

State of Colorado



Department of Health Care Policy & Financing

FY 04–05 PIP VALIDATION REPORT
READMISSIONS RATES
for
ACCESS BEHAVIORAL CARE – DENVER

June 2005

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Executive Summary Overview

Background

The Balanced Budget Act of 1997 (Public Law 105-33) (BBA) requires that the states conduct an annual evaluation of their Managed Care Organizations (BHOs) and Prepaid Inpatient Health Plans (PIHPs) to determine the BHOs' and PIHPs' compliance with federal regulations and quality improvement standards. According to the BBA, the quality of health care delivered to Medicaid consumers enrolled in BHOs and PIHPs must be tracked, analyzed, and reported annually. In addition, federal regulations requires states to review, at least annually, the impact and effectiveness of each BHO's and PIHP's quality assessment and performance improvement program, including the results of each BHO's and PIHP's performance improvement projects (PIPs).

The Colorado Department of Health Care Policy & Financing (the Department) has opted to complete this annual review requirement by contracting with an External Quality Review Organization (EQRO). The current EQRO is Health Services Advisory Group, Inc. (HSAG).

Introduction

The purpose of health care quality PIPs is to assess and improve processes and, thereby, outcomes of care. In order for such projects to achieve real improvements in care, and for interested parties to have confidence in the reported improvements, PIPs must be designed, conducted, and reported in a methodologically sound manner. In Colorado, Medicaid services have been provided by mental health capitated organizations, formerly referred to as Mental Health Assessment and Service Agencies (MHASAs).¹ In 2005, the new behavioral health organizations (BHOs) were formed. PIPs have been conducted by the BHOs to assess and improve the quality of clinical and nonclinical mental health services received by consumers.

This report summarizes the PIP review conducted by HSAG for *Readmissions Rates*, submitted by **Access Behavioral Care – Denver(ABC–Denver)**. Evaluation of PIPs is conducted based on Centers for Medicare & Medicaid Services (CMS) guidelines, as outlined in the CMS publication, *Validating Performance Improvement Projects, A Protocol for Use in Conducting External Quality Review Activities*, Final Protocol, Version 1.0, May 1, 2002 (CMS PIP Protocol).

¹ MHASAs provided mental health services in Colorado from 1995–2004. In 2005, the new behavioral health organizations (BHOs) were formed.

The CMS protocol identifies 10 activities that should be validated for each PIP, although in some cases the PIP may not be at a point where all activities can be validated. These 10 activities are:

- ◆ Activity I. Appropriate Study Topic
- ◆ Activity II. Clearly Defined, Answerable Study Question
- ◆ Activity III. Clearly Defined Study Indicator(s)
- ◆ Activity IV. Correctly Identified Study Population
- ◆ Activity V. Valid Sampling Techniques (if sampling was used)
- ◆ Activity VI. Accurate/Complete Data Collection
- ◆ Activity VII. Appropriate Improvement Strategies
- ◆ Activity VIII. Sufficient Data Analysis and Interpretation
- ◆ Activity IX. Real Improvement Achieved
- ◆ Activity X. Sustained Improvement Achieved

Each activity consists of elements necessary for the successful completion of a valid PIP.

These 10 activities are further broken down into 53 specific elements, 11 of which HSAG has designated as “critical” for producing valid and reliable results and for demonstrating a high confidence in the PIP findings. These critical elements must be found to be *Met* for the PIP to be considered in compliance.

If one or more critical elements are *Not Met*, the PIP will be considered invalid. Depending on the specific elements and the phase of the PIP, the required corrective actions may include revising the PIP summary form, submitting additional documentation, and/or modifying or repeating an element of the PIP submitted for validation.

If one or more critical elements are *Partially Met*, but none are *Not Met*, the PIP will be considered valid. Depending on the specific elements and the phase of the PIP, the required corrective actions may include revising the PIP summary form, submitting additional documentation, and/or modifying the current PIP or the future PIP.

If all critical elements are *Met*, no corrective action is necessary.

Corrective action plans must be submitted within 30 days of receipt of the final PIP report.

For noncritical elements found to be *Partially Met* or *Not Met*, the report will provide recommendations but no required corrective actions. Responding to these recommendations will improve current and future PIPs but will not change report scores.

Study Summary

ABC–Denver has monitored inpatient readmission rates annually since its inception as a MHASA to assess the effectiveness of its care coordination program. In 2002, this indicator was identified as a performance measure to further reduce the percentage of consumers who were readmitted to the hospital within seven or 30 days of discharge.

The thirty-day readmission rate is commonly used in the behavioral health care field as a quality standard and is included in the benchmarking efforts of the Substance Abuse and Mental Health Services Administration (SAMHSA), American Managed Behavioral Healthcare Association (AMBHA), and National Association of State Mental Health Program Directors (NASMHPD).

Care coordination serves as the centerpiece of **ABC–Denver’s** delivery system. The purpose of the study is to reduce the rates of inpatient psychiatric readmission for a mental illness. Inpatient services represent the most intensive and intrusive level of care. Avoiding the recurrence of acute illness and rehospitalization is an important indicator of effective mental health treatment.

Study Methodology

ABC–Denver’s study population consisted of all consumers admitted to an inpatient setting of an acute care facility for treatment of a principal covered mental health diagnosis, with a readmission date occurring on or before December 31 of the measurement year. Consumers had to be continuously enrolled through 30 days after discharge.

ABC–Denver’s interventions included the formation of adult and adolescent service work groups to explore methods of preventing hospitalization and readmission, institution of processes for identification of high-need/high-risk consumers, implementation of a protocol for follow-up and assistance by **ABC–Denver** Consumer Navigator and Family Resource Coordination staff to facilitate consumer linkage, development of procedures for tracking readmissions within 30 days, and heightened efforts toward training and development of consumer Wellness Recovery Action Plans or crisis plans.

Study Results

ABC–Denver demonstrated incremental reductions in seven- and 30-day hospital readmission rates in every period of full-calendar-year measurement dating from 1999. Even though the results were not statistically significant, the trend has been consistent and positive.

Summary of HSAG Validation Findings

For this review, 10 activities were validated. The following highlights the overall validation results for **ABC–Denver’s** PIP:

Total number of critical elements that were evaluated equaled 11; of these:

- 10 critical elements were *Met*.
- 1 critical element was *Not Applicable*.

Total number of all PIP elements (including critical elements) that were evaluated equaled 53; of these:

- 45 evaluation elements were *Met*.
- 0 evaluation elements were *Partially Met*.
- 1 evaluation elements were *Not Met*.
- 7 evaluation elements were *Not Applicable*.

Table 1-1 and Table 1-2 show **ABC–Denver’s** scores based on HSAG’s PIP *Readmissions Rates*. Each activity has been reviewed and scored according to the HSAG validation methodology outlined in Section 2 of this report.

**Table 1-1—FY 04–05 Performance Improvement Project Scores:
Readmissions Rates
for Access Behavioral Care – Denver**

| Review Activity | Overall totals, including Critical Elements | | | | | Critical Elements only | | |
|---|---|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| | Total Possible Evaluation Elements | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| I. Appropriate Study Topic | 6 | 6 | 0 | 0 | 0 | 1 | 1 | 0 |
| II. Clearly Defined, Answerable Study Question | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| III. Clearly Defined Study Indicator(s) | 7 | 5 | 0 | 0 | 2 | 3 | 3 | 0 |
| IV. Correctly Identified Study Population | 3 | 3 | 0 | 0 | 0 | 2 | 2 | 0 |
| V. Valid Sampling Techniques | 6 | 6 | 0 | 0 | 0 | 1 | 1 | 0 |
| VI. Accurate/Complete Data Collection | 11 | 6 | 0 | 0 | 5 | 1 | Not Applicable | |
| VII. Appropriate Improvement Strategies | 4 | 4 | 0 | 0 | 0 | No Critical Elements | | |
| VIII. Sufficient Data Analysis and Interpretation | 9 | 8 | 0 | 1 | 0 | 2 | 2 | 0 |
| IX. Real Improvement Achieved | 4 | 4 | 0 | 0 | 0 | No Critical Elements | | |
| X. Sustained Improvement Achieved | 1 | 1 | 0 | 0 | 0 | No Critical Elements | | |
| Totals for All Activities | 53 | 45 | 0 | 1 | 7 | 11 | 10 | 0 |

**Table 1-2—FY 04–05 Performance Improvement Project Overall Score:
Readmissions Rates
for Access Behavioral Care – Denver**

| | |
|--------------------------|-------------|
| Percentage Score* | 98%* |
| Validation Status | Met |

* Percentage score is calculated by dividing the total *Met* by the sum of the total *Met*, *Partially Met*, and *Not Met*. However, if any critical elements are scored *Not Met*, the percentage score will automatically be zero.

Conclusions and Recommendations

This study sought to decrease the readmission rates among consumers who were discharged from an inpatient setting of an acute care facility for treatment of a principal covered mental health diagnosis. **ABC–Denver** presented a well-defined study topic that addressed the broad spectrum of care, which in turn could affect the mental health, functional status, and satisfaction of the BHO’s Medicaid consumers. The study indicator selection process was well defined, objective, and measurable. The data collection process was completely and thoroughly explained, data analysis was performed, and results were presented in a manner that was easily understood and accurate.

A weakness of the study included not identifying factors that might have threatened the internal or external validity of the study.

The final validation for **ABC–Denver’s** PIP found that 10 of 11 critical elements assessed were *Met* (one critical element was *Not Applicable*), and a total of 45 out of 46 applicable elements (including critical elements) were *Met*.

There are no corrective actions identified in the report.

HSAG recommends that, in future PIPs, the BHO should address any factors that might have threatened the internal or external validity of the study.

Validation Methodology Overview

Using the PIP validation tool shown in Appendix A, HSAG assessed each component of **Access Behavioral Care – Denver’s** PIP, based on the following CMS protocol activities. As explained in the Executive Summary, the methodology requires that 10 activities be reviewed.

The activities are:

- ◆ Activity I. Appropriate Study Topic
- ◆ Activity II. Clearly Defined, Answerable Study Question
- ◆ Activity III. Clearly Defined Study Indicator(s)
- ◆ Activity IV. Correctly Identified Study Population
- ◆ Activity V. Valid Sampling Techniques (if sampling was used)
- ◆ Activity VI. Accurate/Complete Data Collection
- ◆ Activity VII. Appropriate Improvement Strategies
- ◆ Activity VIII. Sufficient Data Analysis and Interpretation
- ◆ Activity IX. Real Improvement Achieved
- ◆ Activity X. Sustained Improvement Achieved

Scoring Methodology

Each activity consists of elements necessary for the successful completion of a valid PIP. The elements within each activity were scored by the HSAG review team as *Met*, *Partially Met*, *Not Met*, or *Not Applicable (NA)*. Some of the elements have been designated “critical” elements for all PIPs (marked with a “critical element” in the Activities section of the PIP evaluation tool, Appendix A of this report). All of the critical elements must be *Met* for the PIP to produce accurate and reliable results. For example, on Activity II of the PIP evaluation tool, if the study question or hypothesis cannot be answered or proven, then this critical element will be scored as *Not Met*, and the PIP will be considered not valid.

All PIPs are scored as follows:

| | |
|----------------------------|---|
| <i>Met</i> | (1) All critical elements were <i>Met</i> , and (2) 80 percent–100 percent of all elements were <i>Met</i> . |
| <i>Partially Met</i> | (1) All critical elements were <i>Met</i> , but less than 80 percent of all elements were <i>Met</i> ; or (2) One or more critical element(s) were <i>Partially Met</i> . |
| <i>Not Met</i> | One or more critical element(s) were <i>Not Met</i> . |
| <i>Not Applicable (NA)</i> | <i>Not Applicable</i> elements (including critical elements if they were not assessed) were removed from all scoring. |

If one or more critical elements are *Not Met*, the PIP will be considered invalid. Depending on the specific elements and the phase of the PIP, the required corrective actions may include revising the PIP summary form, submitting additional documentation, and/or modifying or repeating an element of the PIP submitted for validation.

If one or more critical elements are *Partially Met*, but none are *Not Met*, the PIP will be considered valid. Depending on the specific elements and the phase of the PIP, the required corrective actions may include revising the PIP summary form, submitting additional documentation, and/or modifying the current PIP or the future PIP.

If all critical elements are *Met*, no corrective action is necessary.

For noncritical elements found to be *Partially Met* or *Not Met*, the report will provide recommendations but no required corrective actions. Responding to these recommendations will improve current and future PIPs but will not change report scores.

The scores are calculated as the percentage of elements across all activities that receive a *Met* status. The following four examples demonstrate how the scoring is applied.

Example 1: In this example, a BHO received the following scores: *Met* = 43, *Partially Met* = 2, *Not Met* = 0, *NA* = 8, and all critical elements were *Met*. The BHO would receive an overall *Met* status, indicating the PIP was considered valid. The score for the BHO would be calculated as $43/45 = 95.6$ percent. No further action would be required.

Example 2: In this example, a BHO received the following scores: *Met* = 52, *Partially Met* = 0, *Not Met* = 1, *NA* = 0, and one critical element was *Not Met*. The BHO would receive an overall *Not Met* status and the PIP would not be considered valid. The score would be calculated as a zero percentage score. Depending on the specific elements and the phase of the PIP, the required corrective actions may include revising the PIP summary form, submitting additional documentation, and/or modifying or repeating an element of the PIP submitted for validation.

Example 3: In this example, a BHO received the following scores: *Met* = 43, *Partially Met* = 1, *Not Met* = 1, *NA* = 8, and one critical element was *Partially Met*. The BHO would receive an overall *Partially Met* status, indicating the PIP was considered valid. The score for the BHO would be calculated as $43/45 = 95.6$ percent. The BHO would need to send in appropriate information to resolve the issues with the *Partially Met* critical element. Depending on the specific element and the phase of the PIP, the required corrective actions may include revising the PIP summary form, submitting additional documentation, and/or modifying the current PIP or the future PIP.

Example 4: In this example, a BHO received the following scores: *Met* = 38, *Partially Met* = 11, *Not Met* = 4, *NA* = 0, and all the critical elements are *Met*. The overall score is less than 80 percent, so the BHO would receive an overall *Partially Met* status, indicating the PIP was considered valid. The score for the BHO would be calculated as $38/53 = 71.7$ percent. For noncritical elements found to be *Partially Met*, no corrective actions are required.

Validation and Findings Overview

This section summarizes the activities evaluated for the PIP and identifies the rationale for each activity. For details, see the PIP validation tool in the appendix of this report.

Activity I. Appropriate Study Topic

Rationale

All PIPs should target improvement in relevant areas of clinical care and nonclinical services. Topics selected for study by the BHOs must reflect their Medicaid enrollment in terms of demographic characteristics, prevalence of disease, and the potential consequences (risks) of the disease (CMS PIP Protocol, page 2).

Study Topic

The purpose of **ABC–Denver’s** PIP was to reduce the rates of inpatient psychiatric readmission for a mental illness.

Findings

| Table 3-1—Findings for Activity I: Appropriate Study Topic | | | | | | | | |
|--|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| I. | 6 | 6 | 0 | 0 | 0 | 1 | 1 | 0 |

All of the evaluation elements, including the one critical element, were *Met* for this activity.

Strengths

The **ABC–Denver** PIP demonstrated the BHO’s ability to select an appropriate and relevant study topic. The study topic selection criteria used by **ABC–Denver** demonstrated that the topic selected for the study affected a significant portion of the consumers and had potentially significant impact on consumers’ mental health, functional status, or satisfaction.

Corrective Actions (for Critical Elements):

There were no corrective actions for Activity I.

Recommendations (for Noncritical Elements):

The BHO should use similar methods for determining topics for future studies.

Activity II. Clearly Defined, Answerable Study Question

Rationale

It is important for the BHO to clearly state, in writing, the question(s) the study is designed to answer. Stating the question(s) helps maintain the focus of the PIP and sets the framework for data collection, analysis, and interpretation (CMS PIP Protocol, page 5).

Study Question

ABC-Denver’s study question was:

What percentage of **ABC–Denver’s** consumers are readmitted to inpatient psychiatric care within seven and 30 days of discharge?

Findings

| Table 3-2—Findings for Activity II: Clearly Defined, Answerable Study Question | | | | | | | | |
|--|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| II. | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |

Both of the two evaluation elements in this activity received a *Met* score. The critical element for this activity was *Met*.

Strengths

The **ABC–Denver** PIP demonstrated the BHO’s ability to state and define answerable study questions that address the problem to be studied in simple terms.

Corrective Actions (for Critical Elements):

There were no corrective actions for Activity II.

Recommendations (for Noncritical Elements):

The BHO should use similar methods for defining its study questions for future studies.

Activity III. Clearly Defined Study Indicator(s)

Rationale

A study indicator is a quantitative or qualitative characteristic (variable) reflecting a discrete event that is to be measured.

Each project should have one or more quality indicators for use in tracking performance and improvement over time. All indicators must be objective, clearly and unambiguously defined, and based on current clinical knowledge or health services research. In addition, all indicators must be capable of objectively measuring either consumer outcomes—such as health or functional status, consumer satisfaction, or valid proxies of these outcomes.

Study indicators can be few and simple, many and complex, or any combination thereof—depending on the study question(s), the complexity of existing practice guidelines for a clinical condition, and the availability of data and resources to gather the data.

Indicator criteria are the set of rules by which the data collector or reviewer determines whether an indicator has been met. Pilot or field testing is helpful to the development of effective indicator criteria. Such testing allows the opportunity to add criteria that might not have been anticipated in the design phase. In addition, criteria are often refined over time, based on results of previous studies. However, if criteria are changed significantly, the method for calculating an indicator will not be consistent and performance on indicators will not be comparable over time.

It is important, therefore, for the indicator criteria to be developed as fully as possible during the design and field testing of data collection instruments (CMS PIP Protocol, page 5).

Study Indicators

ABC–Denver had two study indicators for its study. The study indicators were:

- Hospital readmission rates at seven days.
- Hospital readmission rates at 30 days.

Findings

| Table 3-3—Findings for Activity III: Clearly Defined Study Indicator(s) | | | | | | | | |
|---|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| III. | 7 | 5 | 0 | 0 | 2 | 3 | 3 | 0 |

Five of the seven evaluation elements, including the three critical elements, received a *Met* score. Two elements were scored *Not Applicable* because they were not relevant to the study topic.

Strengths

The study indicator selection process used by **ABC–Denver** demonstrated that the indicators selected were well defined, objective, and measurable. The study indicators had data available to be collected on each indicator and allowed the study question to be answered. The indicators measured changes in mental health and functional status.

Corrective Actions (for Critical Elements):

There were no corrective actions for Activity III.

Recommendations (for Noncritical Elements):

The BHO should use similar methods for selecting and defining study indicators in future PIPs.

Activity IV. Correctly Identified Study Population

Rationale

Once a topic has been selected, measurement and improvement efforts must be system-wide (i.e., each project must represent the entire Medicaid enrolled population to which the PIP study indicators apply). Once that population is identified, the BHO must decide whether to review data for that entire population or use a sample of that population. Sampling is acceptable as long as the samples are representative of the identified population (CMS PIP Protocol, page 8), as described on page 3-6 of this report (see “Activity V—Valid Sampling Techniques”).

Study Population

The **ABC–Denver** study population consisted of all consumers admitted to an inpatient setting of an acute care facility for treatment of a principal covered mental health diagnosis, with a readmission date occurring on or before December 31 of the measurement year. Consumers had to be continuously enrolled through 30 days after discharge.

Findings

| Table 3-4—Findings for Activity IV: Correctly Identified Study Population | | | | | | | | |
|---|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| IV. | 3 | 3 | 0 | 0 | 0 | 2 | 2 | 0 |

All three evaluation elements in this activity, including two critical elements, received a *Met* score.

Strengths

ABC–Denver accurately and completely defined its study population. The study population captured all consumers to whom the study question applied.

Corrective Actions (for Critical Elements):

There were no corrective actions for Activity IV.

Recommendations (for Noncritical Elements):

The BHO should use similar methods for identifying and defining its study population in future PIPs.

Activity V. Valid Sampling Techniques

Rationale

If the BHO uses a sample to select consumers for the study, proper sampling techniques are necessary to provide valid and reliable (and therefore generalizable) information on the quality of care provided. When conducting a study designed to estimate the rates at which certain events occur, the sample size has a large impact on the level of statistical confidence in the study estimates. Statistical confidence is a numerical statement of the probable degree of certainty or accuracy of an estimate. In some situations, it expresses the probability that a difference could be due to chance alone. In other applications, it expresses the probability of the accuracy of the estimate. For example, a study may report that a disorder is estimated to be present in 35 percent of the population. This estimate might have a 95 percent level of confidence, plus or minus 5 percentage points, implying a 95 percent certainty that between 30 percent and 40 percent of the population has the disease.

The true prevalence or incidence rate for the event in the population may not be known the first time a topic is studied. In such situations, the most prudent course of action is to assume that a maximum sample size is needed to establish a statistically valid baseline for the project indicators (CMS PIP Protocol, page 9).

Sampling Techniques

The entire Medicaid-eligible population was used for the **ABC–Denver** study.

Findings

| Table 3-5—Findings for Activity V: Valid Sampling Techniques | | | | | | | | |
|--|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| V. | 6 | 6 | 0 | 0 | 0 | 1 | 1 | 0 |

All of the evaluation elements in this activity, including the critical element, were *Met*.

Strengths

The sampling method used by **ABC–Denver** was appropriate for the study. The entire eligible population was used for the study.

Corrective Actions (for Critical Elements):

There were no corrective actions for Activity V.

Recommendations (for Noncritical Elements):

The BHO should use similar sampling methods as appropriate for future studies.

Activity VI. Accurate/Complete Data Collection

Rationale

Procedures used by the BHO to collect data for its PIP must ensure that the data collected on the PIP indicators are valid and reliable. Validity is an indication of the accuracy of the information obtained. Reliability is an indication of the repeatability or reproducibility of a measurement. The BHO should employ a data collection plan that includes:

- ◆ Clear identification of the data to be collected.
- ◆ Identification of the data sources.
- ◆ Specification of who will collect the data.
- ◆ Identification of instruments used to collect the data.

When data are collected from automated data systems, development of specifications for automated retrieval of the data should be devised. When data are obtained from visual inspection of medical records or other primary source documents, the following steps should be taken to ensure the data are consistently extracted and recorded.

One key to successful manual data collection is the selection of the data collection staff. Appropriately qualified personnel, with conceptual and organizational skills, should be used to abstract the data; however, the specific skills could vary depending on the nature of the data collected and the degree of professional judgment required. For example, if data collection involves searching throughout the medical record to find and abstract information or judging whether clinical criteria are met, experienced clinical staff should collect the data.

Clear guidelines for obtaining and recording data should be established, especially if multiple reviewers are used to perform this activity. The BHO should determine the necessary qualifications of the data collection staff before finalizing the data collection instrument. An abstractor would need fewer clinical skills if the data elements within the data source were more clearly defined. Defining a glossary of terms for each project should be a part of the training of abstractors to ensure consistent interpretation among and between the project staff.

The number of data collection staff used for a given project affects the reliability of the data. A smaller number of staff promotes inter-rater reliability; however, it may also increase the amount of time it takes to complete this task. Intra-rater reliability (i.e., “reproducibility” of judgments by the same abstractor at a different time) should also be considered (CMS PIP Protocol, page 12).

Data Collection

Claims and encounter data were collected from PowerStepp, the Colorado Access transaction system.

Findings

| Table 3-6—Findings for Activity VI: Accurate/Complete Data Collection | | | | | | | | |
|---|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| VI. | 11 | 6 | 0 | 0 | 5 | 1 | Not Applicable | |

Six of the 11 evaluation elements in this activity were *Met*, and five were *Not Applicable*. The critical element was *Not Applicable* for this activity because manual data collection was not used.

Strengths

ABC–Denver identified the data elements and sources used to collect the study data. The study report provided a clearly defined process for collecting the data. The timeline for the collection of baseline and remeasurement data was identified.

Corrective Actions (for Critical Elements):

The critical element for this activity was *Not Applicable* because **ABC–Denver** did not use manual data collection.

Recommendations (for Noncritical Elements):

The BHO should use similar methods for data collection for future studies.

Activity VII. Appropriate Improvement Strategies

Rationale

Real, sustained improvements in care result from a continuous cycle of measuring and analyzing performance and from developing and implementing system-wide improvements in care. Actual improvements in care depend far more on thorough analysis and implementation of appropriate solutions than on any other steps in the process.

An improvement strategy is defined as an intervention designed to change behavior at an institutional, practitioner, or beneficiary level. The effectiveness of the intervention activity or

activities can be determined by measuring the BHO’s change in performance, according to predefined quality indicators. Interventions are key to an improvement project’s ability to bring about improved health care outcomes. Appropriate interventions must be identified and/or developed for each PIP to assure the likelihood of effecting measurable change.

If repeat measures of quality improvement (QI) indicate that QI actions are not successful (i.e., did not achieve significant improvement), the problem-solving process should begin again with data analysis to identify possible causes, propose and implement solutions, etc. If QI actions are successful, the new processes should be standardized and monitored (CMS PIP Protocol, page 16).

Improvement Strategies

ABC–Denver’s interventions included the formation of adult and adolescent service work groups to explore methods of preventing hospitalization and readmission, institution of processes for identification of high-need/high-risk consumers, implementation of a protocol for follow-up and assistance by **ABC–Denver** Consumer Navigator and Family Resource Coordination staff to facilitate consumer linkage, development of procedures for tracking readmissions within 30 days, and heightened efforts toward training and development of consumer Wellness Recovery Action Plans or crisis plans.

Findings

| Table 3-7—Findings for Activity VII: Appropriate Improvement Strategies | | | | | | | | |
|---|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| VII. | 4 | 4 | 0 | 0 | 0 | No Critical Elements | | |

All of the four evaluation elements for this activity were *Met*.

Strengths

ABC–Denver identified its intervention based on causal and barrier analysis, and the intervention was likely to induce permanent change over time as the process became more routine. Revisions were made to the intervention as needed throughout the early stages of the study.

Corrective Actions (for Critical Elements):

There were no critical elements in Activity VII.

Recommendations (for Noncritical Elements):

For future PIP submissions, the study report should use similar methods for creating and implementing strategies. As this study continues, and the interventions prove to be successful the interventions should be standardized.

Activity VIII. Sufficient Data Analysis and Interpretation

Rationale

Review of BHO data analysis begins with examining the BHO’s calculated plan performance on the selected clinical or nonclinical indicators. The review examines the appropriateness of, and the BHO’s adherence to, the statistical analysis techniques defined in the data analysis plan (CMS PIP Protocol, page 17).

Data Analysis and Interpretation

The data analysis included the number and percentage of readmissions and readmissions per 1,000 consumer months at seven and 30 days for the measurement calendar year. Results and interpretations were provided in the findings.

Findings

| Table 3-8—Findings for Activity VIII: Sufficient Data Analysis and Interpretation | | | | | | | | |
|---|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| VIII. | 9 | 8 | 0 | 1 | 0 | 2 | 2 | 0 |

Eight of the nine evaluation elements, including the two critical elements, were *Met*. One element was *Not Met*.

Strengths

The analysis was conducted according to the data analysis plan and, because **ABC–Denver** used its entire population, the results were generalizable. The report included interpretations of the findings, and data were presented in a format that was clear and easy to understand. **ABC–Denver** provided significance-testing results for each indicator.

Corrective Actions (for Critical Elements):

There were no corrective actions in Activity VIII.

Recommendations (for Noncritical Elements):

Future studies should use similar methods for analyzing and interpreting data and study results. The report should address factors that could have threatened the internal or external validity of the findings.

Activity IX. Real Improvement Achieved

Rationale

When a BHO reports a change in its performance, it is important to know whether the reported change represents “real” change or is an artifact of a short-term event unrelated to the intervention, or random chance. The external quality review organization (EQRO) will need to assess the probability that reported improvement is actually true improvement. This probability can be assessed in several ways but is most confidently assessed by calculating the degree to which an intervention is statistically significant. While this protocol does not specify a level of statistical significance that must be met, it does require that EQROs assess the extent to which any changes in performance reported by a BHO can be found to be statistically significant. States may choose to establish their own numerical thresholds for finding reported improvements to be significant (CMS PIP Protocol, page 18).

Real Improvement Achieved

ABC–Denver provided statistical significance testing results for each indicator between baseline and the first remeasurement period.

Findings

| Table 3-9—Findings for Activity IX: Real Improvement Achieved | | | | | | | | |
|---|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| IX. | 4 | 4 | 0 | 0 | 0 | No Critical Elements | | |

The four evaluation elements for this activity were *Met*.

Strengths

The study used the same methodology for both the baseline and remeasurement periods, and there were documented improvements in processes and outcomes. The improvements appeared to be a result of the interventions, as the trends in readmission rates were consistent and positive.

Corrective Actions (for Critical Elements):

There were no critical elements in Activity IX.

Recommendations (for Noncritical Elements):

For future submissions, the BHO should discuss if there were improvements in processes or outcomes of care and whether the improvements appeared to be a result of the interventions. The BHO should provide statistical evidence to support the findings and demonstrate that observed improvement was true improvement.

Activity X. Sustained Improvement Achieved

Rationale

Real change results from changes in the fundamental processes of health care delivery. Such changes should result in sustained improvements. In contrast, a spurious “one time” improvement can result from unplanned accidental occurrences or random chance. If real change has occurred, the BHO should be able to document sustained improvement (CMS PIP Protocol, page 19).

Sustained Improvement Achieved

To achieve sustained improvement, a PIP must demonstrate improvement for two or more measurement periods, and **ABC–Denver** demonstrated incremental reductions in seven- and 30-day hospital readmission rates in every period of full-calendar-year measurement dating from 1999.

Findings

| Table 3-10—Findings for Activity X: Sustained Improvement Achieved | | | | | | | | |
|--|--|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| Review Activity | Total Possible Evaluation Elements (including Critical Elements) | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| X. | 1 | 1 | 0 | 0 | 0 | No Critical Elements | | |

Strengths

ABC–Denver demonstrated incremental reductions in seven- and 30-day hospital readmission rates in every period of full-calendar-year measurement dating from 1999.

Corrective Actions (for Critical Elements):

There were no critical elements in Activity X.

Recommendations (for Noncritical Elements):

For future submissions, the BHO will be scored on sustained improvement over two or more measurement period's worth of data.

Introduction

The appendices consist of the documentation that supported the validation process conducted by HSAG, utilizing the Centers for Medicare & Medicaid Services (CMS) protocols for validating Performance Improvement Projects. Appendix A provides the PIP study evaluation with scoring; Appendix B is the study submitted to HSAG for review.

- Appendix A: FY 04–05 PIP Validation Tool
- Appendix B: **ABC–Denver’s** PIP Study: *Readmissions Rates*

Appendix A FY 04–05 PIP Validation Tool
Readmissions Rates
for Access Behavioral Care – Denver

DEMOGRAPHIC INFORMATION

BHO Name or ID: Access Behavioral Care – Denver

Study Leader Name: Nancy Jacobs, PhD

Telephone Number: 720.744.5236

Name of Project/Study: Readmissions Rates

Type of Study: Clinical Nonclinical

Date of Study Period: From to

Type of Delivery System – check all that apply:

- | | |
|---|---|
| <input type="checkbox"/> Staff Model | <input type="checkbox"/> MCP |
| <input type="checkbox"/> Network | <input type="checkbox"/> PHP |
| <input type="checkbox"/> Direct IPA | <input type="checkbox"/> MCCN |
| <input type="checkbox"/> IPA Organization | <input checked="" type="checkbox"/> BHO |

_____ Number of Medicaid Consumers in BHO

_____ Number of Medicaid Consumers in Study

Number of Behavioral Health Providers (if applicable) _____

Number of Behavioral Health Physicians in the Study (if applicable) _____

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| I. Appropriate Study Topic | The study topic: | | |
| Noncritical element | 1. Reflects high-volume or high-risk conditions (or was selected by the State). | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Inpatient services represent the most intensive and intrusive level of care. Due to the high levels of distress and disruption this level of care causes to a person's life, it is sometimes clinically necessary in order to preserve consumer health, safety, and well-being. A goal of mental health treatment is to minimize such episodes. |
| Noncritical element | 2. Is selected following collection and analysis of data (or was selected by the State). | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | ABC – Denver has monitored inpatient readmission rates annually since its inception as a MHASA to assess the effectiveness of its care coordination program. In 2001, inpatient readmission rates were identified as a performance measure, and reducing the percentage of consumers who were readmitted to the hospital within seven or 30 days was the goal. |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| I. Appropriate Study Topic | The study topic: | | |
| Noncritical element | 3. Addresses a broad spectrum of care and services (or was selected by the State). | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Care coordination serves as the centerpiece of ABC – Denver's delivery system. The tiered model targets high-need/high-risk consumers in particular for support and interventions tailored to their service complexity and need. Care coordination involves working closely with the hospital team to optimize the length of hospital stay, making a thorough assessment of the consumer's clinical and social needs, identifying and resolving barriers to discharge, and linking the consumers to appropriate, ongoing community-based care and needed resources for relapse prevention. |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| I. Appropriate Study Topic | The study topic: | | |
| Noncritical element | 4. Includes all eligible populations that meet the study criteria. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The study population consisted of the number of readmissions of all ABC – Denver consumers to an inpatient setting of an acute care facility for treatment of a principal covered mental health diagnosis, with a readmission date occurring on or before December 31 of the measurement year. Consumers must have been continuously enrolled through 30 days after discharge. |
| Noncritical element | 5. Does not exclude members with special health care needs. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The study did not exclude any consumers. |

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| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|---|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| I. Appropriate Study Topic | | The study topic: | | |
| Critical element | | 6. Has the potential to affect member health, functional status, or satisfaction. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Preventing or minimizing readmissions after an inpatient stay for mental illness is an important indicator of effective mental health treatment. Through care coordination, a consumer's needs can be reduced to those that can be managed at a lower level of care. These measures would ultimately affect a consumer's health and functional status. |
| Total Critical Elements for Activity I | 1 | | <u>6</u> Met <u>0</u> Partially Met <u>0</u> Not Met <u>0</u> N/A | |

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| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| II. Clearly Defined, Answerable Study Question | | The written study question or hypothesis: | | |
| Noncritical element | | 1. States the problem to be studied in simple terms. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The study question was stated clearly. The question was, "What percentage of ABC – Denver consumers are readmitted to inpatient psychiatric care within seven and 30 days of discharge?" |
| Critical element | | 2. Is answerable/provable. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | This study question was answerable using hospital admission data, which were evaluated by the study indicators. |
| Total Critical Elements for Activity II | 1 | | <u>2</u> Met <u>0</u> Partially Met <u>0</u> Not Met <u>0</u> N/A | |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| III. Clearly Defined Study Indicator(s) | Study indicators: | | |
| Critical element | 1. Are well defined, objective, and measurable. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The study had two indicators: hospital readmission rates at seven days and hospital readmission rates at 30 days. Both of these indicators were well defined and measurable. |
| Noncritical element | 2. Are based on practice guidelines, with sources identified. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The 30-day readmission rates are commonly used in the behavioral health care field as a quality standard. |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| III. Clearly Defined Study Indicator(s) | Study indicators: | | |
| Critical element | 3. Allow for the study question/hypothesis to be answered or proven. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The indicators chosen for this study will provide the data needed to answer the study question. |
| Noncritical element | 4. Measure changes (outcomes) in health or functional status, member satisfaction, or valid process alternatives. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Readmissions within 30 days of discharge, and particularly within seven days of discharge, is widely viewed as a problematic occurrence, an indicator that follow through with outpatient care had failed or consumers were receiving suboptimal care. Monitoring the rates of readmission would help to improve patient care, resulting in improved health and functional status. |
| Critical element | 5. Have available data that can be collected on each indicator. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Eligibility data were available to collect for each indicator. |
| Noncritical element | 6. Are nationally recognized measures such as HEDIS, when appropriate? | <input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> N/A | These indicators were not nationally recognized measures. |

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| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| III. Clearly Defined Study Indicator(s) | | Study indicators: | | |
| Noncritical element | | 7. Include the basis on which each indicator was adopted, if internally developed. | <input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> N/A | The indicators chosen for the study were commonly utilized in the behavioral health care field as quality standards. |
| Total Critical Elements for Activity III | 3 | | <u>5</u> Met <u>0</u> Partially Met <u>0</u> Not Met <u>2</u> N/A | |

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| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| IV. Correctly Identified Study Population | | The method for identifying the eligible population: | | |
| Critical element | | 1. Is accurately and completely defined. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The study population consisted of the number of readmissions of all ABC – Denver consumers to an inpatient setting of an acute care facility for treatment of a principal covered mental health diagnosis, with a readmission date occurring on or before December 31 of the measurement year. |
| Noncritical element | | 2. Includes requirements for the length of a member’s enrollment in the health plan. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Consumers must have been continuously enrolled through 30 days after discharge. |
| Critical element | | 3. Captures all members to whom the study question applies. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The entire population was included in the study. |
| Total Critical Elements for Activity IV | 2 | | <u>3</u> Met <u>0</u> Partially Met <u>0</u> Not Met <u>0</u> N/A | |

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| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| V. Valid Sampling Techniques | | Sampling techniques: | | |
| Noncritical element | | 1. Consider and specify the true or estimated frequency of occurrence (or the number of eligible members in the population). | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The entire population was included in the study. |
| Noncritical element | | 2. Identify the sample size (or use the entire population). | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The entire population was included in the study. |
| Noncritical element | | 3. Specify the confidence interval to be used (or use the entire population). | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The entire population was included in the study. |
| Noncritical element | | 4. Specify the acceptable margin of error (or use the entire population). | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The entire population was included in the study. |
| Critical element | | 5. Ensure a representative sample of the eligible population. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The entire population was included in the study. |
| Noncritical element | | 6. Are in accordance with generally accepted principles of research design and statistical analysis. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The entire population was included in the study. |
| Total Critical Elements for Activity V | 1 | | 6 Met 0 Partially Met 0 Not Met 0 N/A | |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|---|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| VI. Accurate/ Complete Data Collection | The data collection techniques provide for the following: | | |
| Noncritical element | 1. Clearly defined data elements to be collected. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The data elements collected in this study were clearly defined. For both indicators, readmissions within seven and 30 days and the total number of hospital admissions, data were collected for the specified time period. Data were also collected by age band and discharging inpatient facility to help detect trends. |
| Noncritical element | 2. Clearly identified sources of data. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The data collected were administrative eligibility data. |
| Noncritical element | 3. A clearly defined and systematic process for collecting data that includes how baseline and remeasurement data will be collected. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Data were stored in PowerSTEPP and were collected once a year. To ensure data completeness, the analysis of the data did not occur until at least six months into the following year. |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|---|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| VI. Accurate/ Complete Data Collection | The data collection techniques provide for the following: | | |
| Noncritical element | 4. A timeline for the collection of baseline and remeasurement data. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The data were collected annually. The baseline data were from January 1 through December 31, 2001; Remeasurement 1 was from January 1 through December 31, 2002; Remeasurement 2 was January 1 through December 31, 2003. |
| Noncritical element | 5. Qualified staff and personnel to collect manual data. | <input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> N/A | Manual data collection was not utilized for this study. |
| Critical element | 6. A manual data collection tool that ensures consistent and accurate collection of data according to indicator specifications. | <input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> N/A | Manual data collection was not utilized for this study. |
| Noncritical element | 7. A manual data collection tool that supports inter-rater reliability. | <input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> N/A | Manual data collection was not utilized for this study. |
| Noncritical element | 8. Clear and concise written instructions for completing the manual data collection tool. | <input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> N/A | Manual data collection was not utilized for this study. |
| Noncritical element | 9. An overview of the study in written instructions. | <input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> N/A | Manual data collection was not utilized for this study. |

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| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|---|---|---|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| VI. Accurate/ Complete Data Collection | | The data collection techniques provide for the following: | | |
| Noncritical element | | 10. Automated data collection algorithms that show steps in the production of indicators. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Criteria were specified for inclusion into the numerator and denominator. If these criteria were not met, the data were not collected and included in the study data set. |
| Noncritical element | | 11. An estimated degree of automated data completeness between: | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A 80–100% 50–79% <50% (not applicable) (or not provided) | An estimated degree of automated data completeness was provided. |
| Total Critical Elements for Activity VI | 1 | | <u>6</u> Met <u>0</u> Partially Met <u>0</u> Not Met <u>5</u> N/A | |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|---|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| VII. Appropriate Improvement Strategies | Planned/implemented strategies for improvement are: | | |
| Noncritical element | 1. Related to causes/barriers identified through data analysis and QI processes. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | A performance improvement activity was implemented that conducted follow-up phone calls with consumers, the consumer’s family, or providers within 10 days after a hospital discharge. Through conducting outreach efforts, issues such as failed appointments, transportation, or other barriers were identified and resolved as they were discovered. |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|---|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| VII. Appropriate Improvement Strategies | Planned/implemented strategies for improvement are: | | |
| Noncritical element | 2. System changes that are likely to induce permanent change. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | A number of focused interventions were implemented that could lead to permanent change. For example, adult and adolescent services work groups were formed to explore methods of preventing hospitalization and readmission, processes for identification of high-need/high-risk consumers, were instituted, and telephone follow-up and outreach after discharge were implemented. Some of these initiatives helped to renew dialogue with hospital providers on the importance of setting appointments prior to discharge and with ongoing education. |
| Noncritical element | 3. Revised if original interventions are not successful. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The improvement strategies worked to reduce the readmission rates. |

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| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|--|---|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| VII. Appropriate Improvement Strategies | | Planned/implemented strategies for improvement are: | | |
| Noncritical element | | 4. Standardized and monitored if interventions are successful. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | ABC – Denver will continue to refine intervention strategies and develop new strategies as needed in order to sustain its progress toward improving the process and outcomes of care for its consumers. |
| Total Critical Elements for Activity VII | 0 | | <u>4</u> Met <u>0</u> Partially Met <u>0</u> Not Met <u>0</u> N/A | |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|---|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| VIII. Sufficient Data Analysis and Interpretation | The data analysis: | | |
| Critical element | 1. Is conducted according to the data analysis plan in the study design. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Planned analysis for this study included number and percentage of readmissions, and readmissions per 1,000 consumer months, within seven and 30 days for the measurement calendar year. Data sorts were performed by age bands and discharging inpatient facilities to help detect trends. Admission measures included consumer months, average monthly membership, total admission, total days, claims-based average daily census, days per 1,000, and admits per 1,000 consumer months for the measurement calendar year. Comparisons to the previous year’s performance were made. |
| Critical element | 2. Allows for generalization of the results to the study population if a sample was selected. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Data for the entire study population were analyzed. |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| VIII. Sufficient Data Analysis and Interpretation | The data analysis: | | |
| Noncritical element | 3. Identifies factors that threaten internal or external validity of findings. | <input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input checked="" type="checkbox"/> Not Met <input type="checkbox"/> N/A | There was no discussion on factors that may have threatened internal or external validity of the findings. |
| Noncritical element | 4. Includes an interpretation of findings. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The study report provided interpretations of the findings. Interpretations of the results were done for each measurement period: Baseline, Remeasurement 1, and Remeasurement 2. The interpretation included whether or not the goal was met and whether the intervention was successful or needed improvement. It also included interventions that were working and were going to continue to be implemented. |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| VIII. Sufficient Data Analysis and Interpretation | The data analysis: | | |
| Noncritical element | 5. Is presented in a way that provides accurate, clear, and easily understood information. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The data analysis section of the report was clear and easy to understand. There was a section that discussed what was done for each measurement period in terms of the analysis, followed by a separate section that interpreted the results and findings and how the interventions impacted the results. |
| Noncritical element | 6. Identifies initial measurement and remeasurement of study indicators. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The data analysis section of the report was divided into the three measurement periods. Each measurement period, from Baseline through Remeasurement 2, was discussed according to what was done and the results that were achieved. The results from each measurement period were compared to the previous period to track improvement. |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| VIII. Sufficient Data Analysis and Interpretation | The data analysis: | | |
| Noncritical element | 7. Identifies statistical differences between initial measurement and remeasurement. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The results from each measurement period were compared to one another and statistical significance was determined. For the first indicator, readmission rate at seven days, from 2002 to 2003, p = 0.396, there was no statistical significance; from 2001 to 2003, p = 0.508, there was no statistical significance. For the second indicator, readmission rate at 30 days, from 2002 to 2003, p = 0.779, there was no statistical significance; from 2001 to 2003, p = 0.493, there was no statistical significance. |

Appendix A FY 04–05 PIP Validation Tool
Readmissions Rates
for Access Behavioral Care – Denver

| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|---|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| VIII. Sufficient Data Analysis and Interpretation | The data analysis: | | |
| Noncritical element | 8. Identifies factors that affect ability to compare initial measurement with remeasurement. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The study was able to collect data from an initial measurement and two remeasurement periods. The goal was to observe improvement of the results over each measurement period for the seven-day evaluation and to meet the Substance Abuse Mental Health Services Administration (SAMHSA) goal for the 30-day evaluation. |

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for Access Behavioral Care – Denver

| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|---|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| VIII. Sufficient Data Analysis and Interpretation | | The data analysis: | | |
| Noncritical element | | 9. Includes the extent to which the study was successful. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The study was successful in showing reduction in seven- and 30-day hospital readmission rates in every period of full-calendar-year measurement dating from 1999. The results were not statistically significant, but the trend was consistent and positive. |
| Total Critical Elements for Activity VIII | 2 | | 8 Met 0 Partially Met 1 Not Met 0 N/A | |

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| ACTIVITIES | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|--|--|--|
| Performance Improvement Project/Health Care Study Evaluation | | | |
| Assess the Study Methodology | | | |
| IX. Real Improvement Achieved | There is evidence of “real” improvement based on the following: | | |
| Noncritical element | 1. Remeasurement methodology is the same as baseline methodology. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The study report stated there were no known random year-to-year variations in study methodology. |
| Noncritical element | 2. There is documented improvement in processes or outcomes of care. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | The baseline rate for readmission rates at seven days was 5.3 percent. This rate decreased each measurement period, from 4.7 percent to a final of 4.1 percent. The rates for the readmission rates at 30 days started at 14.5 percent, decreased to 13.6 percent at Remeasurement 1, and had a final rate of 13.3 percent. These rates were not significant, but they were consistent and positive. |

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| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|---|--|---|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| IX. Real Improvement Achieved | | There is evidence of “real” improvement based on the following: | | |
| Noncritical element | | 3. The improvement appears to be the result of intervention(s). | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Although the reduction in rates for seven- and 30-day readmission rates were not statistically significant, the trends were consistent and positive and suggest the targeted intervention strategies implemented during the two-year study period were effective. |
| Noncritical element | | 4. There is statistical evidence that observed improvement is true improvement. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | Since ABC – Denver had demonstrated reduction in its hospital readmission rates for every period since 1999, it can be assumed that the improvements were true improvements. |
| Total Critical Elements for Activity IX | 0 | | 4 Met 0 Partially Met 0 Not Met 0 N/A | |

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| ACTIVITIES | | EVALUATION ELEMENTS | SCORING | COMMENTS |
|---|---|--|--|---|
| Performance Improvement Project/Health Care Study Evaluation | | | | |
| Assess the Study Methodology | | | | |
| X. Sustained Improvement Achieved | | There is evidence of sustained improvement based on the following: | | |
| Noncritical element | | 1. Repeated measurements over comparable time periods demonstrate sustained improvement, or the decline in improvement is not statistically significant. | <input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> N/A | ABC – Denver demonstrated incremental reductions in seven- and 30-day hospital readmission rates in every period of full-calendar-year measurement dating from 1999. While these rates were not statistically significant, they were consistent and positive. |
| Total Critical Elements for Activity X | 0 | | <u>1</u> Met <u>0</u> Partially Met <u>0</u> Not Met <u>0</u> N/A | |

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**Table A-1—FY 04–05 2005 Performance Improvement Project Scores
for Readmissions Rates
for Access Behavioral Care – Denver**

| Review Activity | Overall totals, including Critical Elements | | | | | Critical Elements only | | |
|---|---|-----------|---------------------|---------------|-----------|----------------------------------|-----------------------------|---------------------------------------|
| | Total Possible Evaluation Elements | Total Met | Total Partially Met | Total Not Met | Total N/A | Total Possible Critical Elements | Total Critical Elements Met | Total Critical Elements Partially Met |
| I. Appropriate Study Topic | 6 | 6 | 0 | 0 | 0 | 1 | 1 | 0 |
| II. Clearly Defined, Answerable Study Question | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| III. Clearly Defined Study Indicator(s) | 7 | 5 | 0 | 0 | 2 | 3 | 3 | 0 |
| IV. Correctly Identified Study Population | 3 | 3 | 0 | 0 | 0 | 2 | 2 | 0 |
| V. Valid Sampling Techniques | 6 | 6 | 0 | 0 | 0 | 1 | 1 | 0 |
| VI. Accurate/Complete Data Collection | 11 | 6 | 0 | 0 | 5 | 1 | Not Applicable | |
| VII. Appropriate Improvement Strategies | 4 | 4 | 0 | 0 | 0 | No Critical Elements | | |
| VIII. Sufficient Data Analysis and Interpretation | 9 | 8 | 0 | 1 | 0 | 2 | 2 | 0 |
| IX. Real Improvement | 4 | 4 | 0 | 0 | 0 | No Critical Elements | | |
| X. Sustained Improvement Achieved | 1 | 1 | 0 | 0 | 0 | No Critical Elements | | |
| Totals for All Activities | 53 | 45 | 0 | 1 | 7 | 11 | 10 | 0 |

**Table A-2—FY 04–05 Performance Improvement Project Overall Score
for Readmissions Rates
for Access Behavioral Care – Denver**

| | |
|--------------------------|-------------|
| Percentage Score* | 98%* |
| Validation Status | Met |

* Percentage score is calculated by dividing the total *Met* by the sum of the total *Met*, *Partially Met*, and *Not Met*. However, if any critical elements are scored *Not Met*, the percentage score will automatically be zero.

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EVALUATION OF THE OVERALL VALIDITY AND RELIABILITY OF PIP/STUDY RESULTS

According to CMS protocol, HSAG assesses the implications of all findings on the validity and reliability of the BHO PIP and reviews the study based on demonstrated confidence in the reported PIP findings. HSAG identifies PIP design problems and determines when an accumulation of threats to validity and reliability reaches a point at which PIP findings are no longer credible. (CMS PIP Protocol, Activity 3, page 21.)

***Met** = High confidence/Confidence in reported BHO PIP results

****Partially Met** = Low confidence in reported BHO results

*****Not Met** = Reported BHO results not credible

Summary of Aggregate Validation Findings

* **Met**

** **Partially Met**

*** **Not Met**

Summary statement of the validation findings: Based on the validation of this PIP study, HSAG has high confidence in the reported results.

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READMISSIONS RATES
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Performance Improvement Project (PIP) Name: *Readmissions Rates*

Activity I: Select the Study Topic(s)

A. Step One: Choose the Selected Study Topic. Topics selected for study should reflect the Medicaid enrollment in terms of demographic characteristics, prevalence of disease, and the potential consequences (risks) of the disease. Topics could also address the need for a specific non-clinical service. The goal of the project should be to improve processes and outcomes of health care for the full affected population. The topic may be specified by the State Medicaid agency or on the basis of Medicaid enrollee input.

Study Topic:

The purpose of the study is to reduce the rates of inpatient psychiatric readmission for a mental illness within 7 and 30 days. Inpatient services represent the most intensive and intrusive level of care. The need for this level of care indicates a high level of distress and disruption to an individual's personal, family, and community roles. While at times clinically necessary to preserve member health, safety, and well-being, a psychiatric inpatient stay signifies an acute episode of illness, and is also a high cost service. An important goal of mental health treatment is to minimize such episodes. Best practice and efficiency call for preventing inpatient admissions or providing short stays supported by a range of appropriate less restrictive services. While readmission to an inpatient facility may be required for some members, readmission within 30 days of discharge, and particularly within 7 days of discharge, is widely viewed as a problematic occurrence, perhaps indicative of failure to follow through with outpatient care, or sub-optimal care provided to recipients. Avoiding the recurrence of acute illness and re-hospitalization is an important indicator of effective mental health treatment.

30-day readmission rates are commonly used in the behavioral health care field as a quality standard and are included in the benchmarking efforts of the Substance Abuse and Mental Health Services Administration (SAMHSA), American Managed Behavioral Healthcare Association (AMBHA), and National Association of State Mental Health Program Directors (NASMHPD). The latter sponsors the Sixteen State Study, to which Colorado MHASAs have contributed data through the public mental health system.

Care coordination serves as the centerpiece of Access Behavioral Care Denver's delivery system. The tiered model targets high-need/high risk members in particular for support and interventions tailored to their service complexity and need. Care coordination at this level is designed to manage care for members in crisis who require stabilization through acute inpatient care. This involves working closely with the hospital team to optimize the length of hospital stay, making a thorough assessment of the member's clinical and social needs, identifying and resolving barriers to discharge, and linking the member to appropriate, ongoing community-based care and needed resources for relapse prevention. The goal of the care coordination clinical and advocacy team is to reduce the member's needs to those that can be managed at a lower level of care.

Access Behavioral Care Denver has monitored inpatient readmission rates annually since its inception as a MHASA, to assess the effectiveness of its care coordination program. Beginning in 2001, this monitor was identified as a performance measure to further reduce the percentage of members who are readmitted to the hospital within 7 or 30 days of discharge and improve clinical outcomes by averting recurrences of acute illness. New initiatives were undertaken to improve rates of ambulatory follow-up and support psychiatric stability. The baseline year (2001) with two years of remeasurement (2002 and 2003) serves to evaluate the effectiveness of interventions.

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B. Step Two: The Study Question. Stating the question(s) helps maintain the focus of the PIP and sets the framework for data collection, analysis, and interpretation.

Study Question:

What percentage of Access Behavioral Care Denver members are readmitted to inpatient psychiatric care within 7 and 30 days of discharge?

C. Step Three: Selected Study Indicators. A study indicator is a quantitative or qualitative characteristic or variable that reflects a discrete event (e.g., rates of hospital readmissions within 30 or 90 days), or a status (e.g., percent of consumers reporting that they actively participate in treatment planning) that is to be measured. The selected indicators should be appropriate for the study topic and question as well as track performance or improvement over time. The indicators should be objective, clearly and unambiguously defined, and based on current clinical knowledge or health services research.

| | |
|----------------------------------|--|
| Study Indicator #1: | Hospital readmission rates at 7 days |
| Numerator: | Number of hospital readmissions within 7 days of the date of discharge during the calendar year of measurement |
| Denominator: | Number of hospital admissions within the calendar year for all eligible members |
| Measurement Period Dates: | Date of service January 1 through December 31 of the measurement calendar year |
| Benchmarks: | CY 2001: 5.3%; CY 2002: 4.7% |
| Source of Benchmark: | No benchmark available – Access Behavioral Care Denver prior year performance was used |
| Baseline Goal: | 7-day readmission rates less than or equal to prior year rates |
| Study Indicator #2: | Hospital readmission rates at 30 days |
| Numerator: | Number of hospital readmissions within 30 days of the date of discharge during the calendar year of measurement |
| Denominator: | Number of hospital admissions within the calendar year for all eligible members |
| Measurement Period Dates: | Date of service January 1 through December 31 of the measurement calendar year |
| Benchmarks: | CY 2001: 14.5%; CY 2002: 13.6% CY 2003: SAMHSA 30 day readmission rate means: Overall 11.0%; Children/Adolescents 10.7%; Adults 14.4% |
| Source of Benchmark: | For CY 2001 and 2002: no benchmark available – Access Behavioral Care Denver prior year performance was used For CY 2003: February 2003 SAMHSA Medicaid Managed Behavioral Health Care Benchmarking Project |
| Baseline Goal: | 30-day readmission rates less than or equal to SAMHSA means |

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D. Step 4: Identified Study Population. The study population should be clearly defined to represent the entire population to which the PIP study question and indicators apply. The length of recipient enrollment should be considered and defined. All selection criteria should be listed here. Once the population is identified, a decision must be made whether to review data for the entire population or a sample of that population.

Identified Study Population:

The study population consists of the number of readmissions of all Access Behavioral Care Denver members to an inpatient setting of an acute care facility for treatment of a principal covered mental health diagnosis, with a readmission date occurring on or before December 31 of the measurement year. Members must have been continuously enrolled through 30 days after discharge.

The entire population was included in the study and no sampling was conducted.

E. Step 5: Sampling Methods. If sampling is to be used to select members of the study, proper sampling techniques are necessary to provide valid and reliable information on the quality of care provided. The true prevalence or incidence rate for the event in the population may not be known for the first time a topic is studied. In this case, an estimate should be used and the basis for that estimate indicated.

| Measure | Sample Error and Confidence Level | Sample Size | Population | Method for Determining Size (<i>describe</i>) | Sampling Method (<i>describe</i>) |
|--|-----------------------------------|-------------|------------|---|-------------------------------------|
| Not applicable – total population used | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

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F. Step 6: Data Collection Procedures. Data collection must ensure that the data collected on the PIP indicators are valid and reliable. Validity is an indication of the accuracy of the information obtained. Reliability is an indication of the repeatability or reproducibility of a measurement.

Data Sources

Hybrid (medical/treatment records and administrative)

Medical/treatment record abstraction

Record Type

Outpatient

Inpatient

Other _____

Other Requirements

Data collection tool attached

Data collection instructions attached

Summary of data collection training attached

IRR process and results attached

Other data

Description of Data Collection Staff

Administrative data

Data Source

Programmed pull from claims/encounters

Complaint/appeal

Pharmacy data

Telephone service data /call center data

Appointment/access data

Delegated entity/vendor data _____

Other Eligibility data

Other Requirements

Data completeness assessment attached

Coding verification process attached

Survey Data

Fielding Method

Personal interview

Mail

Phone with CATI script

Phone with IVR

Internet

Other _____

Other Requirements

Number of waves _____

Response rate _____

Incentives used _____

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F. Step 6a: Data Collection Cycle.

Data Analysis Cycle.

- Once a year
- Twice a year
- Once a season
- Once a quarter
- Once a month
- Once a week
- Once a day
- Continuous
- Other (list and describe):

- Once a year
- Once a season
- Once a quarter
- Once a month
- Continuous
- Other (list and describe):

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F. Step 6b. Data Analysis Plan and Other Pertinent Methodological Features

Claims and encounter data from PowerSTEPP, the Colorado Access transaction system, is downloaded monthly into Medstat, the data analysis system, from which it is extracted using administrative methodology. The timeline for data analysis is at least 6 months into the following calendar year, to allow full claims run-out and help ensure data completeness. Quantitative data is collected at that point on the total population of admissions and readmissions within the calendar year measurement period. Specifications for this measure include the following parameters:

- A member with more than one admission during the measurement year to an inpatient facility for treatment a principal covered mental health diagnosis could be counted more than once in the eligible population.
- Admission and readmission dates from January 1 through December 31 of the measurement year to an inpatient facility for treatment of a principal covered mental health diagnosis are included in the denominator and numerator, respectively.

Planned analysis includes number and percentage of readmissions, and readmissions per 1000 member months, within 7 and 30 days for the measurement calendar year. Data sorts are performed for age band and discharging inpatient facility, to help detect any trends. Admissions measures include member months, average monthly membership, total admissions, total days (admissions and readmissions), claims-based average daily census, days per 1000 and admits per 1000 member months for the measurement calendar year. Comparisons to previous year performance are conducted.

G. Step 7. Improvement Strategies. Real, sustained improvements in care result from a continuous cycle of measuring and analyzing performance, and developing and implementing system-wide improvements in care. Describe interventions designed to change behavior at an institutional, practitioner, or beneficiary level.

Interventions: Baseline to Remeasurement 1

Calendar year 2001 measurements established baseline statistics for admissions and readmissions within 7 and 30 days. As admissions and bed days increased, Access Behavioral Care Denver clinical Service Coordinators had concentrated their efforts on actively managing inpatient cases and assuring outpatient follow-up care to reduce rates of subsequent hospital readmission.

It was felt that additional opportunities existed for further gains. A number of focused interventions were implemented in the fiscal year period from baseline measurement in 2001 to remeasurement in 2002 which contributed to ongoing improvements in readmission rates. Among these were:

- The formation of adult and adolescent services work groups to explore methods of preventing hospitalization and readmission.
- Institution of processes for identification of high-need/high-risk members, such as use of emergency room/hospital utilization and financial reports for targeted and enhanced care coordination activities.

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- Implementation of a protocol for follow-up and assistance by Access Behavioral Care Denver Consumer Navigator and Family Resource Coordinator staff to facilitate consumer linkage with outpatient care following a hospital discharge to help reduce subsequent readmission;
- Development of procedures for tracking readmissions within 30 days, including service, care system, and consumer variables. Analysis of child data in 2001 indicated that eleven of eighteen members were readmitted from day treatment and residential facilities, suggesting a higher level of need and instability. Additionally, eleven of eighteen had insufficient or missing crisis plans.
- Utilization of previous analysis of readmission data for members ages 12-17 by primary diagnosis, facility, and ethnicity to help focus specific care coordination efforts for this population.
- Heightened efforts toward training and development of member Wellness Recovery Action Plans (WRAP) or crisis plans.

Interventions: Remeasurement 1 to Remeasurement 2

At the first remeasurement period in 2002, rates of readmission within 7 and 30 days showed notable improvement over the prior year, with an 11.3% decrease in 7-day readmission rates decreasing from CY 2001, and a 6.2% decrease in 30-day readmission rates from CY 2001. In the effort to improve follow-up from inpatient to outpatient care and further reduce rates of hospital readmission, Access Behavioral Care Denver initiated a major enhancement of its care coordination process in February 2003. It was anticipated that outreach conducted by ABC Denver staff after a member's hospital discharge would increase rates of follow-up care and thereby help avert readmissions. A performance improvement activity was implemented to follow up by telephone with members, their family members or providers within 10 days after a hospital discharge. Clinical staff identified each discharge and disposition, and collected the necessary information. The case was then assigned to consumer and family advocacy staff to make the contact, facilitate timely outpatient care and address any obstacles to the member's follow-up. In the course of conducting outreach, issues such as failed appointments, transportation, or other barriers were identified and resolved as they were discovered. Information and assistance was given to members or their family members as needed to ensure follow-up care. When appointments were missed, direct contacts with outpatient providers often resulted in provider case management outreach to engage the member or family in follow-up. The initiative also renewed dialogue with hospital providers on the importance of setting appointments prior to discharge, and with ongoing education, the percentage of discharges with scheduled follow-up appointments increased.

The established goal for this intervention was 90% successful follow-up. Access Behavioral Care Denver surpassed the performance goal for outreach with an average contact rate of 94% for the period February through December 2003. There were a total of 680 discharges, and of these, successful follow-up was conducted with 637. Average days post-discharge to contact was 4.6 days, and average days post-discharge to scheduled follow-up decreased from 5.5 days in the first quarter to 3.3 days in the fourth quarter, for an average of 4.1 days.

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H. Step 8A. Data analysis: Describe the data analysis process in accordance with the analysis plan and any ad-hoc analysis done on the selected clinical or non-clinical study indicators. Include the statistical analysis techniques utilized and *p* values.

Baseline Measurement

For the baseline year of measurement, rates of readmission for calendar year 2001 were 5.3% at 7 days and 14.5% at 30 days. The measure was conducted in August 2002 for calendar year 2001, using administrative methodology. Analysis by age band indicated that young adults ages 18-21 had the highest rates of readmission at both 7 days (23.7%) and 30 days (39.5%). The lowest rates of readmission at 7 days were obtained by adolescents ages 12-17 (2.9%) and the lowest rates of readmission at 30 days were obtained by adults ages 60 and older (8.3%). Access Behavioral Care Denver's three core hospital providers averaged 7-day readmission rates of 5.4% and 30-day readmission rates of 14.3% for discharged members, very nearly mirroring the overall rates. Admission statistics were established as baseline measures.

Remeasurement 1

For the first year of remeasurement, rates of readmission for calendar year 2002 were 4.7% at 7 days and 13.6% at 30 days. The measure was conducted in August 2003 for calendar year 2002, using administrative methodology. These rates indicate an improvement from calendar year 2001 readmission rates of 5.3% at 7 days and 14.5% at 30 days. The raw number of readmissions decreased from CY 2001 to CY 2002 at 7 and 30 days, as well as 7-day and 30-day readmission rates per 1000 member months. By age band, adults accounted for approximately 57% of all initial admissions, 5.2% of 7-day readmissions, and 12.6% of 30-day readmissions. Children and adolescents had lower 7-day readmission rates, at 4.1%, but higher 30-day readmission rates, at 13.6%. Access Behavioral Care Denver's three core hospital providers showed relatively low 7-day rates of readmission for discharged members, at 4.0% for readmissions within 7 days and 13.1% for readmissions within 30 days. Admission statistics for the calendar year indicated that despite a 5% increase in average monthly membership from the previous year, total admissions, total days, claims-based average daily census, days per 1000 and admits per 1000 all decreased.

Remeasurement 2

For the second year of remeasurement, rates of readmission for calendar year 2003 were 4.1% at 7 days and 13.3% at 30 days. The measure was conducted in July 2004 for calendar year 2003, using administrative methodology. These rates show a reduction from calendar year 2002 readmission rates of 5.8% at 7 days and 16.2% at 30 days, and a positive trend of ongoing declining readmission rates, although not statistically significant. Statistical tests calculating variance ranges of the percentages and determining the degree of overlap at the 95% confidence level indicated that the differences were not statistically significant in comparison to CY 2002 rates at either 7 days ($p = 0.396$) or 30 days ($p = 0.779$), or in comparison to CY 2001 at either 7 days ($p = 0.508$) or 30 days ($p = 0.493$). Results for this period by age band reflected a shift in 7-day readmission rates, with higher rates for children and adolescents compared to CY 2002 (4.8%) and lower rates for adults (3.6%). While 30-day readmission rates stayed relatively stable for adults (12.7%), 30-day readmission rates for children and adolescents decreased to 11.5%. For Access Behavioral Care Denver's three core hospital providers, 7-day readmission rates decreased from CY2002 to 3.4%, but 30-day readmission rates increased to 13.6%. Admissions statistics for the calendar year indicated that with an 8% increase in average monthly membership from the previous year, total days increased, but all other indicators remained fairly constant.

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Ad hoc analysis of factors associated with readmission based on data obtained from the post-hospitalization follow-up outreach project indicated that 35% of members who were readmitted had two or more readmissions, and 29% with any readmission had documented non-compliance with treatment or medications. Multiple co-morbidities such as substance abuse, medical conditions, and/or developmental disability were also noted. Primary diagnosis was predominantly bipolar disorder. No patterns could be detected in this data set that clearly linked readmission to length of stay or follow-up with outpatient care.

Step 8B. Interpretation of study results: Describe the results of the statistical analysis, interpret the findings, and discuss the successfulness of the study and indicate follow-up activities. Also, identify any factors that could influence the measurement or validity of the findings.

Baseline Measurement

Baseline rates of CY 2001 hospital readmission within 7 and 30 days were established during this period. Reductions in rates of readmission and in inpatient average daily census, days per 1000, and admits per 1000, despite a growing membership and an increase in total admissions, suggest that Access Behavioral Care Denver's active and effective management of inpatient utilization and post-hospitalization care coordination had a positive impact on admission and readmission statistics, in the absence of a focused intervention strategy. Findings that young adults ages 18-21 had the highest rates of readmission at both 7 and 30 days suggests that members in this group may warrant additional care coordination attention and consideration of the special needs of this population. Because additional opportunities for improvement such as these were evident from the data, Access Behavioral Care Denver decided to explore the possibilities for a more targeted intervention strategy.

Remeasurement 1

Rates of CY 2002 hospital readmission within both 7 and 30 days met the goal of improvement over the prior year's rates. Reductions in rates of readmission at 7 and 30 days, in conjunction with indicators of improvement in the reduction of hospital admissions and days despite growing membership, suggest that Access Behavioral Care Denver's focused efforts in the areas of active care coordination and post-hospitalization follow-up led to improvements in the ability to maintain members at community-based levels of care. Targeted interventions described previously met with varying degrees of success; for example, protocols and procedures implemented at the MHASA level to identify high-risk/high-need consumers and provide them with enhanced care coordination services, ensuring linkage to clinically appropriate services in the community, were readily accomplished, appear to have had a positive impact on member care as evidenced by admission, readmission, and follow-up measures, and are ongoing. Adult services workgroups with Access Behavioral Care Denver core providers to explore methods of preventing hospitalization and readmission contributed to a shared commitment and consensus around intervention strategies, although adolescent services workgroups were somewhat less productive due to the relatively limited resources available within the delivery system for this population. Data collection and analysis strategies were ended in favor of actionable strategies based on what was found, such as the development of WRAP or crisis plans. Later analysis found a small but increasing percentage of members with WRAP plans, and a consistent focus by Consumer Navigator and Family Resource Coordinator staff on helping each of the members and families with whom they had contact to develop crisis plans.

Remeasurement 2

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for ACCESS BEHAVIORAL CARE – DENVER

Performance Improvement Project (PIP) Name: *Readmissions Rates*

Rates of CY 2003 hospital readmission within 7 and 30 days again met the goal of improvement over the prior year's rate and represent a continuing downward trend over time, although improvements compared to CY 2002 and CY 2001 were not statistically significant, since the changes are incremental and the numerators and denominators are small. This was the first measurement year for which a nationally recognized benchmark (SAMHSA) was available for 30-day readmission rates. Access Behavioral Care Denver's overall 30-day readmission rate, at 13.3%, exceeded the SAMHSA mean of 11.0%, and therefore did not meet the stated goal. The 30-day readmission rate for children and adolescents, 11.5%, was less than one percentage point higher than the SAMHSA mean and well within one standard deviation (7.6% calculated by SAMHSA) but did not meet the goal. On the other hand, the 30-day readmission rate for adults, 12.7%, was lower than the SAMHSA mean of 14.4% and therefore did meet the goal. When viewed in conjunction with the findings that 7-day readmission rates decreased from 5.2% to 3.6% for adults, and 30-day readmission rates decreased from 13.6% to 11.5% for children and adolescents, these results suggest that the intervention strategies to facilitate ongoing, clinically appropriate outpatient services and prevent hospital recidivism through direct contact, outreach, and linkage to needed resources had a positive effect on member outcomes. Access Behavioral Care Denver is encouraged by these results and believes that we are moving in the right direction, yet recognizes that additional improvements might be made. For example, the somewhat higher 7-day readmission rates for children and adolescents obtained in this measurement period as compared to the previous measurement period suggest that Access Behavioral Care Denver may wish to look further into possible reasons for this and determine whether there exist other or additional strategies that might be implemented. Also, information from the ad hoc analysis of data from the hospital outreach project may helpful in leading to new approaches to reduce recidivism, although the individual cases captured in this data are for the most part already well known to us and the focus of intensive care coordination efforts.

Access Behavioral Care Denver will consider these findings and seek to identify any opportunities to further reduce readmission rates through its quality committee structure, but plans to continue conducting post-hospitalization outreach to members and families. Preliminary evidence appears to indicate that this intervention strategy is useful to members and families, and is likely to have had at least some impact on the gains that were seen in reduction of readmission rates and increases in follow-up after an inpatient stay. Measurement of 7 and 30 day readmission rates will continue on an annual basis to assess the effectiveness of any new or continuing interventions.

APPENDIX B FY 04–05 PIP VALIDATION TOOL
READMISSIONS RATES
for ACCESS BEHAVIORAL CARE – DENVER

Performance Improvement Project (PIP) Name: *Readmissions Rates*

I. Step 9. Study Results Summary and Improvement: List study results and describe any meaningful change in performance observed during the time period of analysis.

#1 Quantifiable Measure: Readmission Rate at 7 Days

| Time Period Measurement Covers | Baseline Project Indicator Measurement | Numerator | Denominator | Rate or Results | Industry Benchmark | Statistical Test and Significance* |
|--------------------------------|--|-----------|-------------|-----------------|--------------------|--|
| CY 2001 | Baseline: | 46 | 873 | 5.3% | None available | Variance ranges of the percentages and degree of overlap at the 95% confidence level CY 2003 to CY 2002: $p = 0.396$ Not significant CY 2003 to CY 2001: $p = 0.508$ Not significant |
| CY 2002 | Remeasurement 1: | 40 | 851 | 4.7% | None available | |
| CY 2003 | Remeasurement 2: | 35 | 857 | 4.1% | None available | |
| | | | | | | |

#2 Quantifiable Measure: Readmission Rate at 30 Days

| Time Period Measurement Covers | Baseline Project Indicator Measurement | Numerator | Denominator | Rate or Results | Industry Benchmark | Statistical Test and Significance* |
|--------------------------------|--|-----------|-------------|-----------------|--------------------|--|
| CY 2001 | Baseline: | 127 | 873 | 14.5% | 11.0% | Variance ranges of the percentages and degree of overlap at the 95% confidence level CY 2003 to CY 2002: $p = 0.779$ Not significant CY 2003 to CY 2001: $p = 0.493$ Not significant |
| CY 2002 | Remeasurement 1: | 116 | 851 | 13.6% | 11.0% | |
| CY 2003 | Remeasurement 2: | 114 | 857 | 13.3% | 11.0% | |
| | | | | | | |

* If used, specify the test, p value, and specific measurements (e.g., baseline to remeasurement #1, remeasurement #1 to remeasurement #2, etc., or baseline to final remeasurement) included in the calculations.

APPENDIX B FY 04–05 PIP VALIDATION TOOL
READMISSIONS RATES
for ACCESS BEHAVIORAL CARE – DENVER

| 7-Day Readmission Rates | | | | 30-Day Readmission Rates | | | |
|-------------------------|------|------|------|--------------------------|-------|-------|-------|
| | 2001 | 2002 | 2003 | | 2001 | 2002 | 2003 |
| Admissions | 873 | 851 | 857 | Admissions | 873 | 851 | 857 |
| 7-day Readmission # | 46 | 40 | 35 | 30-day Readmission # | 127 | 116 | 114 |
| 7-day Readmission % | 5.3% | 4.7% | 4.1% | 30-day Readmission % | 14.5% | 13.6% | 13.3% |
| Upper Confidence Limit | 6.8% | 6.1% | 5.4% | Upper Confidence Limit | 16.8% | 15.9% | 15.6% |
| Lower Confidence Limit | 3.8% | 3.3% | 2.8% | Lower Confidence Limit | 12.2% | 11.3% | 11.0% |

Performance Improvement Project (PIP) Name: *Readmissions Rates*

J. Step 10. Sustained improvement: Describe any demonstrated improvement through repeated measurements over comparable time periods. Discuss any random year-to-year variation, population changes, and sampling error that may have occurred during the remeasurement process.

Access Behavioral Care Denver has demonstrated incremental reductions in 7 and 30 day hospital readmission rates in every period of full calendar year measurement dating from 1999. While not statistically significant, the trend is consistent and positive, and suggests that the targeted intervention strategies implemented within the last two years have been effective. Access Behavioral Care Denver will continue to make efforts to refine intervention strategies, and develop new intervention strategies as needed, in order to sustain its progress toward improving the process and outcomes of care for its members, through effective care coordination and linkage to needed services and resources.

There was no known random year-to-year variation in study methodology. Although the MHASA's population grew by 16% from CY 2001 to CY 2003, this does not appear to have had any impact on admission statistics which might have affected numerators and denominators over time. It is expected that Access Behavioral Care Denver's unique care coordination model will continue to be successful in optimizing hospital length of stay for its members, identifying risks and barriers for individual members, arranging the most appropriate ongoing community-based care to help reduce the risk of recidivism.