and 2.3, a more formal process of each stakeholder group proposing a list of preferred performance indicators, then working to develop a consensus would insure that a full range of possibilities was considered and that the basis for selection was explicit.

**3.2: Performance indicators should be objective, clearly defined, evidence based** (Corresponding QISMC Standard: 1.4.2.1)

**Case Illustration 3.2: A State Substance Abuse Agency and a Provider Group Select Performance Indicators to Measure the Rate of Patients Leaving Treatment Against Medical Advice (AMA).**

The QI team of a state agency met with a group of contracting providers to discuss ways to improve patient outcomes and increase compliance with performance-based contracts. The discussion eventually focused on the problem of patients leaving treatment against medical advice (AMA). The agency representatives and providers agreed that evidence indicated that outcomes for this group are poorer than those for persons who complete treatment. Providers also observed that patients leaving AMA make it more difficult to meet one of the state’s contractual requirements, that inpatient substance abuse services maintain a certain volume of services. Patients leaving inpatient units AMA result in greater patient turnover, which reduces the volume of services because of the additional time required to process new admissions.

To address this problem the state agency and five Acute Treatment Service (ATS) providers formed a collaboration known as the ATS AMA Team.

**Exemplary Activity: Process for Defining Objectives**

The team first considered a variety of interventions that might reduce the number of patient’s leaving AMA, but the team did not identify any for which there was sufficient evidence that it could achieve this goal. Instead, they settled upon a set of success indicators, which they agreed would be both objective and achievable, and would provide an understanding of the problem to develop an intervention further along. After considering a number of alternatives they eventually settled on the following:

- Conduct a survey of staff about their attitudes, opinions and suggested solutions for reducing the number of patients who leave acute treatment services AMA
- Conduct a survey of clients regarding their reasons for leaving treatment AMA and conditions that would enable them to complete treatment.
- Conduct a pilot study of an intervention designed to reduce premature discharges and evaluate the results of that intervention.

**SOURCE:** Acute Treatment Services AMA Team Final Report. The Quality Improvement Collaborative, Health and Addictions Research, Inc.

This illustration is intended to demonstrate a specific step in the overall quality improvement process, not to serve as a guide for the conduct of such a process generally.
Discussion

Like any other measures in the medical, behavioral or social sciences, measures of service quality and performance must be operationally defined so that independent observers make similar observations or measurements of the same processes. Sometimes this will require “reducing” measures to operations that seem to diminish the meaning of the processes being studied. Like other areas of science, quality improvement projects often necessitate compromises between meaningfulness and measurability.

3.3: Indicators should measure changes in health status, functional status, satisfaction or valid process of care proxies for these outcomes (Corresponding QISMC Standard: 1.4.2.3)

Case Illustration 3.3: State Mental Health Agency Evaluates Impact Of Transfer From Hospital To Community on Consumer Functioning And Satisfaction

A state mental health agency planned an initiative that would involve downsizing the state hospital system and transferring a number of long-stay patients into community placements developed specifically for this program.

To address concerns from both inside and outside the agency that consumers discharged into the community might receive lower quality care there, the state issued a Request for Proposals to conduct an independent evaluation of the program. The winning proposal presented a design that would provide data representing multiple perspective in order to examine outcomes in multiple domains.

Data collection would occur at three points in time: a baseline period shortly before discharge, a “placement point” within a few weeks after discharge, and a longer term period after six months in the community. Sources of the data would be the consumers themselves completing a survey provided by trained interviewers, members of the consumers’ families also completing a survey, and professional staff in the hospital and the community.

Exemplary Activity: Choosing Indicators to Measure Consumer Outcomes

The consumer survey used modified versions of established instruments, supplemented by original questions relating to specific concerns. It included questions about the individual’s satisfaction with services (humaneness and competence of staff, appropriateness of services), subjective view of quality of life and life satisfaction (living situation, health, personal safety, etc.), degree of empowerment, and medical and dental services needed and received.
Family members completed a survey similar to that for consumers, with additional questions about their relationship with the consumer’s mental health providers and the extent of their worry about the consumer.

The staff provided information about the consumer’s need for mental health and support services and amount of these services received, and about the consumer’s functioning in a variety of areas (physical functioning, personal care, work skills, etc.).

When complete, the evaluation showed that most aspect of the community placement were equal to, or better than, the hospital, allowing the agency to demonstrate the success of the initiative.

Discussion

Reliable and valid measures of health status, level of functioning, consumer satisfaction and quality of life are available in the behavioral health field. These measures differ in areas such as format, number of dimensions and burden of use. Appendix E contains a selection of recommended instruments. Assistance in identifying more specialized instruments is available from the Evaluation Center @ HSRI (http://www.hsri.org/) and its listserve, OUTCMTEN.

3.4: Process measures should be used as proxies for outcomes only when validity has been established in literature or by expert consensus (Corresponding QISMC Standard: 1.4.2.2)

Case Illustration 3.4: Public-Academic Collaboration Establishes Guidelines For Public-Sector Pharmacological Treatment Of Consumers With Schizophrenia

The Texas Medication Algorithm Project (TMAP) is a large-scale quality improvement project designed to reduce the amount of variation in prescribing practices for consumers treated within the public mental health system. The project targets the treatment of three conditions: schizophrenia, major depressive disorder, and bipolar disorder. The project involved four phases.

Exemplary Activity: Process Measures as Proxies for Outcomes

Phase I of the project involved the creation of the algorithms through consensus conferences. The guidelines that were developed (in Phase I) were based on scientific evidence and expert clinical consensus. The products that were created at the end of the conferences were specific stepwise graphical sequences (algorithms). These algorithms illustrated the order and method to use various psychotropic medications for each of the above mentioned conditions. Adherence to these algorithms as a quality measure is now being explored in Texas.
Phase II of the project was a feasibility trial; Phase III is an ongoing prospective comparison of the clinical outcomes and economic costs and benefits of using these medication guidelines with “treatment as usual” and Phase IV is the implementation of these algorithms in the “real world” of the clinics and hospitals.

**Discussion**

In the behavioral health area, relatively few service measures have been validated as proxies for outcomes. The TMAP and the Schizophrenia PORT are two such efforts. More should be forthcoming due to the increased emphasis on identifying evidence-based practice.

### 3.5: Some indicators should allow comparison with other organizations or benchmarks

(Consorting QISMC Standard: 1.4.2.4)

**Case Illustration 3.5: Managed Care Organization Uses Standardized Measures to Compare Provider Groups.**

In the early 1990’s, a large privately-owned managed care company (MCO) in the Western United States, responding to increasing market competition and demands from purchasers and regulatory agencies for empirical evidence of quality and efficiency, began to plan a large-scale Quality Improvement project. This project would eventually lead to an overall redesign of the mental health and substance abuse system, with the aim of improving consumer access, enhancing quality and consistency of services, and raising consumer’s level of satisfaction. A first step in this program was to conduct a focused outcomes study that would provide the organizational experience and baseline data needed for further development.

The study, carried out on three of the organization’s 20 plus clinics, involved assessment of pre-and post-treatment psychological symptomatology, as well as pre-treatment risk-adjusters.

**Exemplary Activity: Allowing for Comparison with Other Organizations**

Because a primary goal of the study was to establish baseline data for additional QI projects, the organization was careful to select standardized measures that would permit comparison with other systems and other programs within their own system. To measure general health status and functioning they chose an instrument that is most widely used, the Medical Outcomes Study Short Form 36 (SF-36). In order to make the results easily interpretable, scores on the Physical Component Summary
and the Psychological Component scales were expressed as linear T-scores, normed to a non-patient reference population. T-scores were then characterized by having a mean of 50 and a standard deviation of 10 in the reference population on which they were normed.

The directors of the study conclude: “the study achieved its original goal of providing descriptive baseline data, which served as a snapshot of the state of the clinical practice”

Discussion

In Appendix F, we provide a guide to locating benchmark data. For many of the measures that will be used in quality improvement projects, benchmark data are not yet available. However, a variety of organizations are maintaining increasing amounts of this information, and investigators should pursue the contacts provided for updated information on what is currently available.

3.6: Performance indicators are identified through continuous data collection and analysis

Item 2.2 requires that topics should be identified through continuous data collection and analysis. Similar considerations apply in the process of selecting performance indicators.

Case Illustration 3.6: An MCO’s Ongoing Monitoring of Utilization Data Reveals Area for Future QI Project

In the early 1990’s one of the nation’s largest health plans recognized a need to redesign its mental health and substance abuse treatment services in response to increased market competition and demands from purchasers and regulators for empirical evidence of quality and efficiency. The plan chose to implement this redesign through a QI framework as the best means of achieving long-term benefits.

To establish the groundwork for this undertaking, the plan contracted with a research organization to conduct a large-scale outcomes study that would produce baseline data to serve as a basis for program planning and subsequent studies and to gain organizational experience in outcomes assessment.

The study recruited eligible subjects at the time of their initial evaluation visit over a 6-month period. Those who consented were assessed at baseline with a battery of self-report measures indicating socio-demographic and clinical characteristics, functioning and health status.
Exemplary activity

Using computerized administrative databases, the study was able to monitor participants’ utilization of mental health services and medication, and to link this information to responses to items on the survey. This activity yielded immediate benefits by revealing areas for more focused quality improvement projects, such as a high rate of persons not returning after initial outpatient visits despite high levels of impairment.

Although the scale of this study was too large to be maintained on an ongoing basis for quality improvement purposes, it provided necessary baseline information and organizational experience required for ongoing QI monitoring.

STEP 4

Choose an Appropriate Research Design and Data Collection Method

Rationale

For a quality improvement project to produce results that are valid and meaningful, the design must ensure that the appropriate types and numbers of enrollees are included (Guidelines, 1.4.3, NCQA, p. 29). The types should be appropriate to benefit from the intervention, and the number sufficient to show the effectiveness of the intervention if, in fact, there is any. Research and evaluation texts also recommend that the intervention is adequately implemented and that sufficient time is allocated for the intervention to take effect. Our goal is not to provide a substitute for these texts but merely to remind readers of the concerns most relevant to quality improvement projects. Anyone requiring additional assistance may contact the Evaluation Center@HSRI or request assistance from its listserves supporting discussion of outcomes measurement (OUTCMTEN) and Managed Behavioral Health Evaluation MBHEVAL) as described on the HSRI website (http://www.hsri.org/).

4.1: The improvement should be reasonably attributable to interventions undertaken by the organization

(Corresponding QISMC Standard: 1.4.4.3)
Case Illustration 4.1: Researchers Study Effect of QI Program on Recognition, Treatment of Depression in Primary Care

Concerned about apparent lack of concrete benefits from federally-funded mental health services research, congress directed a leading funding agency to focus on prevention as a priority research agenda. In response to this directive, agency officials determined that the topic offering the greatest potential for near term gains was the detection and treatment of depression in primary care, and issued a program announcement identifying this as a priority for the year ahead.

The largest and most comprehensive project funded under this program was a study conducted in 46 primary care clinics operated by six private managed care organizations. One component of this study was to determine the effects of formal quality improvement approaches on the detection, treatment and outcomes of depression in primary care.

Exemplary Activity: Insuring that the Interventions are Source of Perceived Improvements

The clinics were matched and randomly assigned to usual care (mailing of practice guidelines) or to QI programs involving institutional commitment to the program, training of nurses to provide clinician and patient education, and access to specialist staff for medication follow-up and psychotherapy. Indicators for the potential effects of the QI program were processes of care (e.g. extent counseling or medication for depression) and health outcomes (e.g. probability of depression, quality of life) for more than one thousand patients identified as having depressive symptoms at the beginning of the study. Measurement was at baseline, 6 and 12 months.

Patients in the QI and control groups did not differ on any of the indicators at baseline, but those in the QI group received significantly more appropriate treatment and demonstrated better health outcomes at both the six and twelve month points. The randomization of clinics and baseline measurement increased the likelihood that these improvements were the result of the intervention.

Discussion

Random assignment, as demonstrated by this illustration, is one of two key design features required optimally to infer causality. The second is some measure of implementation of the intervention. Researchers and evaluators are increasingly stressing the importance of measuring the degree to which interventions are implemented as planned. These indicators are referred to as implementation checks, fidelity measures and program measures. Such measures have been developed for a number of services such as Assertive Community Treatment. Where no measures have been established, guides for developing them are also available.
4.2: Sampling methodology should validly reflect all practitioners and enrollee groups
(Corresponding QISMC Standards: 1.4.4.2, 1.4.3.2.1)

Case Illustration 4.2: Consumer Satisfaction in a National Managed Behavioral Health Organization

Like most of its counterparts this large organization was required to collect client satisfaction data to comply with standards of accreditation groups, regulatory agencies, contracts and for marketing purposes. The organization recognized, however, that this information would be beneficial for quality improvement purposes if an appropriate methodology were available. Accordingly, they contracted with an independent research company to conduct their consumer satisfaction surveys in a way that they might be utilized in QI projects.

Exemplary activity
The research team developed a survey measuring satisfaction on a variety of dimensions, including client-therapist relationship, and experiences with access, availability and coordination of services. The survey form was mailed to a stratified random sample of consumers in 16 different geographic areas over a six-month period.

Statistical analysis of the results allowed the team to develop a limited set of key predictors of satisfaction on which practitioner and provider groups may vary, and which may serve as targets for focused QI interventions.

Discussion:
Readers will have no problem locating much excellent literature on survey design and implementation. What is important to note here is that the rules for obtaining adequate sizes and representative samples are applicable to managed care quality improvement projects as they are to other research and evaluation activities.

4.3: Sample should be randomly selected from total population for whom the indicator applies.
(Corresponding QISMC Standard: 1.4.4.2.1)

Case Illustration 4.3: Impact of Disseminating Quality Improvement for Treatment of Depression in Primary Care Practices: Sampling from Managed Care Organizations

A group of researchers funded by NIMH and the MacArthur Foundation sought to determine the best means for disseminating treatment guidelines for depression into primary care settings. The study was conducted in 46 primary care clinics in six public and private managed care organizations. The primary
hypothesis of the study was that QI interventions will improve quality of care and health-related outcomes over a follow-up year. The interventions offer different supplemental resources, either nurses support use of antidepressant medications or practice therapists trained in psychotherapy for depression.

**Exemplary Activity:**

Six managed care organizations were recruited for the study. The selection basis was made to be diverse in geography, organization, and to over sample Mexican Americans. The organizations consisted of a staff and network model, multispeciality group practices, rural, managed, public health clinics. Further, the sample had both prepaid and managed fee for service coverage. This sample also included both Medicare and Medicaid covered individuals. One of the sites included uninsured patients as well. Clinics were clustered into matching groups of three based on patient demographics, clinician specialty, and distance to mental health providers. Randomization was then utilized to assign experimental condition.

The results of this study found that when a structured QI program was implemented, quality of care, clinical outcomes, mental-health related functioning, and retention in employment of depressed patients improved over a year.

**4.4: Baseline measure of organization performance should be established and change measured continuously for at least one year after desired performance level is achieved.**
*(Corresponding QISMC Standard: 1.4.3.1)*

**Case Illustration 4.4: Veteran’s Administration Monitors Outcomes of Intensive Case Management Program for an Extended Period.**

In 1987, the Veteran’s Administration (VA) initiated a regional demonstration program to study the effectiveness of a case management model for veterans with serious mental illness who were identified as “high hospital users.” The directors of the project projected a study period of two years, during which they would collect and analyze data from a broad range of outcome domains—service utilization, cost, level of functioning, satisfaction and fidelity of the program to the model (Assertive Community Treatment).

**Exemplary Activity**

At the end of the two year period for the demonstration study, the VA determined that the program had been successful overall and should be continued. Because this was a high-risk group being served and there was a possibility that negative effects might appear only over the long-term, the project directors elected to maintain the quality monitoring process by continuing to collect a subset of the same data with a modified design.
Data from the extended period indicated that first, the effect on hospital use and functioning occurred early on and remained stable; second, perceived well-being dropped off somewhat after the early period; and third, much of the overall reduction in symptom severity occurred only in the later period. On the basis of this information, the directors were able to focus further quality improvement projects on particular aspects of the program.

**Discussion**

There are two aspects to the question of the appropriate timeframe for measuring performance. The first, demonstrated here, is when to expect a quality improvement project to produce results and the second (discussed under Case Illustration 4.9 below) concerns how much time is required to demonstrate that the change is sustained.

This study is most exemplary in its extended follow-up period. It illustrates the importance of considering what impacts are expected from an intervention and allowing sufficient time for these to manifest themselves.

4.5: Same measurement methodology should be used for baseline and follow-up assessment.

(Corresponding QISMC Standard: 1.4.4.2.2)

Case Illustration 4.5: Psychiatric Hospital Measures Changes in Symptomatology

A private psychiatric hospital, which had traditionally treated a mix of privately and publicly insured patients on a fee for service basis with minimal utilization review, was now being required by insurers to demonstrate the effectiveness of treatment. These requirements were enacted through new contracts between the hospital and the insurers, in which this demonstration was included as a condition for renewal.

To fulfill this requirement, the hospital designed a study that would address the question, “Do patients receiving in-patient services on this psychiatric unit experience reduced symptomatology over the course of their treatment?”

For this study, the director of the hospital’s QI program chose a quasi-experimental, one-group pretest-posttest design, with measurement at admission and immediately following discharge:
Exemplary Activity:

1. Each patient was given the Symptom Checklist 90-Revised within three days of his/her admission, assessing recent psychiatric symptomatology.
2. Data were recorded regarding the patient’s age, gender, marital status, length of stay, and psychiatric diagnosis.
3. Each patient participated in an inpatient treatment program.
4. Each patient was re-administered the Symptom Checklist 90-Revised within three days of his/her discharge.

“This study illustrates a practical effort by social workers to integrate simple evaluative efforts into routine clinical services provided by mental health facilities, efforts consistent with managed care, the demands of third-party-payers, and the profession’s in the direction of empirically based practice.” The results of this study did show that the group of patients significantly improved relative to their admission status.

Discussion:

The study fulfilled the requirement for a simple “before and after” pre-experimental design using the same measure for baseline and follow-up assessment. However, it is important to note that the demonstration of treatment effectiveness would have been more conclusive had the design incorporated a control group of comparable persons receiving a different type of treatment, or none at all. Although most quality improvement studies may not be able to carry out randomized assignment, when the major question is the effectiveness of an intervention every effort should be made to employ comparison groups and statistical controls for group differences.

4.6: Project design should allow for comparison before and after improvement effort, and in some cases for comparison with other organizations

Case Illustration 4.6: Health Plan Surpasses Organizational Benchmark for Continuity of Care

The ongoing QI process of a moderately-sized group health plan, part of a national managed care organization, indicated that the in-house behavioral health department consistently fared less well than other departments. An example was the HEDIS measure of continuity of care in the treatment of depression, indicated by the percentage of persons hospitalized having a follow-up out patient visit within thirty days of discharge. This plan’s rate of 80 percent was significantly lower than other plans in the organization. In response, the behavioral health providers proposed that this be addressed through a quality improvement project.
Exemplary activity:

As a benchmark for the project, the QI team settled upon the highest rate of any plan within the organization, which was 90 percent of patients hospitalized for depression seen within 30 days of discharge, and set as the goal of this project to surpass this with a rate of 92 percent. By using standard HEDIS methodology the team was able to be sure that their performance could be compared to that of other plans in the organization.

After identifying the primary barriers to improvement, the team made several changes in the system for tracking and monitoring patients that helped to identify those who were due for an appointment and tracking those who missed them. These modifications resulted in significant improvement the first year, and with additional interventions to improve appointment scheduling, the department achieved its goal in the second year.

Discussion

When one organization is compared to others for benchmarking purposes, it is like comparing groups that have been formed without random assignment. Such comparisons are most meaningful when statistical methods are used to control for initial group differences.

4.7: Identification of subjects should factor in changes in enrollment status

Case Illustration 4.7: State Medicaid Agency Surveys Enrollees with Severe Mental Illness on Quality of Life, Health Status and Satisfaction.

The Medicaid agency of an Eastern Seaboard state desired to know how changes in the health care system were affecting persons with severe mental illness who were enrolled in the Medicaid program. Through a collaboration with an academic research center, the agency sampled from Medicaid files to identify a group of persons who had received treatment for severe mental illness over the course of one year.

Exemplary activity

Two years after the data collection period, the research team approached all of those in the sample who had been continuously enrolled in Medicaid and asked to respond to questions related to current health status, quality of life and satisfaction with services.
The results were then compared to data on persons with schizophrenia generally to determine how those in the state’s program were being affected. By restricting the study group to those continuously enrolled, the teams was more confident that the results reflected experience with the Medicaid program.

**Discussion**

If policies permit enrollees to enter and leave behavioral health plans at will, significant switching can occur. “Intent to treat” analyses may disregard such switching. However, this will result in inaccurate findings if significant switching takes place and switching plans is an important outcome. If the study in this Case Illustration included a comparison group of persons who disenrolled during the period, it would be able to assess the possibility that continuous enrollment may be related to consumer variables or to the effect (positive or negative) of services received.

4.8: A power analysis should be conducted prior to data collection

**Case Illustration 4.8: Managed Care Organization Tests Preventive Intervention with Children in Families with Parental Depression**

A large managed care company, observing increasing utilization of services by children with emotional and behavioral problems was seeking a cost-effective prevention program. They sought out a consultant with expertise in this area, who identified one risk factor that occurs frequently among their enrollees—families in which a parent has an affective disorder. The consultant suggested that the most appropriate cost-effective intervention would be a psychoeducation program to help a child cope with the parent’s illness. Following from this recommendation the QI team set out to develop an intervention consisting of a videotape presentation for families in which there was an adult with depression.

**Exemplary Activity**

Data previously collected by the consultant had produced mixed results, both significant and insignificant. The findings reflected a moderate to large effect size (r>.35). A power analysis indicated that 80 subjects would be sufficient to detect between and within group differences (power>.80) The QI Team then proceeded with recruitment until forty subjects were enrolled for the experimental and control groups.
Discussion

Analyses have shown that many studies have too few subjects to detect any but the largest impacts. The consequence of such “underpowered” studies is that moderately effective interventions are mistakenly judged to have no effect. Power analysis indicates the number of subjects necessary to detect an intervention of a specified size. Methods for power analysis can be found in standard statistical texts.

4.9: Project hypotheses and data analysis plans should be articulated prior to data collection.

Case Illustration 4.9: Team of State Substance Abuse Agency Staff and Providers Develop Intervention for Consumers Leaving Treatment Against Medical Advice

A State substance abuse agency was concerned about what appeared to be a high rate of consumers leaving treatment against medical advice (AMA). This concern was based on reports in the literature that persons leaving AMA tended to have poorer outcomes. Moreover, providers reported that the higher volume patient turnover resulting from short-stay AMA discharges made it more difficult to comply with contractual requirements. To address this issue, agency staff and provider representatives formed a collaborative team with the mission of researching and implementing an appropriate intervention.

Exemplary Activity:

The first step of this team was reach agreement on common definition of AMA discharges. Their next task was to develop a hypothesis about the cause of the problem. Based on a review of the literature, they hypothesized that clients are more likely to remain in treatment when they have: individual attention, continuity of staff, opportunities to participate in small groups, and education about the treatment process.

The team then held a series of focus groups to obtain data that would lead them to confirm or reject these hypotheses, and design their intervention accordingly.

Discussion

It is a rule of science that more confidence can be placed in the confirmation of a hypothesis that is made prior to data analysis. Data analyses, particularly those involving many statistical tests performed on large data sets, can result in spurious findings. Quality improvement studies should test hypotheses. Findings
from “exploratory” analyses should be recognized as such and treated more cautiously than those from hypothesis testing analyses.

4.9.1: If survey data are collected and some potential subjects are non-English speaking, appropriate translation methods should be employed

Case Illustration 4.9.1: Improving the Detection of Mental Disorders in Primary Care

A publicly owned health care system serving primarily a multi-cultural low-income Medicaid and uninsured population contracted with the state Medicaid agency to operate a prepaid health plan, providing integrated medical and behavioral health services. Recognizing that untreated mental health and substance abuse problems result in increased utilization and costs, the management team of the new plan asked the Quality Management department to develop a method for screening for these problems in the primary care clinics. The QM department responded with a brief self-report screening instrument which was introduced into the clinics to be administered by the intake staff. In the first year, more than 1,500 primary care patients were screened, and almost 40 percent were identified as having a mental health or substance problem.

Exemplary Activity:
In the first phase of this program the instrument was available only for patients who could read English. Once the screening process was established, the instrument is being translated to serve the large segment of the patient population that is Spanish-speaking. This involves "back translation" to ensure that the meaning of each question is maintained. It also requires consideration of regional differences in languages, for example a Latin American Spanish translation that differs from a Puerto Rican Spanish translation.

Discussion
The changing demographics of the U.S. population, combined with the increased emphasis on consumer-centered services, has heightened awareness of the importance of “culturally competent” services. As this is a relatively new field, evidence-based standards are still mainly in the developmental phase. For information on developments as they occur, readers should consult the Evaluation Center @HSRI web page (http://www.hsri.org/)


This illustration is intended to demonstrate a specific step in the overall quality improvement process, not to serve as a guide for the conduct of such a process generally.
4.9.2: Timing of data collection should be based on knowledge or theory of timing of effect of intervention on indicator

Case Illustration 4.9.2: Community Mental Health Center Implements Clinical Pathways for Treatment of Persons with Severe Mental Illness

The staff of a community mental health center in a Northeastern state, in operation since 1979, became increasing concerned about their capacity to deliver quality care in the customary way, given the changed circumstances of managed care and capitated reimbursement. A team established to explore this issue settled on the concept of clinical pathway methods as the most appropriate solution, and a task force was established to implement this program. In consultation with the clinical staff and a review of published treatment guidelines, the task force established a phase format for treatment. Initially, outcomes were organized on an interdisciplinary treatment plan over three phases of treatment: assessment phase, treatment phase and termination phase. As phases of treatment were finalized, outcome tools were integrated into the clinical pathway to link pathway interventions with client symptoms and level of functioning. The Global Assessment of Functioning Scale (GAF) and the Behavior and Symptom Identifications Scale (BASIS-32) were selected.

Exemplary Activity:

After receiving feedback from the treatment team regarding phases of treatment and corresponding outcomes, a discussion ensued regarding treatment outcomes for clients with severe mental illness. There was concern that outcomes generated for more acute clients were not appropriate for this subgroup. Based on these discussions interventions were mapped out for each outcome over four phases of treatment: assessment, treatment, maintenance and termination. The task force established an outcome assessment schedule that balanced the need for data with considerations about overburdening staff, resulting in non-compliance. Accordingly data collection was integrated into the clinical pathway on a fixed schedule for both instruments: at intake, at three months and at discharge. The treatment team is looking at adding a data collection interval at post-discharge to study long-term outcomes.

Discussion

Under item 4.4, we discussed two considerations in determining an appropriate time frame for a QI project: the amount of time required for expected results to occur, and the amount required demonstrating lasting change. This Case
Illustration, especially in the plans for measuring long-term outcomes, demonstrates the latter.

4.9.3: If longitudinal designs are used, appropriate methods should be used for reducing attrition.

Case Illustration 4.9.3: HMO Implements QI Project to Address Readmission Rates for Psychiatric Hospitalizations

An HMO identified hospital readmission rates as an indicator of quality and cost control. Reviewing data, they found that the highest readmission rates were in behavioral health. Accordingly, they decided to collaborate with their behavioral health vendor on a quality improvement project focusing on this area. To implement the project, the vendor established the position of “Clinical Team Care Manager.” As the Care Manager began to develop a plan for identifying the reasons for high rates of hospitalization and readmission, however, he encountered a major obstacle: the vendor in many cases was unable to track cases following treatment in the network. Without being able to track over time a representative group of consumers who had received behavioral health care, the project leaders would have no way of identifying and monitoring quality issues.

As the first step in the project, therefore, the Care Manager met with representative of the HMO and the vendor to establish formal procedures for tracking members who had been hospitalized for behavioral health disorders.

**Exemplary activity**

The plan to ensure that persons receiving inpatient behavioral health care would not be lost to follow-up, the HMO and the vendor established the following procedures:

- The Care Manager would discuss the consumer’s discharge plan with the facility within 48 hours of admission
- The care manager would notify clinical support staff of discharge plan prior to the discharge
- Support staff would then assist consumers in scheduling follow-up visits within three days of discharge
- Support staff would contact the consumer’s outpatient provider within 2 weeks after discharge to monitor adherence to the treatment plan
- For consumers having difficulty adhering to the plan, the support staff would refer the person back to the Care Manager who would follow-up on a case-by-case basis.
With this plan in place the project team was able to obtain information over time that allowed them to identify and address reasons why some consumers had problems adhering to treatment and as a result, experienced relapses and rehospitalizations.

**Discussion**

The discussion under Item 4.2 regarding the importance of samples being representative of the population and of adequate size applies here as well. Attrition is a potential source of bias in that there are frequently patterns in the type of person leaving a study (e.g. they may be sicker, more depressed, less satisfied, etc.) that would influence the results. Similarly, attrition may result in a sample that is too small for a moderate effect to be measured. The planning phase of a QI study, therefore, should include an assessment of the potential attrition, as well as a plan for minimizing it.
Phase I: Planning your QI study

CHECKLIST

STEP 1
Involve consumers and other stakeholders in the quality improvement process

☐ Process provides opportunities for and seeks enrollee participation

Comments:

STEP 2
Select a topic for the quality improvement process

☐ Public payers and MCO contribute to topic selection

Comments:

☐ Topics are identified through continuous data collection and analysis

Comments:

☐ Topics are selected systematically and prioritized to achieve greatest benefit for enrollees

☐ Selection process takes into account:
  - Prevalence of condition or need for service
  - Enrollee demographic characteristics and health risks
  - Interest of consumers in the aspect of care or services to be addressed

Comments:
STEP 3

Select performance indicators and measure that address important impacts and have desired scientific properties

☐ Public payers and MCO contribute to selection of performance indicators

Comments:

☐ Performance indicators are objective, clearly defined, evidence based

Comments:

☐ Indicators measure changes in health status, functional status, satisfaction or valid proxies

Comments:

☐ Process measures are used as proxies for outcomes only when validity has been established in literature or by expert consensus

Comments:

☐ Some indicators allow comparison with other organizations or benchmarks

Comments:

☐ Performance indicators are identified through continuous data collection and analysis

Comments:
STEP 4

Choose an appropriate research design and appropriate data collection methods

☐ The improvement is reasonably attributable to interventions undertaken by the organization

Comments:

☐ Sampling methodology validly reflects all practitioners and enrollee groups

Comments:

☐ Sample randomly selected from total population the indicator applies to, or from important subgroups

Comments:

☐ Baseline established, changes measured continuously for at least one year after desired performance level is achieved

Comments:

☐ Same measurement methodology is used for baseline and follow-up assessments

Comments:

☐ If longitudinal designs are used, appropriate methods for reducing attrition are employed.

Comments:
☐ Identification of subjects factors in changes in enrollment status
Comments:

☐ A power analysis is conducted prior to data collection
Comments:

☐ Project hypotheses and data analysis plans are articulated prior to data collection
Comments:

☐ If survey data are collected and some potential subjects are non-English speaking, appropriate translation methods are employed
Comments:

☐ Timing of data collection based on knowledge or theory of timing of effect of intervention on indicator
Comments:

☐ If longitudinal designs are used, appropriate methods for reducing attrition are employed.
Comments:
Phase II
Collecting Data

**STEP 5**

Collect Data

*Rationale*

The process of collecting data may be the most critical and also the most challenging element of a quality improvement project. The data collection process must take into consideration the type of data required for the project’s goals, the availability or feasibility of collecting the data, and the protection of confidentiality and consumers’ rights (NCQA p. 41, MHSIP p. 41).

**5.1: If data are collected from consumers, the project should be reviewed by a human subjects committee or IRB**

*Case Illustration 5.1: A State Agency Takes Steps to Protect Human Subjects In a Study of Substance Abuse Treatment for Women*

A state department of human services wanted to examine whether ancillary services (medical, psychological, family/social, financial, employment, and legal) would lead to better outcomes for low-income women receiving substance abuse treatment in 35 inpatient and 122 outpatient programs participating in a state wide treatment outcomes monitoring system.

*Exemplary Activity:*

The study collected data at treatment admission, during treatment, and 6 months posttreatment. The sample included 1,159 low-income women and 208 non-low-income women in substance abuse treatment. Measurements included Intake, History, and Discharge forms, a modified version of the ASI, and the weekly Treatment Services Records. Signed consent was required for participation in the study, and patients received no incentive, monetary or otherwise, to participate. Because of the stigma associated with substance abuse problems, the agency submitted all study procedures and instruments for approval by the Department of Human Services Institutional Review Board (IRB) for the protection of human research subjects.


This illustration is intended to demonstrate a specific step in the overall quality improvement process, not to serve as a guide for the conduct of such a process generally.
This study is an example of a collaborative effort between treatment programs and a state agency. The conclusions of this study support the importance of ancillary services for retaining low income women in treatment and improving their chances for positive outcomes.

**Discussion**

In presenting a proposed QI project to members of an IRB as well as to other stakeholders such as consumers it is important to discuss the potential benefit as well, since the determination of acceptable risk is related in part to whether it is commensurate with the benefits to be obtained.

**5.2: If consumer satisfaction data are collected, data collection should be clearly separated from service provision**

**Case Illustration 5.2: Quality Improvement for Depression Treated in Primary Care: Collection of Service Data**

A research project funded by NIMH and the MacArthur Foundation sought to determine the effect of focused QI programs as a means of disseminating treatment guidelines for depression into primary care settings. The study was conducted in 46 primary care clinics in six public and private managed care organizations. The QI projects employed different supplemental resources: some relied on nurses and others on practicing psychotherapists trained in the treatment of depression to support the use of guidelines by primary care physicians. The primary hypothesis of the study was that QI interventions will improve quality of care and health-related outcomes over a follow-up year.

**Exemplary Activity:**

The researchers decided to use, after discussion, the Health Service Utilization survey. The surveys assessed the total medical visits, medical visits for emotional problems, and mental health specialty visits during the prior six months. They next developed indicators of each type of visits and counts of visits among users. In an effort to reduce skewness, counts (cubic root for total visits; negative reciprocal of square root for medical visits for emotional problems; log transformation for specialty visits) were transformed.

The results of this study found that when a structured QI program was implemented, quality of care, clinical outcomes, mental-health related functioning, and retention in employment of depressed patients improved over a year.
Discussion

Having providers distribute satisfaction surveys is an attractive strategy because it is relatively low cost and results in a higher rate of return than alternative approaches such as mailing. This is often unacceptable, however, because of certain risks, e.g. the risk that consumers will experience this as coercion, or the risk of bias due to the likelihood that a more favorable rating results when the provider distributes the form.

5.3: If individual enrollee data are collected, each enrollee should be given information about his/her rights, and data should only be collected for persons who give their informed consent.

Case Illustration 5.3: Obtaining Consent from Consumers to Participate in Study of the Treatment of Depression in Primary Care

A research project sought to determine the effect of focused QI programs as a means of disseminating treatment guidelines for depression into primary care settings (see Case Illustration 5.3 for more details).

Exemplary Activity:

The study approached 44,052 persons, but 10,120 were ineligible, mainly because they were not patients of study providers. Of the 27,332 patients completing the screener (85% of those were approached and eligible), 3918 were potential eligible. Many left during enrollment, and 2,417 were present to confirm insurance eligibility, and 241 had ineligible insurance. The researchers gave each participant a consent form to read and sign before they participated in the study. Of those who read the informed consent, 1,356 enrolled and the remaining 21% either refused or left the clinic.

Discussion

As discussed with Item 5.1, consumers should be presented with an accurate and detailed description of potential benefits as well as risks in order to make an informed decision about whether or not the level of risk is acceptable.


This illustration is intended to demonstrate a specific step in the overall quality improvement process, not to serve as a guide for the conduct of such a process generally.
5.4: Appropriate methods to protect confidentiality and security of data should be employed

Case Illustration 5.4: Protecting Confidentiality in a Consumer Satisfaction Survey

A non-profit health care plan serving primarily Medicaid enrollees was planning a consumer satisfaction survey in order to comply with contractual obligations and simultaneously to serve quality improvement purposes. Before settling on a particular survey instrument and methodology, however, they contracted with an independent research company to conduct a pilot project in which several instruments would be compared to determine the approach best suited to their purposes.

The management team responsible for the survey knew that it was important for ethical and methodological reasons to maintain a boundary between the satisfaction survey and the process of providing care. Survey respondents were assured that their answers were confidential, that only the independent research group would have access to the identifying information, which would be kept in a secure place, and that responses to the survey question would not influence the services received.

Exemplary activity

To evaluate the instruments, however, the management team wished to know whether consumers’ responses were influenced by socio-demographic or clinical characteristics, which required linking the surveys with the patient record. To accomplish this while keeping the survey responses secure and confidential, they requested the research group to link the survey responses with the necessary patient information, while removing any information that might identify the consumer uniquely. The management of the plan was then able to assess the relationship between certain consumer characteristics and response patterns without learning the identity of the respondent.

Discussion

Adequate assurances of confidentiality are not only important for ethical reasons, but they are also relevant to the validity of the study. If consumers are not persuaded that information about them is sufficiently secure, they are likely to respond selectively, either by certain categories of enrollee (for example, those with a stigmatizing condition) declining to participate or all enrollees responding to certain items in a biased way. Measures for insuring confidentiality and security of data, therefore, should be thought out carefully and explained clearly to participants in the project.
Case Illustration 5.5: Health Plan Staff Training in the Implementation Phase of a New Quality Monitoring Program.

The clinical staff of a small (fewer than 100,000 members) health plan with a combination of commercial and Medicare enrollees had expressed concern about the continuity and coordination of behavioral health care. The plan had relatively little experience with systematic data collection and analysis, however, so it settled on the HEDIS measure of percent of members with admissions for affective disorders receiving follow-up appointments within thirty days as an appropriate means of gauging performance.

Exemplary practice

In the implementation phase of the project, the team recognized that the plan had no consistent method of tracking members admitted to behavioral health facilities, and that the clinical staff were not oriented toward this kind of monitoring. To obtain consistent assessment of the same elements of care across the system, the project team developed and instructed clinicians in the use of a simple tracking form that spanned an episode of care from the point of admission through the ambulatory post-hospital follow-up visit.

By involving the entire clinical staff in the use of the tracking form, the plan was able to begin monitoring continuity of care for consumers with depression and eventually achieve a 100 percent follow-up rate.

Discussion

Using consumers to conduct a quality improvement project, especially one involving measurement of satisfaction, is often a beneficial strategy in behavioral health, as they may have a better understanding of the conditions of illness and treatment and respondents may be more candid. This requires special considerations for training, however. Resources for training consumers to conduct evaluations are available from the Evaluation Center@HSRI among other places.

Source: NCQA Quality Profiles 173-176

This illustration is intended to demonstrate a specific step in the overall quality improvement process, not to serve as a guide for the conduct of such a process generally.
5.6: If the project entails large-scale data collection, a pilot test should be conducted

Case Illustration 5.6: Pilot Study Assesses Impact of Disseminating Quality Improvement for Depression to Managed, Primary Care Practices

A research project sought to determine the effect of focused QI programs as a means of disseminating treatment guidelines for depression into primary care settings (see Case Illustration 5.3 for more details).

Exemplary Activity:

The researchers met and decided that a pilot test would be needed to test the hypotheses. A pilot study was planned and implemented at a few targeted sites. In the pilot month for the first site, patients screening positive for bipolar disorder or alcoholism were excluded, but not from the main study. Patients learned of their intervention status after enrollment. The pilot study confirmed the intervention and the full study was planned and implemented.

The results of this study found that when a structured QI program was implemented, quality of care, clinical outcomes, mental-health related functioning, and retention in employment of depressed patients improved over a year.

Discussion

Pilot testing is a valuable and cost-effective means of identifying and correcting a wide range of potential problems (appropriateness of instruments, factors affecting attrition, problems with obtaining information, the design of the project, etc.) that otherwise might invalidate the results completely. Though a pilot study often appears to be a costly and time-consuming step, the benefits in preventing the problems that occur frequently in QI projects, usually make it worthwhile.
Phase II: Collecting Data

STEP 5

Collect data

☐ If data are collected from consumers, the project is reviewed by a human subjects committee or IRB

Comments:

☐ If consumer satisfaction data are collected, data collection is clearly separated from service provision

Comments:

☐ If individual enrollee data are collected, each enrollee is given information about his/her rights, and data is only collected for persons who give their informed consent.

Comments:

☐ Appropriate methods to protect confidentiality and security of data are employed

Comments:

☐ Staff involved in data collection are adequately trained

Comments:

☐ If project entails large-scale data collection, a pilot test is conducted

Comments:
Phase III
Analyzing And Interpreting Data

STEP 6
Analyze and Interpret Data

Rationale
Assessing the extent and meaningfulness of the project’s contribution to improvement depends upon appropriate methods of data analysis. This involves methodological considerations such as risk adjustment, potential sources of bias and use of appropriate significance tests.

6.1: Reliability and validity of data should be assessed based on systematic and ongoing collection of information and should meet scientific standards (Corresponding QISMC Standard: 1.4.3)

Case Illustration 6.1: Hospital Uses Profiling Data to Improve Quality of Care for Bipolar Disorder
The Quality Improvement Team of a private psychiatric hospital was seeking a project for the next CQI cycle. Anecdotal evidence had suggested that outcomes of persons treated for bipolar disorder had been inconsistent, so the team decided to make this the focus of the next project. For the first step of obtaining actual outcomes data by provider, the team turned to the listing of performance measurement systems approved through the ORYX program of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), and selected one that seemed most suitable to their needs, known as PsychSentinel, which measures outcomes as a scale of symptom reduction.

Exemplary Activity
One of their reasons for choosing this system was its reliability and validity of its measures. The reliability of coding of the forms had been assessed in three settings—two inpatient units, and one partial hospital program. In the first, inter-rater reliability, assessed on 30 cases, had a kappa of .876 for the symptom checklist and .89 for clinical difficulty items. A second study, with 28 subjects, reported a
mean kappa statistic for eight symptom checklists of .82. The third, in the partial hospital program, reported a kappa reliability coefficient of .86. The system uses 20 diagnostically defined symptom checklists, which are derived from DSM-IV, which lends them a degree of face validity.

Using the PsychSentinel system the team collected outcomes for patients with bipolar disorder treated by a number of doctors over time, and found moderate variation except for one with consistently poorer outcomes. A review of these patients’ charts was required to identify the cause of this problem, which turned out to be too rapid changing of medications, and the problem was easily rectified.

**Discussion**

Statisticians have been developing methods to adjust and compensate for lower reliability in research data. These methods create opportunities for conducting studies, and thereby increasing the potential for improving quality, in areas that would otherwise not be possible. The disadvantage of these techniques, however, is that QI programs may lack the resources to utilize them, and because they are less familiar, the results may be less persuasive, an important factor in the quality improvement process. Nonetheless, it is always necessary to weigh the balance between the potential for improvement and the limitations of the data available to support it.

**6.2: Interventions should result in demonstrable improvement** (Corresponding QISMC Standard: 1.4.4)

**Case Illustration 6.2: Quality Improvement Project Reduces Length of Stay in a Partial Hospital Program**

A quality improvement project in a partial hospital program focused on reducing length of stay for consumers. This topic was studied for two reasons: 1) long lengths of stay for chronic problems were limiting the availability of partial program spaces for patients diverted from inpatient admissions and for patients stepping down from acute inpatient care. 2) Medicare audits were also focusing attention on medical necessity standards that require patients using partial hospital services to be in acute need of the service.

**Exemplary Activity:**

The aim of this study was to decrease the average length of stay in the Adult Partial Hospital Program. The measure used was the number of calendar days between patient’s admission and discharge date. There were 3 interventions that lead to the decrease in length of stay:
• Discussed with patients prior to admission to the program expectations for treatment outcomes and length of stay.
• Discharged with referring clinicians expectations for treatment outcomes and length of stay
• Increased linkages to aftercare services

The results of the study were that length of stay decreased from 25 to 14 days and has been sustained. The next steps of the study are to continue to ensure that the gains are sustained.

**Discussion**

Under item 3.2 we discussed the tradeoffs between the use of measures that are objective and reliable on the one hand and on the other, the potential for reductionism, to be measuring processes that are less meaningful. This is simply a matter of trying to strike a balance, an issue that confronts all science that must be considered continuously.

6.3: Tests of statistical significance should be appropriate to the project design and data source

(Corresponding QISMC Standard: 1.4.4.2)

**Case Illustration 6.3: Analysis of Client Satisfaction Data by an MCO**

CONTACT Behavioral Health Services developed a 39-item client satisfaction survey. This study examined 1) defining a small number of the most powerful predictors of client satisfaction and 2) testing the effect of medical evaluations on client satisfaction.

**Exemplary Activity:**

“In order to test the hypothesis that no significant intercategory differences existed, a one-way ANOVA was run on overall satisfaction using DSM categories as grouping variables and no significant differences were found.”

“To test for the presence of this potential confounding variable, a t-test was run using overall satisfaction as a dependent variable for these two groups.”

**Discussion**

The use of analysis of variance procedure in this case was appropriate. However, some researchers and evaluators are beginning to call for an additional operation, sometimes referred to as equivalency analysis. This entails a determination of not only whether two groups differ in statistically significant ways, but...
whether or not they may be equivalent in the sense of falling within a prede­

termined range where the differences between them, if any, have no practical or
clinical relevance.

### 6.4: Improvement should be sustained at least one year after
improvement was demonstrated (Corresponding QISMC
Standard: 1.4.5)

#### Case Illustration 6.4: HMO Addresses Problem of Long Waiting Times
for Behavioral Health Appointments.

An HMO’s regular satisfaction survey revealed that one of the most common complaints of its members was long waits for behavioral health appointments. Recognizing that timely behavioral health interventions contribute to reduced costs as well as member satisfaction, the plan formed a QI team to address this issue. The team chose two measures to assess performance: the percentage of members who receive an appointment within two weeks of a request, and the percentage of members who receive an appointment within four weeks. Baseline data indicated that about 30 percent of members received an appointment within two weeks and about 60 percent within four weeks. For the quality improvement intervention, the plan, acting on the QI team’s recommendations established several urgent care sites and streamlined the intake system for behavioral health appointments.

#### Exemplary activity

The first measure in the year following baseline showed virtually no change from the baseline measures. The plan increased the number of urgent care sites and added staff to respond to at-risk consumers, and in the second year achieved a statistically significant improvement to about 50 percent receiving appointments within two weeks. The team then extended the hours that urgent care clinics were open. The behavioral health treatment team also set up regular meetings to coordinate availability of appointments with requests. As a result, in the third year the team achieved the performance goal established at the beginning of the project. The plan then established an ongoing monthly review of data on appointment scheduling to ensure that that this level of access was maintained over the long term.

#### Discussion

One issue continuously present in the quality improvement process is the tendency for improvement to occur simply in response to the fact that measurement and monitoring are taking place. Change of this type is unlikely to be sus-

---

**Source:** NCQA *Quality profiles* 189-194.

*This illustration is intended to demonstrate a specific step in the overall quality improvement process, not to serve as a guide for the conduct of such a process generally.*
tained after the program shifts focus to another area. This item emphasizes the
importance of insuring that gains achieved in the course of the project will not
be lost when the project is complete and monitoring becomes less intensive.

6.5: Approaches to missing data should be established

Case Illustration 6.5: Methods for Dealing with Missing Data in a
Large Study of Multiple Primary Care Clinics

This study examined the impact of disseminating quality improvement for
depression into primary care settings.

Exemplary Activities:
The researchers developed efforts to evaluate the missing data in the study. Specifi-
cally, data were weighed for the probability of enrollment, attrition, and wave
response. Multiple imputations for missing data were used at the item level. They
imputed five data sets, averaged predictions, and adjusted standard errors for
uncertainty due to imputation.

Discussion
As discussed under item 6.1, a variety of statistical techniques (described gener-
cically as Bayesian methods) for dealing with data that are less reliable or com-
plete. As noted, these are probably beyond the capacity of most quality
improvement programs at this point, but they will likely become more accessi-
ble with time, and quality improvement managers should be aware of the possi-
bility that quality improvement efforts eventually may be less constrained by
the difficulty of obtaining adequate data.

6.6: If survey data are collected, bias due to non-response
should be assessed and, to the extent possible, statistical
adjustments should be made to correct for these biases

Case Illustration 6.6: Dealing with Non-response to a Satisfaction
Survey in a Medicaid Managed Care Plan

A large urban health system operating a Medicaid managed care plan was
required by the state Medicaid agency to conduct a survey of members’ satis-
faction with behavioral health services. Although the regulatory requirements
for this survey were relatively simple, the plan chose to go beyond these to
develop a process that would be valid in identifying areas for quality improve-

SOURCE: Wells, K., et al. (2000). Impact of dis-
seminating quality
improvement programs
for depression in man-
aged primary care: a
randomized controlled
trial. JAMA 283(2):
212–20.

This illustration is
intended to demonstrate
a specific step in the
overall quality improve-
ment process, not to serve
as a guide for the con-
duct of such a process
generally.
ment. The Quality Improvement team delegated to plan this study identified several satisfaction surveys that were widely used but not tested on different populations, so they decided to conduct a pilot study using two of these, surveying every member who received behavioral health services. This pilot was conducted by an independent quality review organization that reported back findings with patient identifying information removed.

**Exemplary activity**

The quality improvement team found that the response rate, even after follow-up mailings was quite low, around 30 percent. Though fairly typical for this population, the team decided this was inadequate to suit the purpose of quality improvements as the lack of response may have resulted in bias if those who didn’t respond differ from the rest in some systematic way. The team was concerned particularly that more severely impaired members may have been less likely to respond. To address this issue, they asked the quality review organization to compare responders and non-responders on various clinical and sociodemographic dimensions. The result, as they hypothesized, was that persons with diagnoses indicating more severe mental illness were less likely to respond to the survey. In their analysis of the results, they adjusted for this characteristic by adding diagnosis as a control variable.

The plan was thereby able to eliminate some of the bias in the response to the survey, and also identify areas of service for particular subpopulations that may benefit from further quality improvement efforts.

**Discussion**

The comments under 6.5 above apply here as well. Bayesian methods allow for analysis to impute data for non-responders based on what is known about responders. These methods, which can be very beneficial in certain areas of behavioral health, are likely to become increasingly conventional.

**6.7: Appropriate statistical adjustments should be made to account for differences in the characteristics of individuals measured at baseline and at follow-up**

**Case Illustration 6.7: Controlling for Pre-Post Site Differences Between Consumers in a Study of Quality Improvement Interventions in Primary Care**

Despite the availability of well-tested guidelines for the treatment of depression, the performance of primary care providers, who see many people with depression, often falls short of these standards. The persistence of this gap
between recommendation and practice has led many experts and research funding agencies to identify this as an important area for QI efforts. To assess the potential benefit of QI interventions in this area, a group of researchers designed a study which randomly assigned primary care clinics in a number of managed care organizations to usual care or one of several QI approaches and compared changes in processes of care and patient outcomes from baseline over the next two years, measured at 6-month intervals.

**Exemplary activity:**

The team identified baseline characteristics of consumer participants that were associated with remaining enrolled in the study at 12 months, and found that these were being female, older, married white or college educated and receiving care in one of the four sites. In the analysis of the data the team then controlled for these predictors of retention in the study.

After one year the study indicated that structured QI programs under naturalistic practice conditions result in improved quality of care and outcomes for depressed patients in primary care settings. Without adjusting for differences in the groups at the end of the one year period, it would have been impossible to determine whether it was because the QI intervention was effective or because persons who remained in the study at some sites might have been different from those at others in some way related to outcomes.

**6.8: Appropriate risk adjustment methodologies should be used when comparing results with benchmarks or other organizations, or when comparing providers within the organization**

**Case Illustration 6.8: State Agency Compares Contracting Provider Organization on the Basis of Post-Discharge Symptom Severity**

A state mental health agency in the South was developing a new performance measurement system focusing on outcomes measurement to serve as the basis for comparing performance of mental health provider organizations across the state. The agency decided to conduct a pilot project involving two provider systems in the state. The two systems differed in geographic accessibility of services and in the range of community services available, with services in one system being more concentrated geographically and more restricted in the range of available service types, compared to those in the other system.


*This illustration is intended to demonstrate a specific step in the overall quality improvement process, not to serve as a guide for the conduct of such a process generally.*
Exemplary activity

The pilot project was designed to measure short-term (six-month) changes in symptom severity following hospital discharge for consumers with serious mental illness in the two systems. Recognizing that a critical issue in this type of approach is the possibility of differences between the populations served by different providers that might affect outcomes apart from the quality of care provided, the agency took steps to measure and adjusted for differences between them. Baseline data indicated that the two groups differed on race, gender and substance abuse at baseline. During the study period, two groups also differed significantly on the frequency of contact with community-based services. Follow-up data showed that rehospitalization rates and severity scores were higher for those in the consumer groups after statistical adjustment for the effects of substance abuse status, race, sex and system differences.

Further analysis of follow-up data indicated that increased hospitalization was inversely related to frequency of post-discharge contact with community-based services: there was little difference between consumers in each system who had at least monthly contact with community services. The results suggested that better outcomes could be obtained in the first system by increasing the availability of services and facilitating the use of them.

Discussion

The increasing emphasis on benchmarking, evidence based practice, and methods for comparing performance such as report cards has heightened awareness of the importance of risk adjustment, which is essential to the value of all of these activities. Risk adjustment methodology is still very much in a developmental state, especially in behavioral health. These developments are currently being reported extensively in the professional literature, and undoubtedly will become increasingly available through the Internet. In the meantime, quality improvement managers should fully recognize the importance of risk adjustment, endeavor to apply the best methods available, and recognize the limitations of those employed.
6.9: If improvement is not achieved, the organization, consumers and other stakeholders should attempt to understand the cause of the failure and plan an alternative intervention or additional data collection

Case Illustration 6.9: Follow-up in a Study of Antidepressant Therapy in an MCO

A national managed care organization study analyzes the duration of therapy, titration, and switching patterns among 7,737 depressed patients who initiated antidepressant therapy in mid-1995. The purpose of the study was to evaluate “real world” antidepressant therapy effectiveness, assess compliance with Agency for Healthcare Research and Quality (AHRQ) guidelines, and compare primary care and psychiatric prescribing patterns.

Exemplary Activity:

The conclusions of this study helped to identify an important agenda for quality improvement for the managed care organization. Part of this agenda was to identify a list of “Next Steps” to consider because the desired results were not found:

• Include HEDIS 99 antidepressant measures
• Healthplan and Region-specific outcomes data (February 2000)
• Collaboration with CORE (Center for Outcomes Research and Evaluation, Director: Rick Smith, MD) to examine medical shadow diagnoses and medical cost offset.

The conclusions of the study helped identify an important agenda for quality improvement. The study found that Fluoxetine patients experienced more continuous days of therapy than all other patients and were less likely to switch medications. The study also found that a patient’s initial study drug and titration patterns on that study drug were the strongest predictors of duration of therapy.

Discussion

This item suggests the potential benefits of adding qualitative methods along with quantitative in the quality improvement process in certain circumstances. Qualitative methods are especially useful for understanding the processes of care and the barriers to improvement. The literature on these approaches, including advances in methods for improving the reliability and consistency of qualitative analyses, is fairly extensive.

Source: Opland, E. Antidepressant Duration of Therapy, Titration and Switching Patterns. MCC Behavioral Health Care, Inc.

This illustration is intended to demonstrate a specific step in the overall quality improvement process, not to serve as a guide for the conduct of such a process generally.
Phase III:
Analyzing and Interpreting Data

CHECKLIST

STEP 6

Analyze and Interpret Data

% Reliability and validity of data are assessed and meet scientific standards

Comments:

% Interventions result in demonstrable improvement

Comments:

% Tests of statistical significance are appropriate to the project design and data source

Comments:

% Improvement sustained at least one year after improvement is demonstrated

Comments:

% Approaches to missing data are established

Comments:
If survey data are collected, bias due to non-response is assessed and, to the extent possible, statistical adjustments are made to correct for these biases.

Comments:

Appropriate statistical adjustments are made to account for differences in the characteristics of individuals measured at baseline and at follow-up.

Comments:

Appropriate risk adjustment methodologies are used when comparing results with benchmarks or other organizations, or when comparing providers within the organization.

Comments:
Phase IV: Providing Feedback For Service Improvement

**STEP 7**

Feedback Data to Service Providers to Improve Services

*Rationale*

The feature of the quality improvement process that distinguishes it from related activities (such as services research or quality assurance) is that it goes beyond identifying and addressing problem areas to improving the performance of all individuals in the health care system (NCQA, p. 9). Developing effective feedback mechanisms is, therefore, essential to the success of a quality improvement process project.

**7.1: Data collection and analysis should be integrated with planning and implementing improvement strategies**

*(Corresponding QISMC Standard: 1.4.3)*

**Case Illustration 7.1: Psychiatric Outcome Study Identifies Additional Quality Improvement Activities**

This study was done by a group of researchers from an HMO and a state medical center. The quality improvement program named the New Model of Care was initiated to redesign and enhance the mental health and chemical dependency treatment services offered by the HMO. The specific purpose of this psychiatric outcome study examined caseload attributes, patterns of treatment, and clinical outcomes in 950 adult outpatients.

**Exemplary Activity:**

This study also highlighted specific areas where quality improvement may be needed. The substantial number of patients that did not return after their intake visit, despite a high level of initial impairment, suggests that attention needs to be focused on the reasons for termination after intake, the consequences for subsequent functioning, and strategies for improving patient retention.


This illustration is intended to demonstrate a specific step in the overall quality improvement process, not to serve as a guide for the conduct of such a process generally.
The response to this study has resulted in a psychiatric steering committee initiating projects attempting to move outcomes assessment into the daily routine of business at the company. The researchers note that this study has helped prepare the organization to better make informed decisions about how to measure and improve the quality of its mental health services.

**Discussion**

The quality improvement literature contains extensive discussions of the cyclical activities of planning, doing, checking and acting in the Total Quality Management and Continuous Quality Improvement models. More generally, the involvement of providers at all stages of the quality improvement process helps insure that the knowledge produced by the project is relevant to the goals of improving the quality of care.

### 7.2: Results of QI studies are disseminated to providers and consumers in a variety of methods

**Case Illustration 7.2: Disseminating the Results of a Quality Improvement Study**

A national managed care organization study analyzes the duration of therapy, titration, and switching patterns among 7,737 depressed patients who initiated antidepressant therapy in 1995 (see Case Illustration 6.9).

**Exemplary Activity:**

This study identified a list of “Quality Improvement Initiatives” to distribute results of the study to the managed care company:

- Healthplan-specific data distributed
- National depression and antidepressant education packets:
  - Do’s and Don’ts
  - Zung Scale
- AHRQ guidelines brochure
- On-site and audio conference CME training
- Target mailings to PCPs with outlying prescription habits
- Psychiatric consultation line
- Publication of study results and recommendations in Healthplan and MCC’s Provider newsletters
- Publication of results in scientific and industry journals
Discussion

Early efforts to promote evidence-based practice quickly led to the recognition that a variety of barriers, not always easily understood or resolved, stand between the development and the implementation of treatment guidelines and similar approaches. This led to increased attention to developing effective means of disseminating knowledge that would support improved quality of care. In the forefront of the various agencies and organizations exploring these issues is the federal Agency for Healthcare Research and Quality (AHRQ) at http://www.ahrq.gov/.

Phase IV:
Providing Feedback for Service Improvement

CHECKLIST

STEP 7

Feed back data to service providers to improve service

☐ Data collection and analysis is integrated with planning and implementing improvement strategies

Comments:

☐ Results of QI studies are disseminated to providers and consumers in a variety of methods

Comments:
Phase V: Evaluating Your Performance Improvement Program

**STEP 8**

Assess the Burden and Benefit of the Quality Improvement Project

*Rationale*

Before acting on any quality improvement study, or planning additional ones, it is important to obtain an objective evaluation of the completed project (NCQA, p. 93). More generally, continuous quality improvement requires periodic assessment of the structure and strategies of the QI program itself, with recommendations for needed changes (Guidelines, 1.6.2.).

**8.1: Upon completion, projects should be re-evaluated and monitored for at least one year.**

(Corresponding QISMC Standard: 1.4.5)

**Case Illustration 8.1: Improving the Detection of Mental Disorders in Primary Care**

This study was conducted by the Cambridge Health Alliance (CHA) and Network Health in March of 1998. The goal of this study was to improve the detection and treatment of psychiatric disorders and substance abuse in primary care settings. During a thirteen month period, 1,599 primary care patients were screened for mental health and substance abuse problems. This study did provide a series of follow up steps that should be done at the program’s completion.

**Exemplary Activity:**

The workgroup identified several “next steps” that are to be followed up on at the completion of the project. The first step is to re-evaluate the program after its first year and decide whether to continue it. The following will be considered in the re-evaluation process:
Of the 1,599 primary care patients that were screened for mental health and substance abuse problems, 724 (45%) screened positive and 39% of this group was assessed by their clinician as having a possible or probable psychiatric disorder. 109 of these patients were treated for these problems in primary care and 165 were referred to mental health specialty services.

**Discussion**

This Case Illustration demonstrates the importance of one consideration in the evaluation of a quality improvement project: the benefit of including this phase in the initial planning. This insures that adequate resources are allocated and that the project is carried out in a way that can be fully evaluated, thereby enhancing the overall benefit.

---

**Phase V:**

**Evaluating your Performance Improvement Program**

**CHECKLIST**

**STEP 8**

Assess the burden and benefit of the quality improvement project for the purpose of planning future projects

☐ Upon completion, projects are re-evaluated and monitored

Comments:
Phase V: Evaluating Your Performance Improvement Program

Asche, S.E. & Harrison, P.A. (under review). Substance abuse treatment outcomes for low income women: the impact of ancillary services. Contact: Patricia A. Harrison, Ph.D., Minnesota Department of Human Services 444 Lafayette Road, St. Paul, MN 55155-3865.


Green Spring Health Services, Inc. Quality improvement activity summary the family depression project: intervention for families with a parent diagnosed with depression.

Hermann, R.; Schluckebier, M.; Dawei, Y.; Regner, J. (April, 1999). *Improving The Detection and Treatment of Mental Disorders in the Cambridge Health Alliance and Network Health*. Report to the Primary Care-Mental Health Working Group

National Committee for Quality Assurance (NCQA) (October 1999). Quality Profiles: In Pursuit of Excellence in Managed Care

Opland, E. Antidepressant duration of therapy, titration and switching patterns. MCC Behavioral Health. (presentation overheads)


QISMC Standards (HCFA)

Rudo, A. & Kornmayer, K. depression screening, referral and follow up after a myocardial infarction and / or a cardiac procedure. Magellan Behavioral Health: Columbia, MD.


Appendix A:
List of Workbook Reviewers

Fred Altaffer, Ph.D.
Director of Research
Mentor, Inc.

Patricia MacTaggert
Director of Quality and
Performance Management Group
Health Care Financing Administration

Valerie Bradely, M.A.
President
Human Services Research Institute

Frank McCorry, Ph.D.
Director, Clinical Services
New York State Office of Alcoholism and
Substance Abuse Services

Kathryn Coltin
Director, Clinical Measurement Systems
& External Affairs,
Harvard Pilgrim Health Care

A. Thomas McLellan, M.D.
Scientific Director
Treatment Research Institute

Lewis Gallant, Ph.D
Director, of Office of Substance Abuse Services
Commonwealth of Virginia

Ida Miller RN MSN MPAff
Texas Health Quality Alliance

Eric Goplerud, Ph.D.
Director, Office of Managed Care, Substance
Abuse and Mental Health Services
Administration

Virginia Mulkern, Ph.D.
Vice President, Human Services Research
Institute

Annette Hanson, M.D.
Medical Director
Massachusetts Division of Medical Assistance

Lee Partridge
Director of Health Policy
American Public Human Services
Administration

Chris Heldman
Office of Managed Care
Substance Abuse and Mental Health Services
Administration

Ron Preston
Health Care Financing Administration

Rick Herman, M.D., M.S.
Director of Quality Management
Cambridge Health Alliance Department of
Psychiatry

Dee Roth, M. A.
Office of Program Evaluation and Research
Ohio Department of Mental Health

Enid Hunkler, M.A.
Kaiser Permanente
Division of Research

David Schulke
Executive VP
American Health Quality Association

Nancy Kennedy, Dr.P.H.
Director, Office of Managed Care
Center for Substance Abuse Prevention
Substance Abuse and Mental Health
Services Administration

Dena Stoner
State Medicaid Office
Texas Health and Human Services
Commission

Ed Knight, Ph.D.
Colorado Health Network

Frank Sullivan, Ph.D.
Center for Medicaid and State Operations
Health Care Financing Administration
Appendix B:
QISMC Standards

Quality Improvement System for Managed Care (QISMC)
for Organizations Contracting with Medicare or Medicaid

Guidelines for Implementing and Monitoring
Compliance with Interim QISMC Standards

Health Care Financing Administration
September 28, 1998

DOMAIN 1: Quality Assessment and Performance Improvement (QAPI) Program

1.1 Basic Requirements. The organization:

1.1.1• Achieves required minimum performance levels, as established by HCFA (for Medicare) or by the State Medicaid agency (for Medicaid), on standardized quality measures;

1.1.2• Conducts performance improvement projects that achieve, through ongoing measurement and intervention, demonstrable and sustained improvement in significant aspects of clinical care and non-clinical services that can be expected to have a beneficial effect on health outcomes and enrollee satisfaction; and

1.1.3• Corrects significant systemic problems that come to its attention through internal surveillance, complaints, or other mechanisms.

The basic requirements for this domain establish three distinct, but related, strategies for promoting high quality health care in organizations serving Medicare or Medicaid enrollees. First, each managed care organization must meet certain required levels of performance when providing specific health care and related services to enrollees. These required levels of performance will be established by HCFA (for Medicare) or the State Medicaid agency (for Medicaid). For example, a State agency might require all organizations with Medicaid enrollees to achieve, at a minimum, a specific numerical rate (e.g., 80 percent) of immunization of Medicaid children. The minimum performance level would be established by examining historical performance levels, as well as benchmarks (best practices), of health plans and other delivery systems with respect to immunizing children.

Second, managed care organizations must conduct performance improvement projects that are outcome-oriented and that achieve demonstrable and sustained improvement in care and services. The standards expect that an organization will continuously monitor its own performance on a variety of dimensions of care and services for enrollees, identify its own areas for potential improvement, carry out individual projects to undertake system interventions to improve care, and monitor the effectiveness of those interventions.
Third, the organization must take timely action to correct significant systemic problems that come to its attention through internal surveillance, complaints, or other mechanisms. For instance, if an external quality review organization discovers a systemic problem pertaining to an aspect of care delivery as a result of performing an analysis of quality of care on a different aspect of health care, the organization is expected to address the problem promptly.

The succeeding standards in this domain elaborate on the basic requirements set forth in standard 1.1 (standards 1.2, 1.3, and 1.4) and specify requirements pertaining to the infrastructure necessary in a managed care organization to carry out the activities required in this domain (standards 1.5 and 1.6):

- **Standard 1.2, Performance Levels**, specifies that organizations must report their performance on standardized measures and achieve established performance levels for specified measures.

- **Standard 1.3, Performance Improvement Projects**, requires that an organization’s individual improvement projects, in the aggregate, address a broad spectrum of key aspects of enrollee care and services. It also includes specifications for phase-in of these requirements.

- **Standard 1.4, Attributes of Performance Improvement Projects**, establishes criteria for promoting the validity, methodologic soundness and effectiveness of each performance improvement project carried out by an organization. In addition to the guidelines contained in this document for implementing and assessing quality improvement projects, readers are directed to “Health Care Quality Improvement Studies in Managed Care Settings - Design and Assessment” a technical assistance manual developed by and available from the National Committee for Quality Assurance under HCFA contract HCFA-92-1279.

- **Standard 1.5, Health Information System**, specifies the characteristics of an organization’s information systems needed to support its QAPI program.

- **Standard 1.6, Administration of the QAPI Program**, specifies basic structural and procedural requirements for the organization’s QAPI program, including a requirement that the organization routinely assess the effectiveness of its QAPI program.

### 1.2 Performance Levels.

1.2.1 The organization measures its performance, using standard measures established or adopted by HCFA (for Medicare) or by the State Medicaid agency (for Medicaid), and reports its performance to the applicable agency.

1.2.2 The organization achieves any minimum performance levels that may be established by HCFA (for Medicare) or by the State Medicaid agency (for Medicaid) with respect to the standard measures.

1.2.3 The organization meets any goals for performance improvement on specific measures that may be established for that particular organization by HCFA (for Medicare) or by the State Medicaid agency (for Medicaid).

The particular measures for which reporting is required are not specified in these standards, so as not to limit HCFA’s and State Medicaid agencies’ ability to adapt to new developments in the measurement of health care quality. Performance measures typically required by HCFA and State Medicaid agencies address: how well the care provided by an organization meets established standards for preventive care or the care and treatment of certain health conditions, how well an
organization assures access and appropriate utilization of services, and measures of beneficiaries’ satisfaction with the care provided. Performance measures specified by State Medicaid agencies and HCFA may be contained in standardized national data collection and reporting instruments such as HEDIS and CAHPS. They may also be standardized measures unique to a State or specified solely by HCFA. HCFA and each State Medicaid agency, in advance of each contract year, will decide on the measures for which reporting will be required and will notify organizations of those measures.

1.3 • Performance Improvement Projects. Projects conducted under the organization’s QAPI program address and achieve improvement in major focus areas of clinical care and non-clinical services.

1.3.1 Definitions

1.3.1.1 A project is an initiative by the organization to measure its own performance in one or more of the focus areas described in 1.3.4 and 1.3.5, undertake system interventions to improve its performance, and follow-up on the effectiveness of those interventions.

Assessment of the effectiveness of an organization’s QAPI program will include review of individual performance improvement projects. In the first two years, review will focus on whether an organization has initiated performance improvement projects. “Initiation” of a performance improvement project is defined, for purposes of these standards, as occurring when a project has progressed to the point of active collection of baseline project indicator data. In all subsequent years, reviews will focus on whether or not projects have achieved demonstrable improvement in quality indicators. For each project, the organization will be required to supply documentation sufficient to assess the extent to which the project meets the applicable standards of section 1.4 on demonstrable and sustained improvement.

1.3.1.2 Project topics and the quality indicators used to assess each project are chosen either by the organization itself, or by HCFA (for Medicare) or by the State Medicaid agency (for Medicaid) either for an individual organization or on a national or Statewide basis.

The organization will be required to conduct projects relating to certain topics selected by HCFA or the State Medicaid agency, as well as projects relating to topics of its own choosing, as outlined in 1.3.2 and 1.3.3.

1.3.1.3 A project will be considered to have achieved demonstrable improvement in a focus area during any review year in which an improvement meeting the minimum thresholds of standard 1.4.4 is attained.

It is not expected that a project initiated in a given year will necessarily achieve improvement in that same year. Some—for example, a project focusing on improving health outcomes for patients with a given condition—might continue for several years before it would be possible to measure the effect of the organization’s interventions. Such a project would not be counted as achieving improvement until the year in which the necessary level of improvement is demonstrated. (An exception for certain multi-year projects is provided under standard 1.3.7.2.)

1.3.1.4 The first review year begins on a date established by HCFA (for Medicare) or by the State Medicaid agency (for Medicaid).
All subsequent review years begin on the anniversary of the beginning of the first review year. Note that review years are not defined in terms of the dates on which reviews by HCFA or States are actually conducted. There may be instances in which an organization completes a project after the end of a review year but before the review for that year is conducted. In this case, the organization may ask that the project be considered in the review for the past review year, provided that all necessary documentation is available at the time of the review. (Of course, the project would then not be counted toward requirements for the subsequent year.)

1.3.2 Phase-in Requirements. An organization has a two year phase-in period during which its projects are not required to achieve demonstrable improvement.

1.3.2.1 Phase-in requirements for an organization contracting with Medicare or Medicaid but not both:

1.3.2.1.1 By the end of the first review year, the organization has initiated at least two projects addressing two of the focus areas specified under standard 1.3.4 and/or 1.3.5. For an organization contracting with Medicare, one of those projects relates to a topic and involves quality indicators chosen by HCFA. For an organization contracting with Medicaid, one of those projects may relate to a topic and involve quality indicators chosen by the State Medicaid agency.

1.3.2.1.2 By the end of the second review year, the organization has initiated at least two additional projects addressing two of the focus areas specified under standard 1.3.4 and/or 1.3.5 but which were not addressed by the projects initiated in the first review year. For an organization contracting with Medicare, one of those projects relates to a topic and involves quality indicators chosen by HCFA. For an organization contracting with Medicaid, one of those projects may relate to a topic and involve quality indicators chosen by the State Medicaid agency.

1.3.2.2 Phase-in requirements for an organization contracting with both Medicare and Medicaid:

1.3.2.2.1 By the end of the first review year, the organization has initiated at least three projects addressing three of the focus areas specified under standard 1.3.4 and/or 1.3.5. One of those projects relates to a topic and involves quality indicators chosen by HCFA. The second project relates to a topic and involves quality indicators chosen by the organization itself. The third project relates to a topic and involves quality indicators chosen either by the State Medicaid agency or the organization.

1.3.2.2.2 By the end of the second review year, the organization has initiated at least three additional projects addressing three of the focus areas specified under standard 1.3.4 and/or 1.3.5 but which were not addressed by the projects initiated in the first review year. One of those projects relates to a topic and involves quality indicators chosen by HCFA. The second project relates to a topic and involves quality indicators...
quality indicators chosen by the organization itself. The third project relates to a topic and involves quality indicators chosen either by the State Medicaid agency or the organization.

A project is deemed to have been initiated when it has proceeded at least to the point of baseline data collection. That is, the organization has selected a particular aspect of care for performance measurement, has identified the statistical indicator or indicators that will be used, and has begun the process of collecting the data needed for an initial assessment of its performance on the indicator(s). Review for the first year will therefore focus on compliance with standards 1.4.1 through 1.4.3.

1.3.3 Ongoing Requirements.

1.3.3.1 Requirement for an organization contracting with Medicare or Medicaid but not both: By the end of the first review year after the two-year phase-in period, and each subsequent review year, at least two of the organization’s projects have achieved demonstrable improvement in two of the focus areas specified in 1.3.4 and/or 1.3.5. For an organization contracting with Medicare, one of those projects has related to a topic and involved quality indicators chosen by HCFA. For an organization contracting with Medicaid, one of those projects may have related to a topic and involved quality indicators chosen by the State Medicaid agency.

1.3.3.2 Requirement for an organization contracting with both Medicare and Medicaid: By the end of the first review year after the two-year phase-in period, and each subsequent review year, at least three of the organization’s projects have achieved demonstrable improvement in three of the focus areas specified in 1.3.4 and/or 1.3.5. One of those projects has related to a topic and involved quality indicators chosen by HCFA. The second project has related to a topic and involved quality indicators chosen by the organization itself. The third project has related to a topic and involved quality indicators chosen either by the State Medicaid agency or the organization.

The purpose of performance improvement projects is to the quality of care and services provided to Medicare and Medicaid beneficiaries. After the phase-in (start up) period described in standard 1.3.2.2, each plan that contracts with either Medicare or Medicaid (but not both) will have to demonstrate every 12 months (beginning in the third review year) that it has improved care or beneficiary health outcomes in at least two focus areas. These focus areas may be in either clinical or non-clinical areas, as specified in 1.3.4 and 1.3.5. For an organization contracting with both Medicare and Medicaid, this requirement is not doubled - such an organization must show that it has achieved improvement in three areas (again, in any combination of clinical and non-clinical areas) every 12 months.

1.3.3.3 Requirements for all organizations.

1.3.3.3.1 Before the organization initiates another project in a previously addressed focus area, it has initiated projects that achieve demonstrable improvement in all of the focus areas specified in 1.3.4 and 1.3.5, unless HCFA (for Medicare) or the State Medicaid agency (for Medicaid) grants prior approval.
1.3.3.3.2 The project topics include both physical health and mental health/substance abuse, unless, in the case of an organization contracting with Medicaid, the organization’s benefit structure doesn’t permit this breadth.

Although it is not possible for any organization to measure all aspects of health care provided to every beneficiary, it is possible for it to measure diverse aspects of care, and care provided to diverse populations of enrollees. By undertaking a variety of quality improvement projects, an organization can improve the quality of care provided to the greatest number of its enrollees and to those enrollees who, while perhaps not great in number, are those in greatest need; e.g. specially vulnerable populations such as the mentally ill, children with special health care needs. For this reason, the managed care organization will be required to assure that the chosen topic areas for quality improvement projects are not limited to only recurring, easily measured subsets of the health care needs of its enrolled population; e.g. primary preventive care of adults, high cost care of adults.

Quality improvement projects additionally must focus both on mental and physical conditions and their care, and on all ten clinical and non-clinical areas addressed in standards 1.3.4 and 1.3.5, before it can return to one of these focus areas. Because of the requirement that two areas be completed every year, a managed care organization should have covered all clinical and non-clinical focus areas every five years. At the end of the five year cycle, HCFA (for Medicare) or the State Medicaid agency (for Medicaid) will determine whether a managed care organization has included mental health and substance abuse topics among its performance improvement projects; if the managed care organization has not, HCFA (for Medicare) or the State Medicaid agency (for Medicaid) will direct the organization to do so.

In addition, standard 1.3.1.2. allows HCFA (for Medicare) and State Medicaid agencies (for Medicaid) to specify project topics and quality indicators to be used by a particular plan, if HCFA or a State determines that the managed care organization has not achieved sufficient diversity in its quality improvement projects, such that important populations or health care services are not receiving sufficient attention within the managed care organization.

1.3.4 Clinical Focus Areas. Clinical focus areas applicable to all enrollees are as follows:

1.3.4.1 Primary, secondary, and/or tertiary prevention of acute conditions;
1.3.4.2 Primary, secondary, and/or tertiary prevention of chronic conditions;
1.3.4.3 Care of acute conditions;
1.3.4.4 Care of chronic conditions;
1.3.4.5 High-volume services;
1.3.4.6 High-risk services; and
1.3.4.7 Continuity and coordination of care.

Primary prevention consists of preventing a disease from occurring by reducing an individual’s susceptibility to an illness; e.g., immunizations are a form of primary prevention. Secondary prevention takes place once an individual is already afflicted with a condition (e.g., hypertension, asthma, or uterine cancer) but through secondary prevention (taking of medications, use of a peak flow meter, early detection) the effects of the condition can be controlled or prevented. Tertiary pre-
vention is applicable when an illness has already caused disability, but the disability can be reduced or prevented from worsening; e.g. early treatment and rehabilitation of stroke victims.

Sometimes, however, quality improvement projects can focus not on a clinical condition, per se, but on a service, particularly a high-volume service, and how it can be improved. A managed care organization may target quality improvement in its labor and delivery services, in a frequently performed surgical procedure, or across different surgical or invasive procedures. In such cases, the managed care organization would be targeting the service, as opposed to a clinical condition.

A managed care organization also must target high-risk procedures even if they may sometimes be low in frequency. A managed care organization may assess experiences with care received from specialized centers inside or outside of the organization’s network; e.g. burn centers, transplant centers, cardiac surgery centers. It could assess and improve the way in which it detects which of its members have functional disabilities and assess these members’ satisfaction with the care received from the organization. It could also analyze high-risk conditions such as invasive procedures in ambulatory settings.

Finally, an organization must also improve continuity and coordination of care. Both of these characteristics of good quality health care address the manner in which care is provided when a patient receives care from multiple providers and across multiple episodes of care. Such studies may be disease or condition-specific or may target continuity and coordination across multiple conditions. For example, an organization could assess the extent to which care is coordinated across primary care providers and mental health providers subsequent to a discharge from an inpatient psychiatric facility.

1.3.5 Non-clinical focus areas. Non-clinical focus areas applicable to all enrollees are as follows:

1.3.5.1 Availability, accessibility, and cultural competency of services;

Projects in this area should focus on assessing and improving the accessibility of specific services or services for specific conditions, including reducing disparities between services to minorities and services to other members (see also standard 1.4.4.1.4). Projects may also focus on improving the effectiveness of communications with enrollees, targeting areas of improvement identified as a result of the evaluation conducted under standard 2.3.4.

This standard works in conjunction with standard 3.1.7.1 which requires the organization to develop and monitor its own standards of timely access to all services and continuously monitor its own compliance with these standards. This standard requires that the plan go beyond examining how it evaluates compliance with its own standards, but requires the plan to identify ways to exceed its own standards and continue to identify ways to improve the ability of consumers to timely receive the services that they need. For example, a project might focus on reduction of inpatient admissions for ambulatory sensitive conditions (those for which timely ambulatory care may prevent inpatient admissions). Or it might address the promptness with which referral services are furnished in response to a positive result on a given diagnostic test.

For guidance related to cultural competency, see standard 3.1.5.

1.3.5.2 Interpersonal aspects of care, e.g., quality of provider/patient encounters; and
Donabedian defines the interpersonal components of health care as “… the management of the social and psychological interaction between client and practitioner.” They include the milieu, manner and behavior of the provider in delivering care to and communicating with the patient, and address such concerns as:

- Does a practitioner take sufficient time with the patient to explain an illness and answer questions?
- Is the patient examining room/physician office clean, comfortable and easily accessible?
- Does the patient have to a long waiting in the office before seeing a provider?

Assessment of interpersonal aspects of care can be addressed through use of consumer surveys such as the CAHPS survey.

### 1.3.5.3 Appeals, grievances, and other complaints.

Projects related to the grievance and coverage determination processes may aim either to improve the processes themselves or to address an underlying issue in care or services identified through analysis of grievances or appeals. For example, an organization with a high rate of grievances not resolved until the third or fourth step in its grievance procedure might focus on how grievances are addressed in the initial phases of the process. An organization with a high rate of grievances related to one particular type of service might instead focus on improvements in access to or delivery of that service. Similarly, an organization with a high rate of adverse determinations overturned by the Medicare independent reconsideration contractor, or by the State agency administering the State fair hearing process, might aim to reduce this rate by improving its procedures for initial review of authorization requests. An organization with a high rate of sustained adverse determinations (for example, denials of inappropriate emergency room care) might instead focus on measures to improve provider and enrollee understanding of its procedures for obtaining covered services.

### 1.3.6 Special projects.

#### 1.3.6.1 HCFA (for Medicare) or the State Medicaid agency (for Medicaid) may require an organization to conduct particular projects that are specific to the organization and that relate to topics and involve quality indicators of HCFA’s or the State Medicaid agency’s choosing.

The focus areas specified in standards 1.3.4 and 1.3.5 are intended to highlight key components of care and services for organizations serving a typical Medicare or Medicaid population. There may be instances in which HCFA or the Medicaid agency believes that some aspects of care require greater emphasis, either because of special population needs or because the organization’s performance is in need of greater improvement in some areas than in others. In this case, it may be appropriate for an organization to conduct more work in a specific area identified by HCFA (for Medicare) or the State Medicaid agency (for Medicaid).

#### 1.3.6.2 Collaborative projects. Organizations may satisfy the requirements of standards 1.3.2 and 1.3.3 by collaborating with one another, subject to the approval of HCFA or the State Medicaid agency.

Some State Medicaid agencies, as well as HCFA, have encouraged collaborative efforts, under which several contracting organizations undertake a joint quality improvement project addressing
a common topic. For Medicare, PROs are not only the convening structure for national performance improvement projects, but they are also a regional presence for convening local collaborative performance improvement projects. These standards would not preclude such collaborative efforts under either Medicare or Medicaid. However, any such initiative would need to be individually evaluated and approved, and HCFA or the State agency would establish criteria for assessing the extent to which each organization’s participation constituted compliance with these standards. For example, if several organizations conducted a joint project to improve childhood immunization rates, the State might determine that all participating organizations would be considered as having addressed the focus area that is the subject of the project. However, the State would also need to decide how improvement should be measured. If aggregate immunization rates for the entire target population improved, would all participating organizations be considered as having achieved improvement, or would the improvement for each participant have to meet the minimum thresholds specified in standard 1.4.4? These guidelines do not establish a uniform principle for this kind of question; the appropriate answer will depend on features of each particular project (such as whether interventions involve administrative changes in each individual organization or changes in the practice patterns of practitioners who serve enrollees of multiple organizations).

1.3.7 Multi-year projects. If a project is conducted over a period of more than one review year:

1.3.7.1 The project will be considered as achieving improvement in each year for which it achieves an improvement meeting the requirements specified in standard 1.4.4; or

An organization may continue a project that has already been determined to have achieved demonstrable improvement. If further improvement occurs, the project may again be considered to have achieved demonstrable improvement. However, the improvement will not be measured relative to the original baseline, but relative to the improved performance level previously scored. For example, an organization could meet standard 1.4.4 in Year One by reducing its percentage of non-immunized children from a baseline of 20 percent to a level of 18 percent. It could continue the project for an additional year, and could meet the standard again in Year Two by reducing the percentage of non-immunized children to 16.2 percent. It is not necessary that the improvements be achieved in successive years for a project to be counted in this way. For example, a four-year project might achieve the 18 percent level in its second year, 17 percent in its third year, and 16 percent in its fourth year. It would then be considered as having achieved demonstrable improvement in the second and fourth years; the improvement in the third year would not be counted because it did not represent a 10 percent reduction from the previously scored level of 18 percent.

1.3.7.2 A project may be considered as achieving improvement in each year for which it achieves an improvement that does not meet the requirements specified in standard 1.4.4, but that constitutes an intermediate target specified in a project work plan developed in consultation with HCFA or the State Medicaid agency.

An organization may undertake a particularly complex or difficult project that is not expected to achieve demonstrable improvement, as defined under standard 1.4.4, for several years (i.e., more than three years). This might occur because:

- Improvement in the targeted outcome cannot be measured for a long period; for example, the organization wishes to improve five-year survival rates for breast cancer.
• Improvement in outcomes can come only after process improvements that are not closely
enough related to outcomes to meet the requirement of standard 1.4.3.2.

• Improvement will require multiple system interventions that cannot be implemented over a
short period.

Such a project would not ordinarily be counted as achieving improvement until an improvement
meeting the thresholds of standard 1.4.4 could be documented. The organization would then
need to conduct other projects in the same focus area that achieve improvement more rapidly,
because of the requirement that improvement be achieved in two areas during each twelve month
review period after the initial two-year phase-in period. This standard creates an exception for cer­
tain multi (more than three years) - year projects with measurable interim goals.

Prior approval is required for such a project. An organization that anticipates that it will meet the
minimum requirements of this standard for a review year only if a multi-year project is counted
must request advance review of the project plan at the time the project is initiated. A multi-year
project may be approved under the following circumstances:

1. The timetable for the project is reasonably related to the complexity of the project or the
length of time that must elapse before the outcomes of the project can be assessed. There
must be a clear and defensible reason for defining a project as a multi-year project.

2. There must be significant ongoing activity related to the project during each of the review
years for which the project is to be counted. For example, while a project that involves a
one-time system change that is expected to affect five-year survival rates cannot measure its
success until five years have elapsed, it will not necessarily be considered as an ongoing proj­
et during each of the intervening years. It would be treated as ongoing only if it provided
for continuous data collection throughout the project period, along with ongoing efforts to
identify and implement system changes aimed at improving the long-term outcome.

3. The project must specify some form of quantifiable interim goals or intermediate
outcomes for each project year, so that it is possible to monitor the continuing progress of
the project. For example, an organization conducting a project on breast cancer survival
rates might track a process of care (such as mammography screening rates) or an intermedi­
ate outcome (such as stage of breast cancer at detection) and set goals for each year of the
project.

1.4 Attributes of Performance Improvement Projects

An individual project involves identification of an aspect of clinical care or non-clinical services to
be studied; specification of quality indicators to measure performance in the selected area; collec­
tion of baseline data; identification and implementation of appropriate system interventions to
improve performance; and repeated data collection to assess the immediate and continuing effect
of the interventions and determine the need for further action.

• Standard 1.4.1 addresses the relevance and importance of each project conducted by an organi­
zation.

• Standards 1.4.2 and 1.4.3 assess the meaningfulness of the specific performance indicators
selected for measurement in an individual project and the validity and reliability of the
measurement.
• Standards 1.4.4 and 1.4.5 evaluate the extent to which a project resulted in demonstrable and sustained improvement.

An individual project is regarded as successfully completed only if it meets each of these standards, 1.4.1 through 1.4.4. Because the key project components identified in those standards are interdependent, failure on any one of them invalidates the entire project. For example, if the organization chooses to measure its performance on quality indicators that have no likely relation to outcomes, improvement in the indicators cannot be expected to improve health or functional status. If the organization cannot collect reliable data, it cannot demonstrate improvement, and so on. The organization’s documentation of a completed project must provide evidence of compliance with each standard.

1.4.1 Selection of topics. Within each required focus area, the organization selects a specific topic or topics to be addressed by a project.

1.4.1.1 Topics are identified through continuous data collection and analysis by the organization of comprehensive aspects of patient care and member services.

1.4.1.2 Topics are systematically selected and prioritized to achieve the greatest practical benefit for enrollees.

1.4.1.3 Selection of topics takes into account: the prevalence of a condition among, or need for a specific service by, the organization’s enrollees; enrollee demographic characteristics and health risks; and the interest of consumers in the aspect of care or services to be addressed.

These standards relate to focus areas for projects selected by the organization itself. Projects conducted at the specific direction of HCFA or the Medicaid agency will be deemed to have met this standard.

Documentation of completed projects must show the basis on which the organization selected project topics; i.e., continuing monitoring of population needs and preferences and organizational performance; identification of areas of concern; and clear criteria, identified by the organization, for prioritizing the areas to be addressed.

As standards 1.4.1.4 and 1.6.1.3 indicate, the organization’s affiliated providers and enrollees must have formal opportunities to participate in the selection and prioritization of QAPI projects.

Sources of information

The QAPI program must routinely collect and interpret information from all parts of the organization, to identify areas of clinical concern, health delivery system issues, and issues in member services. Types of information to be reviewed include:

Population information. Data on enrollee characteristics relevant to health risks or utilization of clinical and non-clinical services, including age, sex, race/ethnicity/language, and disability or functional status.

Performance measures. Data on the organization’s performance as reflected in standardized measures, including, when possible: local, state, or national information on performance of comparable organizations.

Other utilization, diagnostic, and outcome information. Data on utilization of services,
procedures, medications and devices; admitting and encounter diagnostess; adverse incidents (such as deaths, avoidable admissions, or readmissions); and patterns of referrals or authorization requests.

**External data sources.** Data from outside organizations, including Medicare or Medicaid fee-for-service data, data from other health plans, and local or national public health reports on conditions or risks for specified populations. (In newly formed organizations, or organizations serving a new population, external data may be the major source of potential project topics.)

**Enrollee information on their experiences with care.** Data from surveys (such as the Consumer Assessment of Health Plans Study, or CAHPS), information from the grievance and appeals processes, and information on disenrollments and requests to change providers. (Note that general population surveys may under-represent populations who may have special needs, such as linguistic minorities or the disabled. Assessment of satisfaction for these groups may require over sampling or other methods, such as focus groups or enrollee interviews.) The QAPI program should assess, in addition to information generated within the organization, information supplied by purchasers, such as data on complaints and disenrollments processed by the Medicaid agency.

The QAPI program’s project selection process must explicitly take into account quality of care concerns identified by a quality review and improvement organization (QIO) or external quality review organization (EQRO). While it is not expected that each such concern will be addressed through a formal QAPI project meeting the requirements of these standards, the organization should be able to show that issues raised by these organizations were considered in the formulation of its QAPI program agenda and that alternative remedial action is taken in cases for which a QAPI project is not initiated.

**Prioritizing topics**

In general, a clinical or non-clinical issue selected for study should affect a significant portion of the organization’s Medicare or Medicaid enrollees (or a specified subpopulation of enrollees) and have a potentially significant impact on enrollee health, functional status, or satisfaction. There may be instances in which infrequent conditions or services warrant study, as when data show a pattern of unexpected adverse outcomes; however, the prevalence of a condition or volume of services involved must be sufficient to permit meaningful study.

A project topic may be suggested by patterns of inappropriate utilization—for example, frequent use of the emergency room by enrollees with a specific diagnosis. However, the project must be clearly focused on identifying and correcting deficiencies in care or services that might have led to this pattern, such as inadequate access to primary care, rather than on utilization and cost issues alone. This is not to say that the organization may not make efforts to address overutilization, but only that such efforts might not be considered QAPI activities for the purpose of assessing compliance with these standards, unless the primary objective is to improve health outcomes. Thus it would be acceptable for a project to focus on patterns of overutilization that present a clear threat to health or functional status, for example because of a high risk of iatrogenic problems or other adverse outcomes.

Because the achievement of demonstrable improvement is a central criterion in the evaluation of QAPI projects, projects must necessarily focus on areas in which meaningful improvement can be effected through system interventions by the organization. Most organizations are likely to give priority to areas in which there is significant variation in practice and resulting outcomes within the
organization, or in which the organization’s performance as a whole falls below acceptable benchmarks or norms.

It is recognized that the requirement for demonstrable improvement creates incentives for organizations to focus their QAPI activities on aspects of care in which rapid and measurable improvement is possible through simple interventions. It is not the intention of these standards to discourage organizations from undertaking more complex projects or innovative projects that have a high risk of failure but that offer some offsetting potential for making a significant difference in the health or functional status of enrollees. Organizations considering such projects should avail of themselves of the opportunity, under standard 1.3.7.2, to work in consultation with HCFA or the State agency to develop long-range goals for projects and establish agreed-upon criteria for evaluation of the organization’s progress in implementing its project.

Organizations using physician incentive plans

An organization that adopts a physician incentive plan that places physicians at substantial financial risk (as defined in 42 CFR 422.208(d)) for the care of Medicare or Medicaid enrollees must include in its QAPI program continuous monitoring of the potential effects of the incentive plan on access or quality of care. This monitoring should include assessment of the results of surveys of enrollees and former enrollees required under 42 CFR 422.479(h). In addition, the organization should review utilization data to identify patterns of possible underutilization of services that may be related to the incentive plan (such as low rates of referral services ordered by physicians at risk for the cost of such services). Concerns identified as a result of this monitoring should be considered in development of the organization’s focus areas for QAPI projects.

1.4.1.4 The QAPI program provides opportunities for enrollees to participate in the selection of project topics and the formulation of project goals.

The organization must establish some mechanism for obtaining enrollee input into the priorities for its QAPI program. Possibilities could include enrollee representation on a quality assurance committee or subcommittees or routine inclusion of QAPI issues on the agenda for a general enrollee advisory committee. To the extent feasible, input should be obtained from enrollees who are users of or concerned with specific focus areas; for example, priorities in the area of mental health or substance abuse services should be developed in consultation with users of these services or their families.

1.4.2 Quality indicators. Assessment of the organization’s performance for each selected topic is measured using one or more quality indicators.

1.4.2.1 Quality indicators are objective, clearly and unambiguously defined, and based on current clinical knowledge or health services research. When indicators exist that are generally used within the public health community or the managed care industry and are applicable to the topic, use of those measures is preferred.

Each QAPI project must establish one or more quality indicators that will be used to track performance and improvement over time. An indicator is a variable reflecting either a discrete event (an older adult has/has not received a flu shot in the last 12 months) or a status (an enrollee’s hypertension is/is not under control). In either case, an indicator must be clearly defined and subject to objective measurement.
An organization may adopt standard indicators from outside sources, such as the National Committee for Quality Assurance (NCQA)’s Healthplan Employer Data and Information Set (HEDIS) or the Foundation for Accountability (FACCT)’s measures, or develop its own indicators on the basis of clinical literature or findings of expert consensus panels. When the organization develops its own indicators, it must be able to document the basis on which it adopted an indicator. It also should be able to show that the process included consultation with affiliated providers and enrollees to assure that measures are meaningful, relevant to the organization’s enrolled population, and reflective of accepted standards of practice.

An organization is not required to select specific indicators at the outset of a QAPI project. There may be instances in which a project would begin with more general collection and analysis of baseline data on a topic, and then narrow its focus to more specific indicators for measurement, intervention, and reevaluation. The success of the project will be assessed in terms of the indicators ultimately selected.

1.4.2.2 **All indicators measure changes in health status, functional status, or enrollee satisfaction, or valid proxies of these outcomes. Measures of processes are used as a proxy for outcomes only when those processes have been established through published studies or a consensus of relevant practitioners to be significantly related to outcomes.**

The object of the QAPI program is to improve outcomes, defined as objective measures of patient health, functional status, or satisfaction following the receipt of care or services. Under this definition, measures of costs, or other administrative results do not constitute outcomes. It is recognized, however, that relatively few standardized performance measures actually address outcomes. For example, of the 12 effectiveness measures in HEDIS 3.0-1998 in active use, only one (health of seniors) is truly outcome-related. Even when outcome measures are available, their utility as quality indicators for QAPI projects may be limited because outcomes can be significantly influenced by factors outside the organization’s control; e.g., poverty, genetics, environment. In other instances, improvement is possible, but the resources and sophistication needed to analyze the complex factors involved in the outcome and develop meaningful interventions might be beyond the reach of many organizations.

This standard therefore does not require that quality indicators always be outcome measures. Process measures are acceptable so long as the organization can show that there is strong clinical evidence that the process being measured is meaningfully associated with outcomes. To the extent possible, this determination should be based on published guidelines that support the association and that cite evidence from randomized clinical trials, case control studies, or cohort studies. A plan may furnish its own similar evidence of association between a process and an outcome so long as this association is not actually contradicted by a published guideline. Although published evidence is generally required, there may be certain areas of practice for which empirical evidence of process/outcome linkage is limited. At a minimum, the organization must be able to demonstrate that there is a consensus among relevant practitioners with expertise in the defined area as to the importance of a given process.

1.4.2.3 **Indicators selected for a topic in a clinical focus area (under standard 1.3.4) include at least some measure of change in health status or functional status or process of care proxies for these outcomes. Indicators may also include measures of satisfaction.**
While organizations are encouraged to consider enrollee satisfaction as an important aspect of care in any of the clinical areas listed in standard 1.3.4, improvement in satisfaction must not be the sole demonstrable outcome of a project in any of these areas. Some improvement in health or functional status must also be measured. (Note that this measurement can rely on enrollee surveys that address topics in addition to satisfaction. For example, self-reported health status may be an acceptable indicator, or reduction in reported school absences could be used as an indicator of functional status in children.) For projects in the non-clinical areas, use of health or functional status indicators is generally preferred, particularly for projects addressing access and availability. However, there may be some non-clinical projects for which enrollee satisfaction indicators alone are sufficient.

1.4.2.4 The organization selects some indicators for which data are available that allow comparison of the organization’s performance to that of similar organizations or to local, state, or national benchmarks.

As is discussed under standard 1.4.4, demonstrable improvement may be defined either as reaching a prospectively set benchmark or as improving performance by a fixed percentage amount. While the latter form of improvement is acceptable for the purpose of standard 1.4.4, an organization that works only towards incremental improvements relative to its own past performance can never determine that its performance is optimal—or even minimally acceptable relative to prevailing standards in the community. Whenever possible then, an organization should select indicators for which data are available on the performance of other comparable organizations (or other components of the same organization), or for which there exist local or national data for a similar population in the fee-for-service sector. Because the availability of such data will vary by topic and by population, this standard does not set a fixed number of focus areas for which benchmarks must be adopted. However, every organization should be able to establish benchmarks for at least some project topics (e.g., immunizations or initiation of prenatal care).

1.4.3 Data collection and methodology. Assessment of the organization’s performance on the selected indicators is based on systematic, ongoing collection and analysis of valid and reliable data.

Assessment of compliance with this standard will be coordinated with review of the organization’s information systems under standard 1.5.

1.4.3.1 The organization establishes a baseline measure of its performance on each indicator, measures changes in performance, and continues measurement for at least one year after a desired level of performance is achieved.

Documentation of completed QAPI projects must include a detailed account of the data collection methodology used and the procedures through which the organization has assured that the data are valid and reliable.

Methodology

Most quality indicators are reported in terms of percentages or ratios; for example, the percentage of pregnant women who begin prenatal care in the first 13 weeks of the pregnancy. An organization adopting this measure must show that it can accurately compute the relevant denominator or population at risk (all pregnant women) and the numerator or indicator (pregnant women beginning prenatal care in the specified time frame).
Identification of the population at risk requires particular scrutiny. For some indicators, the population can be identified in readily available administrative data (all children under age 2, or all inpatient discharges with a diagnosis of heart attack). For others, needed data may be more difficult to obtain. For example, even in an organization that collects individual encounter data, this data might not be able to identify all enrollees with diabetes, because physicians may not report ongoing conditions at every encounter. Instead, the organization must identify the population at risk through a patient disease registry, if present, or through a pharmacy data base.

Therefore, the organization must clearly specify what data are used to identify the population at risk and show that these data can reliably and validly capture the entire population; i.e., without systematically excluding a subset or subsets of the population. The organization may study a sample of the relevant population. If so, it must show that the sample size is sufficient to achieve an appropriate level of confidence in the estimates of the incidence of the indicator under study, and that pre and post sample sizes are sufficiently large and representative to allow tests of statistical significance to be performed on any apparent change (improvement in the rate of occurrence of selected indicators) (see standard 1.4.4.2). The organization also must show that the sampling method is such that all members of the population are equally likely to be selected. (This will generally mean random sampling, although stratified random sampling may be appropriate when the intent is to compare care by different practitioners or at different sites.)

In addition to assuring that data collection is complete and free from bias, the study methodology may need to address other issues in the computation of the indicator. For example, when an indicator relates to receipt of a specific service, the denominator may need to be adjusted to reflect instances in which the patient refuses the service or the service is contraindicated. Similar problems may affect the numerator. For example, in a study of immunization rates, the organization would need to establish how it would detect and account for instances in which immunizations were received at school or at a health department, rather than through the primary care practitioner.

Validation

Data most commonly will be derived from administrative data generated by the organization’s health information system or from review of medical records. In assessing non-clinical services, other sources such as enrollee or provider surveys may be appropriate. When data are derived from the health information system, their reliability is obviously a function of the general integrity of the system. In this case, assessment of compliance with this standard will be coordinated with review of compliance with the information system requirements in standard 1.5.

When data are derived from direct review of medical records or other primary source documents, steps must be taken to assure that the data are uniformly extracted and recorded. Appropriately qualified personnel must be used; this will vary with the nature of the data being collected and the degree of professional judgment required. There must be clear guidelines or protocols for obtaining and entering the data; this is especially important if multiple reviewers are used or if data is collected by multiple subcontractors. Inter-reviewer reliability should be assured through, for example, repeat reviews of a sample of records.
NOTE: If the indicator selected for a QAPI project is a performance measure that the organization is required to report routinely to HCFA or a State Medicaid agency, review of compliance in this area might be coordinated with whatever validation process HCFA or the State establishes for such reporting. Furthermore, note that all data collection for QAPI projects is subject to the confidentiality requirements of standard 2.2.1.

1.4.3.2 When sampling is used, sampling methodology for assessment of the organization’s performance shall be such as to ensure that the data collected validly reflect:

1.4.3.2.1 the performance of all practitioners and providers who serve Medicare or Medicaid enrollees and whose activities are the subject of the indicator; and

Once a topic has been selected, the organization must assure that its measurement and improvement efforts are system-wide. Each project must, to the extent feasible, reach all providers in its network who are involved in the aspect of care or services to be studied. This standard does not establish a requirement that an organization review the performance of each and every provider who furnishes the services that are the subject of the project. Sampling is acceptable so long as the organization assures that its samples are genuinely random. The organization must be able to show that:

- Each relevant provider has a chance of being selected; no provider is systematically excluded from the sampling;
- Each provider serving a given number of enrollees has the same probability of being selected as any other provider serving the same number of enrollees; and
- Providers who were not included in the sample for the baseline measurement have the same chance of being selected for the follow-up measurement as providers who were included in the baseline.

This standard is, of course, easier to meet if the organization selects for study a condition that affects relatively few of its enrollees or is treated by a limited number of providers. However, the organization might then be unable to show that its selection of topics meets the criteria in standard 1.4.1, including the core requirement that topics be selected so as to achieve the greatest practical benefit for enrollees.

A Medicare organization may use a single sample that combines Medicare members with other members if it is authorized to do so by the Medicare project officer. A combined sample will only be authorized when there is substantial empirical evidence that performance has been similar for the groups that are combined in the single sample. However, because States have to report to HCFA the results of performance improvement projects relative to the Medicaid population, States typically will require when organizations conduct a study that includes multiple populations (e.g., Medicaid, Medicare, and commercial) that Medicaid organizations use a stratified sample that can show demonstrable improvement for the Medicaid population separately. However, this standard does not prohibit States from permitting Medicaid organizations to use other approaches. States and their Medicaid organizations are free to collaborate to develop ways to supply the States with the information they need while minimizing the burden imposed upon Medicaid organizations.
1.4.3.2.2 the care given to the entire population (including special populations with complex care needs) to which the indicator is relevant.

Similar to the equal treatment of all providers and practitioners by the sampling methodology, a sampling methodology should not exclude any population subgroups to which the topic area and indicators are applicable. For example, when studying well child care, a managed care organization should not exclude children with special care needs whose primary care provider is a specialist other than a pediatrician or family medicine practitioner. When studying use of preventive services an organization needs to design its study to include all persons who are in need of the service (e.g. routine health screening) as opposed to including only those individuals who have already made a visit to a managed care organization’s providers.

1.4.4 Demonstrable improvement. The organization’s interventions result in significant demonstrable improvement in its performance as evidenced in repeat measurements of the quality indicators specified for each performance improvement project undertaken by the organization.

The organization must demonstrate, through repeated measurement of the quality indicators selected for the project, meaningful change in performance relative to the performance observed during baseline measurement. The repeat measurement should use the same methodology as the baseline measurement, except that, when baseline data was collected for the entire population at risk, the repeat may instead use a reliable sample. When an organization measures its performance using the identified indicators, it can do so by collecting information on all individuals, encounters or episodes of care to which the indicator is applicable (a census) or by collecting information on a representative subset of individuals, encounters, providers of care, etc. Standards 1.4.4.1 and 1.4.4.2 address standards for achieving “demonstrable” improvement when using a census and a sample, respectively.

1.4.4.1 When a project measures performance on quality indicators by collecting data on all units of analysis in the population to be studied (i.e., a census), significant improvement is demonstrated by achieving:

1.4.4.1.1 in the case of a national Medicare project, a benchmark level of performance defined in advance by HCFA;

1.4.4.1.2 in the case of a statewide Medicaid project, a benchmark level of performance defined in advance by the State Medicaid agency; or

1.4.4.1.3 in the case of a project developed by the organization itself, a benchmark level of performance that is defined in advance by the organization. The organization’s benchmark must reduce the performance gap (the percent of cases in which the measure is failed) by at least 10 percent.

1.4.4.1.4 in the case of a project developed by the organization to reduce disparities between minorities and other members, a reduction of at least 10 percent in the number of minority enrollees (or the specified unit of analysis) that do not achieve the desired outcome as defined by the quality indicators.
**Benchmark.** Benchmarks will be established by HCFA for national projects that the organization participates in. Similarly, State Medicaid agencies will establish benchmarks for Statewide quality improvement projects that the organization participates in. When the project is one determined by the managed care organization, the organization’s benchmark must represent at least a ten percent reduction in enrollees not receiving the care or services under study. Benchmarks must also reflect performance in other organizations, local or national norms as established through comparative data, or reasonable expectations of optimum performance. The organization must be able to document the basis on which its benchmark was determined.

**Percent change.** An organization meets this standard if, for example, its child immunization rate is 80 percent in the baseline and increases to 82 percent, because the percentage of children not immunized has dropped from 20 percent to 18 percent, a 10 percent reduction. An organization whose baseline rate was 60 percent would have to reach 64 percent—a reduction in non-immunized children from 40 percent to 36 percent. (Note that, to assure uniform computation of improvement across indicators, all indicators must first be stated in the form of a positive outcome, and improvement measured as a reduction in its inverse.)

The requirement for a 10 percent reduction in adverse outcomes is based on two considerations. First, the use of a constant percentage reflects the likelihood that change is harder to achieve when an organization’s baseline performance is already superior. Thus the organization with an 80 percent immunization rate is only expected to achieve a 2 percent improvement, while the organization with a 60 percent rate must achieve a 4 percent improvement. Second, the 10 percent level is consistent with results HCFA has observed in successful improvement projects sponsored by the agency.

1.4.4.2 When a project measures performance on quality indicators by collecting data on a subset (sample) of the units of analysis in the population to be studied, significant improvement is demonstrated by achieving the benchmarks specified under 1.4.4.1, and the quantitative improvement demonstrated in the repeated measurements is statistically significant with a $p$ value less than or equal to .10.

When measurements of performance are obtained from samples of the study population, any observed change in the measurement of the indicators must be evaluated to determine if the observed change represents a “real” change in the organization’s performance or is likely due to randomly occurring differences in the sample populations from which the two measures were obtained. Reviewers of projects will be required to evaluate the results of “tests of significance” of the differences between the two measures. Such tests can inform all parties about the probability that the observed differences in “pre” and “post” measures are the result of chance alone, or are likely the result of the organization’s purposeful intervention. These tests of statistical significance calculate the probability (“$p$ value”) that the observed difference could have been due to chance alone. QISMC has adopted a conservative (but conventional) threshold, requiring that when an organization reports that it has achieved an improvement in its performance, that tests of statistical significance indicate that there is no greater than a ten percent probability that such measurement could have occurred by chance.

1.4.4.2.1 The sample or subset of the study population shall be obtained through random sampling.
1.4.4.2 The samples used for the baseline and repeat measurements of the performance indicators shall be chosen using the same sampling frame and methodology.

In order to accurately measure improvement, it is essential that the measures of performance before and after the organization’s interventions be comparable. The same methods for identifying the target population and for selecting individual cases for review must be used for both measurements. For example, in a project to improve care of diabetes, it would not be acceptable to draw the baseline sample from a population identified on the basis of diagnoses reported in ambulatory encounter data, and draw the follow-up sample from a population identified on the basis of pharmacy data. In a project to address follow-up after hospitalization for mental illness, it would not be acceptable to shift from a sampling method under which an individual with multiple admissions could be chosen more than once to a method under which the individual could be chosen only once.

1.4.4.3 The improvement is reasonably attributable to interventions undertaken by the organization (i.e., a project and its results have face validity).

It is expected that interventions associated with improvements on quality indicators will be system interventions; i.e., educational efforts, changes in policies, targeting of additional resources, or other organization-wide initiatives to improve performance. Interventions that might have some short-term effect but that are unlikely to induce permanent change (such as a one-time reminder letter to physicians or beneficiaries) are insufficient.

The organization is not required to demonstrate conclusively (for example, through controlled studies) that a change in an indicator is the effect of its intervention; it is sufficient to show that an intervention occurred that might reasonably be expected to affect the results. Nor is the organization required to undertake data analysis to correct for secular trends (changes that reflect continuing growth or decline in a measure as a result of external forces over an extended period of time).

To the extent feasible, however, the organization should be able to demonstrate that its data have been corrected for any major confounding variables with an obvious impact on the outcomes. (For example, an organization should not use a baseline measure of asthma admissions during pollen season and then measure an improvement during another season.)

To the extent feasible, interventions should be designed to address underlying system problems uncovered in the analysis, rather than simply to improve performance on a specific indicator. For example, the organization might determine that one factor in poor outcomes for a given condition was an access problem: too few providers in a given specialty or in a given part of the service area. While the immediate intervention might be to recruit additional providers, the finding should also trigger a review of the organization’s policies and procedures for ongoing monitoring of network adequacy.

The expectation of system-level intervention is in contrast to that expressed in some earlier Medicare guidelines on quality assurance activities, that intervention would occur at a provider-specific or patient-specific level. This does not mean that individual instances of substandard care observed in the course of QAPI projects should merely be recorded for statistical purposes and then forgotten. For example, if reviewers identify a specific case in which an enrollee’s health is in jeopardy because a given test result has never been followed up, there is clearly an ethical and professional responsibility to assure that the specific needs of that enrollee are promptly addressed. In other instances, findings of QAPI studies may trigger intensive review of the practice patterns of an
individual provider, leading to interventions in the form of counseling, possible contract sanctions, or reporting to appropriate professional disciplinary bodies.

1.4.5 Sustained improvement. The organization sustains the improvements in performance described in 1.4.4 for at least one year after the improvement in performance is first achieved. Sustained improvement is documented through the continued measurement of quality indicators for at least one year after the performance improvement project described in 1.4.4 is completed.

The organization must repeat measurement of the indicators one year after the initial indicator measurement on the basis of which demonstrable improvement was achieved. This is necessary in order to demonstrate that the improvement that was achieved has been sustained. We recognize that because of random year-to-year variation and sampling error, performance on any given individual measure may decline in the second measurement. However, when all of the repeat measurements for a given review year are taken together, this decline should not be statistically significant and should never be statistically significant in two succeeding years (that is, with all of the projects remeasured in each of the two years). Therefore, when all of the organization’s repeat measurements for a given review year across all clinical and non-clinical focus studies are taken together, the combined repeat measurements in the aggregate must demonstrate that the improvement over the combined original baseline performance levels still meets the requirements of 1.4.4.1 (i.e., meets a predefined benchmark or shows a 10% reduction in the performance gap) and, if a sample is used, meets the requirements of 1.4.4.2 (requiring a “p” value of $\leq .10$).

Note that a project that has achieved improvement, and under which no further system interventions are undertaken by the organization, will not be regarded as an ongoing project for the purposes of standard 1.3.3 during the period that elapses between the measurement of improvement and the repeat measurement. The organization must carefully distinguish between active projects and projects that have been concluded but for which the repeat measurement has not yet been conducted.
Appendix C: Terms and Acronyms

QISMC Quality Improvement Systems for Managed Care
SAMHSA Substance Abuse and Mental Health Services Administration
CMHS Center for Mental Health Services
HCFA Health Care Financing Administration
QAPI Quality Assessment and Performance Improvement Program
EQRO External Quality Review Organization
PRO Peer Review Organizations
MCO Managed Care Organizations
HMO Health Maintenance Organization
Appendix D:
Examples of Topics for Performance Improvement Projects Based on QISMC Principles

Choice
Strategies for enabling consumers to choose a provider
Strategies for enabling consumers to choose an inpatient facility
Strategies for enabling consumers to choose a specialist
Strategies to ensure a sufficient number of number of providers
Assessing the cause for consumers changing providers
Strategies for responding to consumer preferences under mandatory enrollment

Marketing
Ensuring that marketing efforts serve to inform consumers
Ensuring that marketing efforts are not excluding consumers with more

Access
Strategies to improve access in rural areas
Strategies to improve access for low income and minority populations
Strategies to ensure that cost controls do not restrict access for high cost patients
Strategies to examine barriers in obtaining services
Assessing access to specialists
Strategies for ensuring access to appropriate inpatient services
Strategies to ensure timely initiation of treatment

Benefits
Assessing adequacy of benefit package
Assessing consumers' out-of-pocket costs
Assessing coverage for alternative medicine and other treatments
Ensuring that behavioral health benefits are adequate in integrated plans
Ensuring that benefits are not reduced for the elderly and the poor

Staffing
Assessing the appropriateness of staff credentials and training
Ensuring that inpatient facilities are adequately staffed

Denials
Ensuring that denials are appropriate
Ensuring that behavioral health services are not disproportionately denied
Ensuring that denials are not serving to ration care
Doctor/Patient Relationship
Strategies for enabling consumers to retain their doctor when switching plans Ä
Assessing the quality of the doctor-patient relationship Ä
Assessing the adequacy of measures to protect confidentiality Ä
Assessing the patient’s participation in treatment Ä

Information to Consumers
Strategies to insure that consumers are adequately informed about the plan Ä
Ensuring that consumers have sufficient information about incentivesÄ
Assessing the consequences of “gag rules.”
Insuring that consumers are adequately informed about new treatments Ä
Insuring that consumers understand results of report cardsÄ

Impact on Providers
Assessing the consequences of limiting access to panels Ä
Consequences to providers of penalties for exceeding limits on tests and referralsÄ
Ensuring that research and drug development is not unduly limited by cost containment Ä
Ensuring timely reimbursement for providers Ä
Ensuring that paperwork burden is not excessiveÄ

Consumer Outcomes
Ensuring the availability of wrap around services in substance abuse treatment
Assessing “against medical advice” discharges from substance abuse treatment
Assessing the detection of mental health problems in primary care settings

Health Prevention and Education
Assessment of education programs for family members of consumers with mental illness
Appendix E:

Examples of Instruments for Performance Improvement Projects based on qismc principles

Recommended Instruments

We have focused on this list of instruments because they address generic populations and a variety of domains. Quality improvement projects will focus on a variety of populations. If the project is focused on a specific disease (i.e. Depression) then the specific assessment instruments for will have to be reviewed.

We have focused on this list of instruments because they address generic populations and a variety of domains. Quality improvement projects will focus on a variety of populations. If the project is focused on a specific disease (i.e. Depression) then the specific assessment instruments for will have to be reviewed.

<table>
<thead>
<tr>
<th>INSTRUMENT</th>
<th>DOMAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANSÄ</td>
<td></td>
</tr>
<tr>
<td>Healthcare Employer Data Information Set (HEDIS)</td>
<td>Alcohol and other drug addition</td>
</tr>
<tr>
<td>Addiction Severity Index (ASI)</td>
<td>Alcohol and other drug addition</td>
</tr>
<tr>
<td>Adolescent Comprehensive Addiction Severity Index (CASI)</td>
<td>Alcohol and other drug addition</td>
</tr>
<tr>
<td>Beck Anxiety Inventory (BAI)</td>
<td>Anxiety</td>
</tr>
<tr>
<td>Structured Clinical Interview for DSM-IV (SCID)</td>
<td>Depression</td>
</tr>
<tr>
<td>Child Behavioral Check list (CBCL)</td>
<td>Functioning</td>
</tr>
<tr>
<td>Youth Self Report (YSR)</td>
<td>Functioning</td>
</tr>
<tr>
<td>Global Assessment of Functioning (GAF)</td>
<td>Functioning</td>
</tr>
<tr>
<td>Consumer Assessment of Behavioral Health Plans (CABHPS)</td>
<td>Satisfaction</td>
</tr>
<tr>
<td>MHSIP Consumer Survey</td>
<td>Satisfaction</td>
</tr>
<tr>
<td>Brief Symptom Inventory (BSI)</td>
<td>Symptoms</td>
</tr>
<tr>
<td>Brief Psychiatric Rating Scale (BPRS)</td>
<td>Symptoms</td>
</tr>
<tr>
<td>Behavior and Symptom Identification Scale (BASIS-32)</td>
<td>Symptoms and Functioning</td>
</tr>
<tr>
<td>Lehman Quality of Life</td>
<td>Quality of Life</td>
</tr>
</tbody>
</table>
APPENDIX F:
Examples of Benchmarks for Performance Improvement Projects Based on QISMC Principles

Introduction for Benchmarking Databases

This appendix is a compilation of a database search conducted by the Evaluation Center@HSRI. This appendix describes the databases that we were able to locate via internet searches and references from colleagues in the field of mental health evaluation research. A table is provided as an overview of the databases that we have located to date. We intend to elaborate, to the extent possible, on this appendix during further project work.

State Inpatient Databases (SID)
Author: The SID is part of the Healthcare Cost and Utilization Project (HCUP), sponsored by the Agency for Health Care Policy and Research.
Contents: The SID contains information obtained from inpatient discharge abstracts of patients from hospitals in 22 participating states. This includes principal and secondary diagnosis, principal and secondary procedures, admission and discharge status, patient demographics, expected payment source, total charges, and length of stay. Specific information pertaining to mental health can be found at www.ahcpr.gov/browse/mental.htm
Maintenance: Research Reports are released on regular basis
Database form: CD-ROM
Contact information: HCUP SID Central Coordinator
The MEDSTAT Group
5425 Hollister Avenue, Suite 140
Santa Barbara, CA 93111
Phone: (805) 681-5876
FAX: (805) 681-5888
E-mail: hcupsid@medstat.com

National Reporting Program for Mental Health Statistics
Author: Center for Mental Health Services
Contents: Contains national statistical information on mental health services and their recipients. This includes information about health organizations and their staff, finances, and clients.
Available studies include Utilization of Mental Health organizations by Elderly Persons, The Effect of Inflation on Expenditures by Mental Health Organizations, and Availability of Psychiatric Beds in the United States. Studies can be ordered from the website given under contact information. Information is obtained through national studies and surveys.

Maintenance: Years of information ranges from the late 1800’s to the present
Database form: Pamphlets, fact sheets, booklets, book/monographs, newsletters and reports
Contact information: ken@mentalhealth.org
Information can be ordered directly from www.mentalhealth.org/publications/ordering.cfm

The Numbers Count:
Mental Illness in America
Author of Database: National Institute of Mental Health
Contents of Database: A collection of national statistics pertaining to people diagnosed with mental disorders. The data focuses on major depression, manic-depressive illness, schizophrenia, and obsessive compulsive disorder. The report is available at the website www.nimh.nih.gov/publicat/numbers.cfm.
Maintenance: Contains epidemiological and economic data from the 1990’s
Analysis of Health Service Areas: Another Piece of the Psychiatric Workforce Puzzle

Authors:
Peter Eveland, Ed.D.  
G.E. Alan Dever, Ph.D., M.T.  
Edward Schafer, Ph.D.  
Collete Sprinkel, M.A.  
Stephanie Davis, B.B.A.  
Michele Rumpf, B.A.

Contents: Examines the use of two benchmark standards for the number of psychiatrists needed per 100,000 population. The paper reports an analysis of the distribution of psychiatrists on Georgia.

Maintenance: The study was conducted in 1996.

Database form; Hardcopy (magazine article)

Contact information:  
The article can be found in Psychiatric Services, July 1998 Vol. 49, No. 7, pp.956-60  
The authors are affiliated with the community science program at  
Mercer University School of Medicine  
1550 College Street  
Macon, Georgia 31207  
Dr. Eveland can be contacted by e-mail at eveland.ap@gain.mercer.edu

Gambling Behavior and Impact Study

Author: National Gambling Impact Study Commission

Contents: The first section of the report compares the survey methods and key findings on gambling participation of a 1998 adult telephone survey and results of a 1975 national probability survey of adult gambling behavior and attitudes. The second section of the report describes the survey questionnaire’s diagnostic screening approach, based on standardized psychiatric criteria for problem and pathological gambling, as well as the findings on the prevalence and correlates of pathological and other types of gambling among the adult population. The third section of the report estimates the economic costs engendered for the individual, family, and community by the most severely affected types of adult gamblers. The fourth section turns to the youth survey, providing the key findings concerning youth participation in types of gambling and the prevalence of gambling problems in the context of findings on these dimensions among adults. The fifth section reports the findings of a multilevel statistical analysis of the 100-community database, estimating the effects of casinos on a variety of local economic and social indicators. The sixth and final section develops the qualitative counter to the statistical analysis of community effects, summarizing the results of 10 community case studies and including two of these cases in detail.

*Maintenance: The report was completed in 1999.

Database form: The report is available online at the website www.norc.uchicago.edu/new/gamb-fin.htm

Contact Information: To ask about NORC carrying out a specific survey, please contact:  
Harrison Greene  
greene-harrison@norcmail.uchicago.edu  
(773) 256-6118

*Information taken directly from the Gambling Impact and Behavior Study
National Youth Survey (NYS)

Author: National Institute of Mental Health

Contents: NYS was designed to gain a better understanding of both conventional and deviant types of behavior by youths and involved collecting information from a representative sample of young people in the United States. The surveys contain data on disruptive events in the home, parental aspirations for youth, labeling, integration of family and peer contexts, social isolation, attitudes toward deviance in adults and juveniles, parental discipline, community involvement, education, employment, skills, aspirations, encouragement, normlessness, attitudes toward deviance, exposure to delinquent peers, self-reported depression, delinquency, victimization, pregnancy, abortion, use of mental health and outpatient services, violence by respondent and acquaintance, use of controlled drugs, sexual activity, demographics and socioeconomic status of respondents, neighborhood problems, and drug and alcohol use.

*Maintenance:

Database Form:
Survey data and abstracts of the survey are available online at the website www.icpsr.umich.edu/cgi/subject.prl?path=SAMHDA&format=tb&query=IV

Contact Information:
For further information regarding archive data, documentation, downloading, or website technical issues, contact the SAMHDA project. 
JoAnne McFarland O'Rourke, Director SAMHDA Helpline: 1-888-741-7242 
Peggy Overcashier Local: (734) 998-9792 
Marais Macknick Fax: (734) 998-9889 
e-mail: samhda@icpsr.umich.edu

*description of contents of database taken directly from author

Policy Research on Aging and Mental Health Services (PRAMHS)

Author: Administration on Aging

Contents:
This study consists of four parts. Part 1 is the result of a nationwide mail survey of Community Mental Health Centers (CMHC). Questions centered on the delivery of mental health services to the elderly, and covered topics such as the number of elderly people in the client load, amount of interaction between CMHC and Area Agencies on Aging (AAA), factors affecting the delivery of services to the elderly, and specialized services for the elderly. In addition to data from the PRAMHS questionnaire, data from the 1976 National Institute of Mental Health CMHC inventory were merged with the corresponding agencies. Part 2 contains data from a mail survey of Area Agencies on Aging. Data include percent-age of referrals made by agencies to mental health programs as compared to other types of programs, priority given to mental health issues, factors influencing delivery and coordination of mental health services to the elderly, and amount of communication between AAA and agencies serving the mental health needs of the elderly. Part 3 consists of data collected by the PRAMHS project State Unit on Aging (SUA) mail survey. Information is included on interaction with State Mental Health Agencies, priority given to mental health issues, efforts by the elderly to influence policy decisions, and factors influencing delivery and coordination of mental health services to the elderly. Part 4 contains the result of the PRAMHS State Mental Health Agencies mail survey. Data supply information concerning the interaction with SUA, efforts to decrease the number of elderly in state mental health institutions, efforts by the elderly to influence policy decisions, and factors influencing delivery and coordination of mental health services to the elderly.

*Maintenance:
The study was completed in 1984 and information was updated in 1992.

Database Form:
Survey data and an abstract of the study are available online at the website www.icpsr.umich.edu/cgi/ab.prl?file=9043

Contact Information:
For further information regarding archive data, documentation, downloading, or website technical issues, contact the SAMHDA project. 
JoAnne McFarland O'Rourke, Director SAMHDA Helpline: 1-888-741-7242 
Peggy Overcashier Local: (734) 998-9792 
Marais Macknick Fax: (734) 998-9889 
e-mail: samhda@icpsr.umich.edu

*description of contents of database taken directly from author

Appendix F 99
American Managed Behavioral Health Association reports and studies

Author: American Managed Behavioral Health Association (AMBHA)

Contents:
The American Managed Behavioral Healthcare Association (AMBHA) was founded in 1994 to enable the leading organizations in this new industry to work together on key issues of public accountability, quality, public policy and communication. AMBHA membership currently includes 9 national and regional organizations, managing the cost and quality of mental health and substance abuse services for over 100 million subscribers. Contracting with health maintenance organizations or other health care delivery systems, both public and private, AMBHA member organizations offer individualized care management, specialty networks, a continuum of care, quality management programs, consumer orientations and innovations in behavioral health care delivery. Through their programs, AMBHA member organizations are able to provide earlier intervention and treatment, increase of appropriate quality care and reduction of medically unnecessary treatment, improved efficiency and lower costs.

*Maintenance: List of reports and studies was updated in December 1999.

Database Form:
Reports on costs, the use of managed behavioral healthcare in the public sector, the regulation of managed care, quality assurance, the managed care behavioral healthcare industry can all be accessed and then ordered at the website www.ambha.org/Reports/index.htm

Contact Information:
If you would like to contact AMBHA or would like to become a member, please write or fax to: Pamela Greenberg, M.P.P., Executive Director AMBHA
700 Thirteenth St., NW, Suite 950
Washington D.C., 20005
Fax, (202) 434-4564

*description of contents of database taken directly from author

(Washington) DC Metropolitan Area Drug Study

Author: United States Department of Health and Human Services; the National Institute on Drug Abuse.

Contents: DC*MADS was undertaken to assess the full extent of the drug problem in one metropolitan area. The study was comprised of 16 separate studies that focused on different sub-groups, many of which are typically not included or are underrepresented in household surveys. This data collection includes three of these component studies:

- **Study of Household and Non-household Populations:** examines the prevalence of tobacco, alcohol, and drug use among members of household and non-household populations aged 12 and older. Also examines the characteristics of three drug-abusing sub-groups: crack-cocaine, heroin, and needle users.

- **Homeless and Transient Population Study:** includes data on previous living arrangements, tobacco, drug, and alcohol use, consequences of use, treatment history, illegal behavior and arrest, physical and mental health, pregnancy, insurance, employment and finances, and demographics.

- **Drug Use Among Women Delivering Live-births in D.C. Hospitals:** includes data on tobacco, alcohol, and drug use, patterns of use, respondent’s general experiences with drug use, including perceptions of the risks and consequences of use, treatment experiences, pregnancy history, and maternal and infant characteristics and outcomes.

*Maintenance:*
Both the Study of Household and Non-household Hold Populations and the Homeless and Transient Population Study were conducted in 1991. The Drug Use Among Women Delivering Livebirths in D.C. Hospitals study was conducted in 1992.

Database Form:
Survey data and studies can be obtained online through the website www.icpsr.umich.edu/SAMHDA/dcmads.html

Clicking on the data and surveys link at the top of the page allows access to abstracts of the studies and datasets.
Drug Abuse Treatment Outcome Study

Author: National Institute on Drug Abuse

Contents: This five-year research cooperative brings together four teams of scientists to explore separate but complementary research themes. Researchers are exploring issues of client retention and engagement in treatment, including the significance of selected client and program variables on retention and program compliance. Also, factors associated with client motivation treatment and client perceptions of treatment are being examined to better understand their impact on program retention. Within their identified research themes, DATOS investigators address four variable domains identified as having particular significance for contemporary drug abuse treatment. These include HIV risk behaviors, cocaine use, psychiatric comorbidity, and criminal justice status and activity. Three additional variable domains — treatment process, retention, and outcome criteria — have been developed to insure that relevant issues in these important areas are explored in an integrated manner across sites. In the future, additional waves of studies will be undertaken to look deeper into the research themes and variable domains described.

*Maintenance:
The core data for the DATOS project includes client information from 10,010 admissions to 96 treatment programs that participated between 1991 and 1993 in this third national evaluation study, representing maintenance, outpatient drug-free, long-term residential, and short-term inpatient services. One-year post treatment follow-up with DATOS clients has been completed and 5-year follow-up interviews are in progress.

Drug Abuse Warning Network (DAWN)

Author: Office of Applied Studies at the Substance Abuse and Mental Health Services Administration

Contents: DAWN provides semiannual estimates of the number of drug-related visits to hospital emergency departments based on a nationally representative sample of short- and general hospitals located throughout the coterminous United States. Included are persons 6 years and older who were treated in the hospital’s emergency department with a presenting problem that was induced by or related to the non-medical use of a legal drug or any use of an illegal drug that was taken due to dependence, suicide attempt or ges- ture, or psychic effects. DAWN also collects information on drug-related deaths from selected medical examiner offices. Emergency room esti-mates are produced for 21 large metropolitan areas and for the nation. Drug-related death data are produced for more than 40 metropolitan areas. The dataset contains demographics, drug, and reason for visit (e.g., overdose).

*Maintenance:
The study is ongoing. Data is provided for DAWN studies done on 1994 and 1997.

Database Form:
Clinical data and administrative records data and abstracts of the studies can be obtained online at www.icpsr.umich.edu/cgi/subject.prl?path=SAMHDA&format=tb&query=VIII
Contact Information:
For further information regarding archive data, documentation, downloading, or website technical issues, contact the SAMHDA project.
JoAnne McFarland O’Rourke, Director SAMHDA Helpline: 1-888-741-7242
Peggy Overcashier Local: (734) 998-9792
Marais Macknick Fax: (734) 998-9889
e-mail: samhda@icpsr.umich.edu

*description of contents of database taken directly from author

National Household Survey on Drug Abuse
Author: Office of Applied Studies at the Substance Abuse and Mental Health Services Administration

Contents: The NHSDA is designed to produce drug and alcohol use incidence and prevalence estimates and report the consequences and patterns of use and abuse in the general U.S. civilian population aged 12 and older. Questions include age at first use, as well as lifetime, annual, and past-month usage for the following drug classes: cannabis, cocaine, hallucinogens, heroin, alcohol, tobacco, and non-medical use of prescription drugs, including psychotherapeutics. Data also include problems from use of drugs, alcohol, and tobacco, perceptions of the risks involved, and personal and family income sources and amounts. Demographic data include gender, race, age, ethnicity, educational level, job status, income level, veteran status, household composition, and population density.

*Maintenance: Data available begins in 1979 and was collected every 3 years until 1990. After 1990, data is available on a yearly basis.

Database Form: Survey data and abstracts of studies are available online at the website www.icpsr.umich.edu/cgi/subject.pl?path=SAMHDA&format=tb&query=1

Contact Information:
For further information regarding archive data, documentation, downloading, or website technical issues, contact the SAMHDA project.

JoAnne McFarland O’Rourke, Director SAMHDA Helpline: 1-888-741-7242
Peggy Overcashier Local: (734) 998-9792
Marais Macknick Fax: (734) 998-9889
e-mail: samhda@icpsr.umich.edu

*description of contents of database taken directly from author

Services Research Outcomes Study
Author: Office of Applied Studies at the Substance Abuse and Mental Health Services Administration

Contents: The Services Research Outcomes Study (SROS) was based on a national probability sample of treatment programs and clients. SROS was a five-year post-discharge follow-up of a broadly representative sample of approximately 3,000 drug clients who were treated during the 12 months before September 1, 1990. The study compared client behavior in the five years before treatment with behavior five years after treatment with respect to drug and alcohol use, criminal involvement, employment, physical and mental health, and other behaviors. SROS analyzed treatment results in light of client characteristics and the type and cost of treatment services the clients received. Pre-treatment variables included demographic characteristics, prior drug and alcohol use, treatment history, criminal justice history, and social support. Treatment variables included duration of treatment, completion of treatment, treatment modality, relationship with treatment counselor, and treatment revenue. Post-treatment variables included drug and alcohol use; criminal behavior; employment; and further treatment episodes.

*Maintenance: Data compares client behavior five years prior to treatment in the 12 months preceding September 1, 1990 with client behavior after treatment on that date.

Database Form: Interview data can be obtained online at the website ftp://ftp.icpsr.umich.edu/pub/FastTrack/Services_Research_Outcomes_Study/ Opening the readme.txt file at the above website provides information on what data is currently accessible.
Contact Information:
For further information regarding archive data, documentation, downloading, or website technical issues, contact the SAMHDA project.

JoAnne McFarland O’Rourke, Director SAMHDA Helpline: 1-888-741-7242
Peggy Overcashier Local: (734) 998-9792
Marais Macknick Fax: (734) 998-9889
e-mail: samhda@icpsr.umich.edu

*description of contents of database taken directly from author

Treatment Episode Data Set

Author: Office of Applied Studies at the Substance Abuse and Mental Health Services Administration

Contents: The Treatment Episode Data Set (TEDS) is an administrative data system providing descriptive information about the national flow of admissions to specialty providers of sub-stance abuse treatment. TEDS is designed to supplement annual data on the number and characteristics of persons admitted to public and private non-profit substance abuse treatment programs in all 50 states, DC, and Puerto Rico. The unit of analysis is treatment admissions to substance abuse treatment units receiving public funding. TEDS includes both a Minimum Data Set (required reporting) and a Supplemental Data Set (optional reporting). The data include demographics, services, substance(s) of abuse, number of prior treatments, referral source, employment status, frequency of use, age at first use, veteran and pregnancy status, insurance type, and income.

*Maintenance:
Data is updated annually beginning in 1992 and extending to 1997.

Database Form:
Administrative record data and report abstracts are available at the website www.icpsr.umich.edu/cgi/subject.pl?path=SAMHDA&format=tb&query=III

Contact Information:
For further information regarding archive data, documentation, downloading, or website technical issues, contact the SAMHDA project.

JoAnne McFarland O’Rourke, Director SAMHDA Helpline: 1-888-741-7242
Peggy Overcashier Local: (734) 998-9792
Marais Macknick Fax: (734) 998-9889
e-mail: samhda@icpsr.umich.edu

*description of contents of database taken directly from author

The National Treatment Improvement Evaluation Study (NTIES) Author: Center for Substance Abuse Treatment

Contents: The National Treatment Improvement Evaluation Study (NTIES) is a Congressionally-mandated five-year study of the impact of drug and alcohol treatment on thousands of clients in hundreds of treatment units that received public support from the U.S. Department of Health and Human Services (HHS), Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Substance Abuse Treatment (CSAT). The full report provides a wealth of data useful in improving today’s treatment programs and in designing new programs to advance treatment in the future. The information reported here was gathered from 4,411 clients from across the country. It includes clients who completed an intake interview and returned for at least a single visit.

*Maintenance:
Information was obtained from subjects in either 1979, 1980, or 1981.

Database Form:
Links to online data and findings on drug and alcohol use, changes in criminal behavior, changes in employment, income, and homelessness, changes in physical and mental health, changes in sexual behavior, variation in treatment outcomes, and cost of treatments can all be found at the website www.health.org/nties97/index.htm.

Contact Information:
For further information regarding archive data, documentation, downloading, or website technical issues, contact the SAMHDA project.

JoAnne McFarland O’Rourke, Director SAMHDA Helpline: 1-888-741-7242
Peggy Overcashier Local: (734) 998-9792
Marais Macknick Fax: (734) 998-9889
e-mail: samhda@icpsr.umich.edu

*description of contents of database taken directly from author
Quick Facts

Author: National Institute on Alcohol Abuse and Alcoholism

Contents: Quick Facts provides tables presenting data on alcohol topics including: amounts and patterns of alcohol consumption; alcohol dependence or abuse; consequences of alcohol consumption; and other alcohol-related topics. Data tables in Quick Facts are text files that can be viewed on a screen and saved for further use. Quick Facts tables are organized by topic.

*Maintenance:
Authoritative statistical information on alcohol-related topics is entered into Quick Facts on a regular basis. Annual updates include United States trends on per capita alcohol consumption, alcohol-related hospital discharges, liver cirrhosis mortality, and alcohol-related fatal traffic crashes.

Database Form:
Data tables can be viewed at the website http://silk.nih.gov/silk/niaaa1/database/qf.htm.

Contact Information:
The NIAAA homepage is located at www.niaaa.nih.gov/

*description of contents of database taken directly from author

Monitoring the Future

Author: National Institute on Drug Abuse

Contents: MTF explores changes in values, behaviors, and lifestyle of American youth. Provides an annual systematic and accurate description of the youth population and quantifies the direction and rate of change occurring over time. Respondents are nationally representative of high school seniors in the U.S. and respond to about 100 drug-use and demographic questions as well as to about 200 questions on subjects such as attitudes toward government, social institutions, race relations, changing roles for women, educational aspirations, occupational aims, and marital and family plans.

*Maintenance:
Study is ongoing with data dating back to the mid 1970’s.

Database Form:
Survey data and abstracts of studies can be obtained online at the website www.icpsr.umich.edu/cgi/subject.pl?path=SAMHDA&format=tb&query=II

Contact Information:
For further information regarding archive data, documentation, downloading, or website technical issues, contact the SAMHDA project.

JoAnne McFarland O’Rourke, Director SAMHDA Helpline: 1-888-741-7242
Peggy Overcashier Local: (734) 998-9792
Marais Macknick Fax: (734) 998-9889
e-mail: samhda@icpsr.umich.edu

*description of contents of database taken directly from author

Online Multiple Congenital Anomaly/Mental Retardation (MCA/MR) Syndromes

Author: Stanley Jablonski, The National Library of Medicine

Contents: Scope: Of approximately 1600 to 2000 syndromes in which multiple congenital anomalies are associated with mental retardation, over 700 are included in this resource. Also included in the scope are chromosomal aberrations and X-linked mental retardation, some of which are not routinely designated in the literature as “syndromes,” but they possess sufficient syndromic characteristics to be included. Other syndromes are described in Jablonski, S. Dictionary of Syndromes and Eponymic Diseases. 2nd ed. Malabar, FL, Krieger, 1991.

*Mainteance:
Additional multiple congenital anomaly/mental retardation (MCA/MR) syndromes will be added in future updates.

Database Form:
The database is found at the website www.nlm.nih.gov/mesh/jablonski/syndrome_db.html. Searches for information pertaining to particular disorders can be done by entering the name or the disorder in the search for box.

Contact Information:
NLM Phone and Web Address
(888) FIND-NLM
(888) 346-3656
(301) 594-5983 (local and international calls)

*description of contents of database taken directly from author
Policy Information Exchange Online (PIE online)

Author: Missouri Institute of Mental Health

Contents: PIE Online (Policy Information Exchange Online) is your passport to authoritative primary source materials on a wide range of issues affecting mental health policy in North America. PIE is a service of the Missouri Institute of Mental Health, a leading center for policy, research, and training.

*Maintenance:
Reports are added on a regular basis.

Database Form:
Projects pertaining to particular topics can be accessed by doing a search at the website www.mhsip.org/search.html.

Contact Information:
The PIE online homepage is located at www.pie.org/mimhweb/pie/pie.asp. There is also a link to the Missouri Institute of Mental Health at the above website.

*Maintenance:
Ongoing

Database Form:
Projects pertaining to particular topics can be accessed by doing a search at the website www.mhsip.org/search.html.

Contact Information:
The Mental Health Statistics Program can be contacted in 5 different ways:
1. Email us at webmaster@mhsip.org
2. Call Dr. Victor Ingurgio @ 405/522-3909
3. Fill-out the website survey
4. Sign our guestbook
5. Use the suggestion box to tell us what you think

In order to fill-out the website survey, sign the guest book, or fill out the suggestion box, you must go to the website www.mhsip.org/feedback.html

*Maintenance:
Ongoing

Database Form:
Projects pertaining to particular topics can be accessed by doing a search at the website www.mhsip.org/search.html.

Contact Information:
The Mental Health Statistics Program can be contacted in 5 different ways:
1. Email us at webmaster@mhsip.org
2. Call Dr. Victor Ingurgio @ 405/522-3909
3. Fill-out the website survey
4. Sign our guestbook
5. Use the suggestion box to tell us what you think

Mental Health Statistics Improvement Program online

Author: Mental Health Statistics Improvement Program

Contents: People receiving mental health services, and people managing and providing those services, have questions about who’s providing the best services at the best price, who needs services, what the best treatments are for different kinds of problems, or who has the friendliest staff. To answer any of these questions, people need dependable information. That’s what MHSSIP is about—mental health information (or data), how to collect it, what needs to be collected, where to find what others have collected, how to understand what you find, how to report it so other people can understand it, and how to use it to make decisions. A group called the Mental Health Statistics Improvement Program (MHSSIP) Policy Group has been working to develop standards for mental health data for the last 20 years. It is through the efforts of this group, supported by the federal Center for Mental Health Services, and informed by people who receive mental health services, provide services, and manage services, that this manual has been developed.

*Maintenance:
Ongoing

Database Form:
Projects pertaining to particular topics can be accessed by doing a search at the website www.mhsip.org/search.html.

Contact Information:
The Mental Health Statistics Program can be contacted in 5 different ways:
1. Email us at webmaster@mhsip.org
2. Call Dr. Victor Ingurgio @ 405/522-3909
3. Fill-out the website survey
4. Sign our guestbook
5. Use the suggestion box to tell us what you think

In order to fill-out the website survey, sign the guest book, or fill out the suggestion box, you must go to the website www.mhsip.org/feedback.html

*NIAAA Alcohol and Alcohol Problems Science Database (ETOH)

Author: National Institute on Alcohol Abuse and Alcoholism

Contents: The most comprehensive online bibliographic database containing over 100,000 records on alcohol abuse and alcoholism. ETOH is updated monthly and contains research findings from the late 1960s to the present, as well as historical literature.

*Maintenance:
Updated on a monthly basis

Database Form:
Bibliographic database

Contact Information:
The ETOH database is located at http://etoh.niaaa.nih.gov

*NIAAA Alcohol and Alcohol Problems Science Database (ETOH)

Author: National Institute on Alcohol Abuse and Alcoholism

Contents: The most comprehensive online bibliographic database containing over 100,000 records on alcohol abuse and alcoholism. ETOH is updated monthly and contains research findings from the late 1960s to the present, as well as historical literature.

*Maintenance:
Updated on a monthly basis

Database Form:
Bibliographic database

Contact Information:
The ETOH database is located at http://etoh.niaaa.nih.gov
<table>
<thead>
<tr>
<th>NAME</th>
<th>AUTHOR</th>
<th>DATA SOURCE</th>
<th>AVAILABILITY OF DATA</th>
<th>SERVICE USE</th>
<th>COST</th>
<th>INCIDENCE</th>
<th>PREVALENCE</th>
<th>RESULTS</th>
<th>MISC</th>
<th>BAGG</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Inpatient Database</td>
<td>Agency for Healthcare Policy and Research</td>
<td>Inpatient discharge abstracts</td>
<td>CD-ROM</td>
<td></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Reporting Program for Mental Health Statistics</td>
<td>Center for Mental Health Services</td>
<td>National statistical information</td>
<td>Pamphlets, fact sheets, book-lets, book/monographs, newsletters, and reports can be ordered online</td>
<td></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Numbers Count: Mental Illness in America</td>
<td>National Institute of Mental Health</td>
<td>Statistical information</td>
<td>Report can be ordered online</td>
<td></td>
<td></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analysis of Health Services Areas: Another Piece Of the Psychiatric Workforce Puzzle</td>
<td>Peter Eveland, Ed.D. et al</td>
<td>Report</td>
<td>Hardcopy (Magazine Article)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gambling Behavior and Impact Study</td>
<td>National Gambling Impact Study Commission</td>
<td>Report</td>
<td>Available online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Youth Survey</td>
<td>National Institute of Mental Health</td>
<td>Survey data and abstracts</td>
<td>Available online</td>
<td></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy Research in Aging and Mental Health Services</td>
<td>Administration on Aging</td>
<td>Survey data and study abstract</td>
<td>Available online</td>
<td></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Managed Behavioral Health Association reports and studies</td>
<td>American Managed Behavioral Health Association (AMBHA)</td>
<td>Reports and studies</td>
<td>Can be ordered online</td>
<td></td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAME</td>
<td>AUTHOR</td>
<td>DATA SOURCE</td>
<td>AVAILABILITY OF DATA</td>
<td>SERVICE USE</td>
<td>COST</td>
<td>INCIDENCE</td>
<td>PREVALENCE</td>
<td>RESULTS</td>
<td>MSC</td>
<td>PAGE</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>----------------------</td>
<td>-------------</td>
<td>------</td>
<td>-----------</td>
<td>------------</td>
<td>---------</td>
<td>-----</td>
<td>------</td>
</tr>
<tr>
<td>(Washington) DC Metropolitan Area Drug Study</td>
<td>United States Department of Health and Human Services; National Institute on Drug Abuse</td>
<td>Studies and survey data</td>
<td>Available online</td>
<td></td>
<td>¥</td>
<td>¥</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug Abuse Treatment Outcome Study</td>
<td>National Institute on Drug Abuse</td>
<td>Survey data</td>
<td>Available online</td>
<td>¥</td>
<td></td>
<td>¥</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug Abuse Warning Network</td>
<td>Office of Applied Studies at the Substance Abuse and Mental Health Service Administration</td>
<td>Clinical data, administrative records data, and study abstracts</td>
<td>Available online</td>
<td>¥</td>
<td></td>
<td>¥</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Household Survey on Drug Abuse</td>
<td>Office of Applied Studies at the Substance Abuse and Mental Health Services Administration</td>
<td>Survey data and study abstracts</td>
<td>Available online</td>
<td>¥</td>
<td>¥</td>
<td>¥</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services Research Outcome Study</td>
<td>Office of Applied Studies at the Substance Abuse and Mental Health Services Administration</td>
<td>Interview data</td>
<td>Available online</td>
<td></td>
<td></td>
<td>¥</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Episode Data Set</td>
<td>Office of Applied Studies at the Substance Abuse and Mental Health Services Administration</td>
<td>Administrative record data and report abstracts</td>
<td>Available online</td>
<td>¥</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The National Treatment Improvement Evaluation Study</td>
<td>Center for Substance Abuse Treatment</td>
<td>Data and study findings</td>
<td>Available online</td>
<td>¥</td>
<td>¥</td>
<td>¥</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quick Facts</td>
<td>National Institute on Alcohol Abuse and Alcoholism</td>
<td>Data tables</td>
<td>Available online</td>
<td></td>
<td>¥</td>
<td>¥</td>
<td>¥</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## DATABASES REQUIRING THE USE OF A SEARCH ENGINE TO LOCATE SPECIFIC STUDIES AND REPORTS

<table>
<thead>
<tr>
<th>NAME</th>
<th>AUTHOR</th>
<th>DATA SOURCE</th>
<th>AVAILABILITY OF DATA</th>
<th>COST</th>
<th>INCIDENCE</th>
<th>PREVALENCE</th>
<th>RESULTS</th>
<th>MSG</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring the Future</td>
<td>National Institute on Drug Abuse</td>
<td>Survey data and study abstracts</td>
<td>Available online</td>
<td>¥</td>
<td>¥</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DATABASES REQUIRING THE USE OF A SEARCH ENGINE

- Online Multiple Congenital Anomaly/Mental Retardation
  - Stanley Jablonski, The National Library of Medicine
  - Database
  - Available online

- Policy Information Exchange online
  - Missouri Institute of Mental Health
  - Reports
  - Can be viewed online

- Mental Health Statistics Improvement Program online
  - Mental Health Statistics Improvement Programs
  - Projects
  - Projects can be accessed online

- NIAAA Alcohol and Alcohol Problems Science Database (ETOH)
  - National Institute in Alcohol Abuse and Alcoholism
  - Bibliographic database
  - Database is located online

DATASETS REQUIRING THE USE OF A SEARCH ENGINE VARY IN THE INCLUSION OF THE ABOVE DOMAINS
APPENDIX G:

Checklist for Conducting the Performance Improvement Project

PHASE I: Planning your QI study

STEP 1: INVOLVE CONSUMERS AND OTHER STAKEHOLDERS IN THE QUALITY IMPROVEMENT PROCESS
- □ Process provides opportunities for and seeks enrollee participation

STEP 2: SELECT A TOPIC FOR THE QUALITY IMPROVEMENT PROCESS
- □ Public payers and MCO contribute to topic selection
- □ Topics are identified through continuous data collection and analysis
- □ Topics selected systematically and prioritized to achieve greatest benefit for enrollees
- □ Selection process takes into account:
  - Prevalence of condition or need for service
  - Enrollee demographic characteristics and health risks
  - Interest of consumers in the aspect of care or services to be addressed

STEP 3: SELECT PERFORMANCE INDICATORS AND MEASURE THAT ADDRESS IMPORTANT IMPACTS AND HAVE DESIRED SCIENTIFIC PROPERTIES
- □ Public payers and MCO contribute to selection of performance indicators
- □ Performance indicators are objective, clearly defined, evidence based
- □ Indicators measure changes in health status, functional status, satisfaction or valid proxies
- □ Process measures are used as proxies for outcomes only when validity has been established in literature or by expert consensus
- □ Some indicators allow comparison with other organizations or benchmarks
- □ Performance indicators are identified through continuous data collection and analysis

STEP 4: CHOOSE AN APPROPRIATE RESEARCH DESIGN AND APPROPRIATE DATA COLLECTION METHODS
- □ The improvement is reasonably attributable to interventions undertaken by the organization
- □ Sampling methodology validly reflects all practitioners and enrollee groups
- □ Sample randomly selected from total population the indicator applies to, or from important subgroups
- □ Baseline established, changes measured continuously for at least one year after desired performance level is achieved
- □ Same measurement methodology is used for baseline and follow-up assessments
- □ Identification of subjects factors in changes in enrollment status
- □ A power analysis is conducted prior to data collection
- □ Project hypotheses and data analysis plans are articulated prior to data collection
- □ If survey data are collected and some potential subjects are non-English speaking, appropriate translation methods are employed
- □ Timing of data collection based on knowledge or theory of timing of effect of intervention on indicator
- □ If longitudinal designs are used, appropriate methods for reducing attrition are employed.
- □ Project design allows for comparison before and after improvement effort, and in some cases for comparison with other organizations
PHASE II: Collecting Data

STEP 5: COLLECT DATA

☐ If data are collected from consumers, the project is reviewed by a human subjects committee or IRB
☐ If consumer satisfaction data are collected, data collection is clearly separated from service provision
☐ If individual enrollee data are collected, each enrollee is given information about his/her rights, and data is only collected for persons who give their informed consent.
☐ Appropriate methods to protect confidentiality and security of data are employed
☐ Staff involved in data collection are adequately trained
☐ If project entails large-scale data collection, a pilot test is conducted

PHASE III: Analyzing and Interpreting Data

STEP 6: ANALYZE AND INTERPRET DATA

☐ Reliability and validity of data are assessed and meet scientific standards
☐ Interventions result in demonstrable improvement
☐ Tests of statistical significance are appropriate to the project design and data source
☐ Improvement sustained at least one year after improvement is demonstrated
☐ If improvement is not achieved, the organization, consumers and other stakeholders attempts to understand the cause of the failure and plans an alternative intervention or additional data collection
☐ Approaches to missing data are established
☐ If survey data are collected, bias due to non-response is assessed and, to the extent possible, statistical adjustments are made to correct for these biases
☐ Appropriate statistical adjustments are made to account for differences in the characteristics of individuals measured at baseline and at follow-up
☐ Appropriate risk adjustment methodologies are used when comparing results with benchmarks or other organizations, or when comparing providers within the organization

PHASE IV: Feeding Back Findings for Service Improvement

STEP 7: FEEDBACK DATA TO SERVICE PROVIDERS, CONSUMERS, AND OTHER STAKEHOLDERS TO IMPROVE SERVICES AND CHOICE

☐ Data collection and analysis is integrated with planning and implementing improvement strategies
☐ Results of QI studies are disseminated to providers and consumers in a variety of methods

PHASE V: Evaluating your Performance Improvement Program

STEP 8: ASSESS THE BURDEN AND BENEFIT OF THE QUALITY IMPROVEMENT PROJECT FOR THE PURPOSE OF PLANNING FUTURE PROJECTS

☐ Upon completion, projects are re-evaluated and monitored

---

2 Health Care Quality Improvement Studies in Managed Care Settings—Design and Assessment, the National Committee for Quality Assurance (1994) Washington DC.