State of Colorado

Department of Health Care Policy & Financing

FY 06–07 PIP Validation Report

Improving Follow-Up After An Inpatient Stay

for

Access Behavioral Care

June 2007

HSAG Health Services Advisory Group

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HSAG HEALTH SERVICES ADVISORY GROUP

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for Access Behavioral Care

Overview

The Balanced Budget Act (BBA) of 1997 (Public Law 105-33) requires that states conduct an annual evaluation of their managed care organizations (MCOs) and prepaid inpatient health plans (PIHPs) to determine the MCOs' and PIHPs' compliance with federal regulations and quality improvement standards. According to the BBA, the quality of health care delivered to Medicaid consumers in MCOs and PIHPs must be tracked, analyzed, and reported annually. The Colorado Department of Health Care Policy & Financing (the Department) has contractual requirements with each MCO and behavioral health organization (BHO) to conduct and submit performance improvement projects (PIPs) annually. As one of the mandatory external quality review activities under the BBA, the Department is required to validate the PIPs. To meet this validation requirement, the Department contracted with Health Services Advisory Group, Inc. (HSAG) as an external quality review organization. The primary objective of the PIP validation is to determine compliance with requirements set forth in 42 Code of Federal Regulations (CFR) 438.240(b)(1), including:

- Measurement of performance using objective quality indicators.
- Implementation of system interventions to achieve improvement in quality.
- Evaluation of the effectiveness of the interventions.
- Planning and initiation of activities for increasing or sustaining improvement.

The Centers for Medicare & Medicaid Services (CMS) publication, *Validating Performance Improvement Projects: A Protocol for Use in Conducting Medicaid External Quality Review Activities*, Final Protocol, Version 1.0, May 1, 2002, was used in the evaluation and validation of the PIPs.

Summary of Study

The purpose of the study was to improve the rates of consumer follow-up treatment within 7- and 30-days following an inpatient stay for a mental illness.

Study Topic

The study topic addressed CMS' requirements related to the quality of and access to care and services. During calendar year (CY) 2003, hospital admissions accounted for approximately 14 percent of **Access Behavioral Care**'s (**ABC**'s) utilization and approximately 34 percent of total medical costs. Incremental gains had been made in each annual measurement for Health Plan

Employer Data and Information Set (HEDIS®)[1] rates of follow-up within 7- and 30-days. However, **ABC** determined that opportunities existed to further improve outcomes of care through enhanced care coordination processes. The original study used CY 2001 as the baseline and CY 2002 and CY 2003 as remeasurements. For the current study, the baseline was CY 2003, with CY 2004, CY 2005, and CY 2006 as the first, second, and third remeasurements, respectively.

Study Methodology

Two study indicators were developed to collect data that would answer the study question. The study indicators reported the rate of ambulatory or intermediate follow-up services after an inpatient stay within 7- and 30-days. **ABC** originally used the national Medicaid HEDIS 90th percentile as the benchmark for 2003 and 2004. **ABC** determined that meeting the 90th percentile for 7- and 30-day follow-up rates was unrealistic. As a result, **ABC** adjusted its benchmark to the national Medicaid HEDIS 50th percentile for CY 2003, CY 2004, CY 2005, and CY 2006. The study population consisted of the number of psychiatric inpatient discharges of consumers who were 6 years of age and older on the date of discharge from an inpatient setting of an acute care facility, with a discharge date occurring on or before December 1 of the measurement year. Consumers must have been continuously enrolled for 30 days after discharge and have had no gaps in enrollment. The entire population was included in the study.

Study Results

Follow-up rates calculated for CY 2006 resulted in much lower rates than previously reported. The dramatic change in rates from CY 2005 to CY 2006 prompted a recalculation of the CY 2003 to CY 2005 rates. **ABC**'s efforts to reproduce the rates calculated for CY 2003 to CY 2005 were unsuccessful. **ABC** realized during its attempts to reproduce previously reported rates that there were several deviations from HEDIS methodology; however, the deviations were not sufficiently documented. **ABC** concluded that the primary goal was to be confident in its ability to compare rates from year to year to detect sustained improvement. **ABC** recalculated follow-up rates for all previous years to allow for comparison of rates from baseline to the third remeasurement. **ABC** achieved sustained and statistically significant improvement in the rates of follow-up within 7- and 30-days of inpatient discharge from a psychiatric hospitalization from 2003 through 2006. For remeasurement 3 (CY 2006), ambulatory or intermediate follow-up after an inpatient stay within 30 days exceeded the HEDIS 50th percentile by 2.6 percentage points.

Scoring

HSAG validates a total of 10 activities for each PIP. The PIPs are validated annually. The validation reflects activities that have been completed. A health plan (BHO) may take up to three years to

[1] **HEDIS®** refers to the Health Plan Employer Data and Information Set and is a registered trademark of the National Committee for Quality Assurance (NCQA).

complete all 10 activities. Each activity consists of elements necessary for the successful completion of a valid PIP. Evaluation elements are the key CMS protocol components for each activity that reflect the intent of what is being measured and evaluated. Some of the elements are critical elements and must be scored as *Met* to produce an accurate and reliable PIP. Given the importance of critical elements, any critical element that receives a *Not Met* score results in an overall PIP validation status of *Not Met*. If one or more critical elements are *Partially Met*, but none are *Not Met*, the PIP will be considered valid with low confidence. Revisions and resubmission of the PIP would be required.

Summary of Validation Findings

- For this review, 10 activities, with a total of 53 elements, were validated. Of this number:
  - 40 evaluation elements were *Met*.
  - 0 evaluation elements were *Partially Met.*
  - 0 evaluation elements were *Not Met*.
  - 13 evaluation elements were *Not Applicable (N/A).*
- The total number of critical elements that were evaluated equaled 11. Of this number:
  - 8 critical elements were *Met*.
  - 0 critical elements were *Partially Met*
  - 0 critical elements were *Not Met*.
  - 3 critical elements were *N/A.*

The final validation finding for **ABC**'s PIP showed an overall score of 100 percent, a critical element score of 100 percent, and a *Met* validation status.

Conclusions

For the FY 06–07 validation cycle, this study was reviewed through Activity X, Sustained Improvement Achieved. The study provided a baseline and three remeasurements to address quality of and access to care and services. The rates for both follow-up within 7 days and follow-up within 30 days showed increases from baseline to the third remeasurement. Overall, the improvement in follow-up within 7 days after a psychiatric hospitalization from 2003 to 2006 was 18.4 percent. The improvement in follow-up within 30 days after a psychiatric hospitalization from 2003 to 2006 was 31.3 percent. Both improvements were statistically significant. HSAG would recommend that this study be internally monitored and a new study topic be chosen for FY 07-08.

Requirements

There were no requirements for this validation cycle.

Recommendations

There were no recommendations for this validation cycle.

Comparison of Years 1 through 3

For Year 1, **ABC** used CY 2001 as the baseline, CY 2002 as the first remeasurement, and CY 2003 as the second remeasurement. **ABC** achieved improvement in 7- and 30-day follow-up rates after an inpatient discharge. For the Year 2 validation cycle, **ABC** used CY 2003 as the baseline, CY 2004 as the first remeasurement, CY 2005 as the second remeasurement, and CY 2006 as the third remeasurement. For the FY 05-06 validation cycle, only Activities I, Appropriate Study Topic, through VI, Accurate/Complete Data Collection, were validated because at the time of the submission, **ABC** determined that a potential error in the query to identify hospital discharges had occurred. The results of the error may have resulted in underreporting of discharges and follow-up for this study. **ABC** was required to submit an updated PIP, including reconciled data results, analysis, and interpretation for the three years outlined in the study. For the Year 3 submission (FY 06-07), **ABC** recalculated follow-up rates for CY 2003, CY 2004, and CY 2005 to allow for comparison of rates from baseline to the third remeasurement. **ABC** achieved sustained and statistically significant improvement in the rates of follow-up within 7- and 30-days after a psychiatric inpatient discharge.

Validating PIPs involves a review of the following 10 activities:

- Activity I. Appropriate Study Topic
- Activity II. Clearly Defined, Answerable Study Question
- Activity III. Clearly Defined Study Indicator(s)
- Activity IV. Use a Representative and Generalizable 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

All PIPs are scored as follows:

Met	(1) All critical elements were *Met*, **and** (2) 80 percent to 100 percent of all critical and non-critical elements were *Met*.
Partially Met	(1) All critical elements were *Met*, and 60 percent to 79 percent of all critical and non-critical elements were *Met*, **or** (2) One critical element or more was *Partially Met*.
Not Met	(1) All critical elements were *Met*, and <60 percent of all critical and non-critical elements were *Met*, **or** (2) One critical element or more was *Not Met*.
Not Applicable (N/A)	*N/A* elements (including critical elements if they were not assessed) were removed from all scoring.

For FY 06–07, the BHOs were provided an opportunity to resubmit additional information and/or documentation. The plans were required to take action for any evaluation element receiving a score of *Partially Met* or *Not Met*. The action could include resubmission of additional PIP documentation prior to final scoring. Future annual PIP submissions should include all information pertinent to the PIP study to achieve a *Met* status.

PIP Scores

For this PIP, HSAG reviewed Activities I through X. Table 2-1 and Table 2-2 show **ABC**'s scores based on HSAG's PIP evaluation of ***Improving Follow-Up After An Inpatient Stay***. Each activity has been reviewed and scored according to HSAG's validation methodology.

Table 2-1—FY 06-07 Performance Improvement Project Scores *for* Improving Follow-Up After An Inpatient Stay *for* Access Behavioral Care

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	Total Critical Elements Not Met	Total Critical Elements N/A
I. Appropriate Study Topic	6	6	0	0	0	1	1	0	0	0
II. Clearly Defined, Answerable Study Question	2	2	0	0	0	1	1	0	0	0
III. Clearly Defined Study Indicator(s)	7	6	0	0	1	3	3	0	0	0
IV. Use a Representative and Generalizable Study Population	3	3	0	0	0	2	2	0	0	0
V. Valid Sampling Techniques	6	0	0	0	6	1	0	0	0	1
VI. Accurate/Complete Data Collection	11	6	0	0	5	1	0	0	0	1
VII. Appropriate Improvement Strategies	4	4	0	0	0	No Critical Elements				
VIII. Sufficient Data Analysis and Interpretation	9	8	0	0	1	2	1	0	0	1
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**	**40**	**0**	**0**	**13**	**11**	**8**	**0**	**0**	**3**

Table 2-2—FY 06-07 Performance Improvement Project Overall Score *for* Improving Follow-Up After An Inpatient Stay *for* Access Behavioral Care

Percentage Score of Evaluation Elements Met*	**100%**
Percentage Score of Critical Elements Met**	**100%**
Validation Status***	***Met***

* The percentage score is calculated by dividing the total *Met* by the sum of the total *Met*, *Partially Met*, and *Not Met*.
** The percentage score of critical elements *Met* is calculated by dividing the total critical elements *Met* by the sum of the critical elements *Met*, *Partially Met*, and *Not Met*.
*** *Met* equals confidence/high confidence that the PIP was valid.
Partially Met equals low confidence that the PIP was valid.
Not Met equals reported PIP results that were not valid.

Validations and Findings Summary

This section summarizes the evaluation of the activities validated for the PIP. A description of the findings, strengths, requirements, and recommendations is outlined under each activity section. See Appendix B for a complete description of CMS rationale for each activity.

ABC's PIP evaluated the quality of and access to care and services. **ABC** used two study indicators to collect the data and assess the outcomes for this study. The study indicators measured ambulatory or intermediate follow-up after an inpatient stay within 7- and 30-days. **ABC** completed all 10 activities for this validation cycle.

Activity I. Appropriate Study Topic

Study Topic

ABC's ongoing PIP topic submitted for the FY 06–07 validation cycle was to improve follow-up within 7- and 30-days after a psychiatric inpatient stay for consumers who are 6 years of age and older.

Finding(s)

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

Strength(s)

The study topic assessed quality of and access to care and services provided by **ABC.** The topic was selected because **ABC** determined that follow-up with outpatient mental health care could have a significant affect on consumer symptom stabilization, functional status, satisfaction and, ultimately, quality of life. The goal was to improve the rates of follow-up treatment within 7- and 30-days after an inpatient stay for a mental illness. The study topic reflected high-volume and high-risk conditions and addressed a broad spectrum of care and services.

Requirement(s) (for Critical Elements)

There were no requirements identified for this activity during this review.

Recommendation(s) (for Noncritical Elements)

There were no recommendations identified for this activity during this review.

Activity II. Clearly Defined, Answerable Study Question

Study Question(s)

ABC's study question, as stated in its PIP Summary Form, was:

- "To what extent are **ABC** members receiving follow-up care within 7- and 30-days after discharge from an inpatient stay for a mental illness?"

Finding(s)

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

Strength(s)

The study question stated the problem in simple terms and set the focus of the study, which was to improve the quality of and access to obtaining follow-up care within 7- and 30-days. The goal of the study will impact quality of care and services provided to **ABC** consumers.

Requirement(s) (for Critical Elements)

There were no requirements identified for this activity during this review.

Recommendation(s) (for Noncritical Elements)

Per the CMS Protocol, the study question should be stated in the format, "Does doing X result in Y?"

Activity III. Clearly Defined Study Indicator(s)

Study Indicator(s)

As stated in its PIP Summary Form, **ABC** had two study indicators:

- "Ambulatory or intermediate follow-up after an inpatient stay within 7 days."
- "Ambulatory or intermediate follow-up after an inpatient stay within 30 days."

Finding(s)

Six of the seven evaluation elements for this activity were *Met*, including three critical elements. One evaluation element was *Not Applicable* because the study indicators were based on HEDIS 2005 Technical Specifications and were not developed internally.

Strength(s)

The study indicators were developed to answer the study question and measure change in the quality of and access to care and services received. The study indicators were based on the HEDIS 2005 Technical Specifications and were well-designed to address CMS' requirements to evaluate quality of and access to care and services.

Requirement(s) (for Critical Elements)

There were no requirements identified for this activity during this review.

Recommendation(s) (for Noncritical Elements)

There were no recommendations identified for this activity during this review.

Activity IV. Use a Representative and Generalizable Study Population

Study Population

ABC's study population was determined by using the HEDIS 2005 Technical Specifications. The study population consisted of consumers who were 6 years of age and older as of the date of discharge from an inpatient setting of an acute care facility. Consumers must have had a discharge date occurring on or before December 1 of the measurement year and a covered ICD-9 CM diagnosis code indicating a mental health disorder. The consumers must have been continuously enrolled 30 days after discharge with no gaps in enrollment. To be eligible for the study, the consumer must have also remained with **ABC** as a payer for the services delivered to the consumer within 30 days following the inpatient discharge.

Finding(s)

All three evaluation elements were *Met*, including two critical elements for this activity.

Strength(s)

The study population was completely and accurately defined per the HEDIS 2005 Technical Specifications and captured all eligible consumers to whom the study question applied.

Requirement(s) (for Critical Elements)

There were no requirements identified for this activity during this review.

Recommendation(s) (for Noncritical Elements)

There were no recommendations identified for this activity during this review.

Activity V. Valid Sampling Techniques

Sampling Technique(s)

ABC did not use sampling for this PIP study. The entire eligible population was used.

Finding(s)

All six evaluation elements for this activity were scored as *Not Applicable*, including one critical element, because the entire eligible population was used.

Strength(s)

Sampling techniques were not used for this PIP study. The use of the entire eligible population is in accordance with generally accepted principles of research design and statistical analysis.

Requirement(s) (for Critical Elements)

There were no requirements identified for this activity during this review.

Recommendation(s) (for Noncritical Elements)

There were no recommendations identified for this activity during this review.

Activity VI. Accurate/Complete Data Collection

Data Collection

The data collection process consisted of only administrative data sources. The process was appropriate for this study.

Finding(s)

Six of the 11 evaluation elements were *Met* for this activity. The remaining five evaluation elements received a *Not Applicable* score, including one critical element, as manual data collection was not used for this PIP study.

Strength(s)

The data collection techniques and processes used for this study were appropriate and well-implemented. **ABC** clearly defined the data elements collected and the sources for data collection. **ABC** provided a detailed timeline for data collection and a clear understanding of the systematic process used for data collection. The degree of administrative data completeness was estimated to be 100 percent for CY 2003, CY 2004, and CY 2005. The degree of administrative data completeness was estimated to be 98.99 percent for CY 2006.

Requirement(s) (for Critical Elements)

There were no requirements identified for this activity during this review.

Recommendation(s) (for Noncritical Elements)

There were no recommendations identified for this activity during this review.

Activity VII. Appropriate Improvement Strategies

Improvement Strategies

ABC used a focused intervention strategy to increase outpatient follow-up and potentially reduce hospital readmissions. For all remeasurements, the intervention strategy entailed conducting telephone outreach to consumers, their family members, or providers after a hospital discharge.

Finding(s)

All four of the evaluation elements were *Met* for this activity during this review. This activity does not have any critical elements.

Strength(s)

Outreach telephone calls to consumers, family members, or providers continued in CY 2006. The intervention strategy has been in place for more than three years and **ABC** believes that now providers routinely incorporate follow-up after a hospital discharge into the consumer care process. Additionally, **ABC** has engaged staff members in discussions aimed at identifying and addressing barriers encountered in arranging and coordinating aftercare appointments and, as a result, introduced protocols for management notification and involvement when obstacles are encountered.

Requirement(s) (for Critical Elements)

There were no critical elements for this activity.

Recommendation(s) (for Noncritical Elements)

There were no recommendations identified for this activity during this review.

Activity VIII. Sufficient Data Analysis and Interpretation

Data Analysis and Interpretation

ABC performed data analysis and interpretation for the baseline and three remeasurement periods.

Finding(s)

Eight of the nine evaluation elements were *Met* for this activity, including one critical element. One evaluation element was scored *Not Applicable* because sampling was not used for this study. This evaluation element was also a critical element.

Strength(s)

The data analysis was conducted according to the plan in the study. **ABC** completed statistical testing and provided *p* values for the differences between measurement periods. **ABC** presented the study results in a clear and easily understood format and included a detailed interpretation of the data for each measurement period.

Requirement(s) (for Critical Elements)

There were no requirements identified for this activity during this review.

Recommendation(s) (for Noncritical Elements)

There were no recommendations identified for this activity during this review.

Activity IX. Real Improvement Achieved

Real Improvement Achieved

ABC provided statistical evidence demonstrating that real improvement was achieved for this PIP study.

Finding(s)

All four of the evaluation elements for this activity were *Met*. There were no critical evaluation elements in this activity.

Strength(s)

ABC recalculated all calendar year measurements in May 2006, eliminating any year-to-year variation in methodology. There was documented improvement in outcomes of care, and the improvement appeared to be the result of the interventions.

Requirement(s) (for Critical Elements)

There were no critical elements for this activity.

Recommendation(s) (for Noncritical Elements)

There were no recommendations identified for this activity during this review.

Activity X. Sustained Improvement Achieved

Sustained Improvement Achieved

Repeated measurements over comparable time periods demonstrated sustained improvement.

Finding(s)

The one evaluation element for this activity received a *Met* score.

Strength(s)

ABC achieved sustained and statistically significant improvement in rates of follow-up within 7- and 30-days of a psychiatric inpatient discharge from 2003 through 2006. **ABC** plans to continue efforts to sustain progress in outcomes of care for its consumers through effective care coordination. HSAG would recommend that this study be internally monitored and a new study topic be chosen for FY 07-08.

Requirement(s) (for Critical Elements)

There were no critical elements for this activity

Recommendation(s) (for Noncritical Elements)

There were no recommendations identified for this activity during this review.

Section 4: Colorado FY 06-07 PIP Validation Tool: Improving Follow-Up After an Inpatient Stay for Access Behavioral Care

DEMOGRAPHIC INFORMATION			
Health Plan Name:	Access Behavioral Care		
Study Leader Name:	Robert W. Bremer, MA, LPC, PhD	Title:	Behavioral Health Quality Program Manager
Phone Number:	(720) 744-5240	E-mail Address:	robert.bremer@coaccess.com
Name of Project/Study:	Improving Follow-Up After an Inpatient Stay		
Type of Study:	Clinical		
Date of Study:	1/1/2005 to 12/31/2006		
Type of Delivery System:	BHO	Number of Medicaid Consumers in BHO:	8,121
		Number of Medicaid Consumers in Study:	740
Year 3 Validation	Initial Submission		

EVALUATION ELEMENTS		SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation			
I.	**Appropriate Study Topic: Topics selected for the 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 service. The goal of the project should be to improve processes and outcomes of health care. The topic may be specified by the State Medicaid agency or on the basis of Medicaid consumer input.**		
	1. Reflects high-volume or high-risk conditions (or was selected by the State). N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study topic reflected a high-volume and high-risk condition.
	2. Is selected following collection and analysis of data (or was selected by the State). N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study topic was selected following the collection and analysis of data.
	3. Addresses a broad spectrum of care and services (or was selected by the State). The scoring for this element will be Met or Not Met.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study topic addressed a broad spectrum of care and services.
	4. Includes all eligible populations that meet the study criteria. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	All eligible populations that met the study criteria were included.
	5. Does not exclude consumers with special health care needs. The scoring for this element will be Met or Not Met.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	Consumers with special health care needs were not excluded.
C*	6. Has the potential to affect consumer health, functional status, or satisfaction. The scoring for this element will be Met or Not Met.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study topic had the potential to affect consumer health, functional status, and satisfaction.

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS	SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation		

Results for Activity I				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
1	6	0	0	0

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS		SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation			
II.	**Clearly Defined, Answerable Study Question: Stating the study question(s) helps maintain the focus of the PIP and sets the framework for data collection, analysis, and interpretation.**		
	1. States the problem to be studied in simple terms. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study question stated the problem to be studied in simple terms. Point of clarification: Per CMS Protocol, the study question should be stated in the format, "Does doing X result in Y?"
C*	2. Is answerable. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study question was answerable. Point of clarification: Per CMS Protocol, the study question should be stated in the format, "Does doing X result in Y?"

Results for Activity II				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
1	2	0	0	0

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

	EVALUATION ELEMENTS	SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation			
III.	**Clearly Defined Study Indicator(s): A study indicator is a quantitative or qualitative characteristic or variable that reflects a discrete event (e.g., an older adult has not received a flu shot in the last 12 months) or a status (e.g., a consumer's blood pressure is or is not below a specified level) that is to be measured. The selected indicators should 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.**		
C*	1. Are well-defined, objective, and measurable. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study indicators were well-defined, objective, and measurable.
	2. Are based on current, evidence-based practice guidelines, pertinent peer review literature, or consensus expert panels.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study indicators were HEDIS measures.
C*	3. Allow for the study question to be answered. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study indicators allowed for the study question to be answered.
	4. Measure changes (outcomes) in health or functional status, consumer satisfaction, or valid process alternatives. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study indicators measured changes (outcomes) in consumer health and functional status.
C*	5. Have available data that can be collected on each indicator. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	There were available data collected for each indicator.
	6. Are nationally recognized measures such as HEDIS specifications, when appropriate. The scoring for this element will be Met or N/A.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study indicators were HEDIS 2005 Technical Specifications.
	7. Includes the basis on which the indicator(s) was adopted, if internally developed.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	The study indicators were not developed internally.

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS	SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation		

Results for Activity III				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
3	6	0	0	1

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS		SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation			
IV.	**Use a representative and generalizable study population: The selected topic should represent the entire eligible Medicaid enrollment population with systemwide measurement and improvement efforts to which the PIP study indicators apply.**		
C*	1. Is accurately and completely defined. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study population was accurately and completely defined per HEDIS 2005 Technical Specifications.
	2. Includes requirements for the length of a consumer's enrollment in the BHO.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	Requirements for length of enrollment were included.
C*	3. Captures all consumers to whom the study question applies. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	All consumers to whom the study question applied were captured.

Results for Activity IV				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
2	3	0	0	0

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

	EVALUATION ELEMENTS	SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation			
V.	**Valid Sampling Techniques: (This activity is only scored if sampling was used.) If sampling is to be used to select consumers 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 the first time a topic is studied.**		
	1. Consider and specify the true or estimated frequency of occurrence.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Sampling was not used.
	2. Identify the sample size.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Sampling was not used.
	3. Specify the confidence level.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Sampling was not used.
	4. Specify the acceptable margin of error.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Sampling was not used.
C*	5. Ensure a representative sample of the eligible population.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Sampling was not used.
	6. Are in accordance with generally accepted principles of research design and statistical analysis.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Sampling was not used.

Results for Activity V				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
1	0	0	0	6

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS			SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation				
VI.	**Accurate/Complete Data Collection: 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.**			
	1.	Clearly defined data elements to be collected. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The data elements collected were identified.
	2.	Clearly identified sources of data. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The source of data was specified.
	3.	A clearly defined and systematic process for collecting data that includes how baseline and remeasurement data will be collected. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The process for collecting data was defined and systematic.
	4.	A timeline for the collection of baseline and remeasurement data. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	A timeline for the collection of data was provided.
	5.	Qualified staff and personnel to abstract manual data.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Manual data collection was not used.
C*	6.	A manual data collection tool that ensures consistent and accurate collection of data according to indicator specifications.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Manual data collection was not used.
	7.	A manual data collection tool that supports interrater reliability.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Manual data collection was not used.
	8.	Clear and concise written instructions for completing the manual data collection tool.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Manual data collection was not used.
	9.	An overview of the study in written instructions.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	Manual data collection was not used.
	10.	Administrative data collection algorithms/flow charts that show activities in the production of indicators.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	A narrative description of the administrative data collection process was provided.

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS		SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation			
VI.	**Accurate/Complete Data Collection: 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.**		
	11. An estimated degree of administrative data completeness. Met = 80 - 100% Partially Met = 50 - 79% Not Met = <50% or not provided	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The estimated degree of administrative data completeness was reported as 98.99 percent.

Results for Activity VI				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
1	6	0	0	5

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS		SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation			
VII.	**Appropriate Improvement Strategies: Real, sustained improvements in care result from a continuous cycle of measuring and analyzing performance, and developing and implementing systemwide improvements in care. Interventions are designed to change behavior at an institutional, practitioner, or consumer level.**		
	1. Related to causes/barriers identified through data analysis and quality improvement processes. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The interventions were related to causes/barriers identified through data analysis and quality improvement processes.
	2. System changes that are likely to induce permanent change.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The interventions were system changes that were likely to induce permanent change.
	3. Revised if the original interventions were not successful.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The interventions were evaluated and revised as necessary.
	4. Standardized and monitored if interventions were successful.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The interventions were standardized and monitored.

Results for Activity VII				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
0	4	0	0	0

** This number is a tally of the total number of critical evaluation elements for this review activity.

	EVALUATION ELEMENTS	SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation			
VIII.	**Sufficient Data Analysis and Interpretation: Describe the data analysis process on the selected clinical or nonclinical study indicators. Include the statistical analysis techniques used.**		
C*	1. Is conducted according to the data analysis plan in the study design. N/A is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	Data analysis was conducted according to the data analysis plan.
C*	2. Allows for the generalization of results to the study population if a sample was selected. If no sampling was performed, this element is scored N/A.	☐ Met ☐ Partially Met ☐ Not Met ☑ N/A	A sample was not selected.
	3. Identifies factors that threaten internal or external validity of findings.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	Factors that threatened the internal or external validity of the findings were discussed.
	4. Includes an interpretation of findings.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	An interpretation of findings was included.
	5. Is presented in a way that provides accurate, clear, and easily understood information.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The data were presented in an accurate and easily understood way.
	6. Identifies initial measurement and remeasurement of study indicators.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	Initial measurement and remeasurement of the study indicators were identified.
	7. Identifies statistical differences between initial measurement and remeasurement.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	Statistical differences between measurement periods were identified.
	8. Identifies factors that affect the ability to compare initial measurement with remeasurement.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	Factors that could have affected the ability to compare measurements were discussed.
	9. Includes interpretation of the extent to which the study was successful.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	An interpretation of the extent to which the study was successful was included.

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS	SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation		

Results for Activity VIII				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
2	8	0	0	1

* "C" in this column denotes a critical evaluation element.

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS		SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation			
IX.	**Real Improvement Achieved: Describe any meaningful change in performance observed and demonstrated during baseline measurement. Discuss any random year-to-year variation, population changes, and sampling error that may have occurred during the measurement process.**		
	1. Remeasurement methodology is the same as baseline methodology.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The study methodology was corrected and all calendar year measurements were re-calculated in May 2006, eliminating any year-to-year variation in methodology.
	2. There is documented improvement in processes or outcomes of care.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	There was documented improvement in outcomes of care.
	3. The improvement appears to be the result of planned intervention(s).	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	The improvement appeared to be the result of the interventions.
	4. There is statistical evidence that observed improvement is true improvement.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	There was statistical evidence that observed improvement was true improvement.

Results for Activity IX				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
0	4	0	0	0

** This number is a tally of the total number of critical evaluation elements for this review activity.

EVALUATION ELEMENTS	SCORING	COMMENTS
Performance Improvement Project/Health Care Study Evaluation		
X. **Sustained Improvement Achieved: 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.**		
1. Repeated measurements over comparable time periods demonstrate sustained improvement, or that a decline in improvement is not statistically significant.	☑ Met ☐ Partially Met ☐ Not Met ☐ N/A	ABC achieved sustained and statistically significant improvement in the rates of post- psychiatric hospitalization for follow-up within 7- and 30-days of inpatient discharge from 2003 through 2006. ABC plans to continue making efforts to refine intervention strategies and develop new interventions as needed in order to sustain progress toward improving the process and outcomes of care for its consumers.

Results for Activity X				
# of Elements				
Critical Elements**	**Met**	**Partially Met**	**Not Met**	**Not Applicable**
0	1	0	0	0

** This number is a tally of the total number of critical evaluation elements for this review activity.

Section 4: Colorado FY 06-07 PIP Validation Tool: Improving Follow-Up After an Inpatient Stay for Access Behavioral Care

Table A-1—FY 06-07 PIP Validation Report Scores: Improving Follow-Up After an Inpatient Stay for Access Behavioral Care											
	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**	**Total Critical Elements Not Met**	**Total Critical Elements N/A**
I.	Appropriate Study Topic	6	6	0	0	0	1	1	0	0	0
II.	Clearly Defined, Answerable Study Question	2	2	0	0	0	1	1	0	0	0
III.	Clearly Defined Study Indicator(s)	7	6	0	0	1	3	3	0	0	0
IV.	Use a representative and generalizable study population	3	3	0	0	0	2	2	0	0	0
V.	Valid Sampling Techniques	6	0	0	0	6	1	0	0	0	1
VI.	Accurate/Complete Data Collection	11	6	0	0	5	1	0	0	0	1
VII.	Appropriate Improvement Strategies	4	4	0	0	0	0	No Critical Elements			
VIII.	Sufficient Data Analysis and Interpretation	9	8	0	0	1	2	1	0	0	1
IX.	Real Improvement Achieved	4	4	0	0	0	0	No Critical Elements			
X.	Sustained Improvement Achieved	1	1	0	0	0	0	No Critical Elements			
Totals for All Activities		**53**	**40**	**0**	**0**	**13**	**11**	**8**	**0**	**0**	**3**

Table A-2—FY 06-07 PIP Validation Report Overall Scores: Improving Follow-Up After an Inpatient Stay for Access Behavioral Care	
Percentage Score of Evaluation Elements Met*	**100%**
Percentage Score of Critical Elements Met**	**100%**
Validation Status***	***Met***

* The percentage score is calculated by dividing the total Met by the sum of the total Met, Partially Met, and Not Met.

** The percentage score of critical elements Met is calculated by dividing the total critical elements Met by the sum of the critical elements Met, Partially Met, and Not Met.

*** Met equals confidence/high confidence that the PIP was valid.
Partially Met equals low confidence that the PIP was valid.
Not Met equals reported PIP results that were not credible.

EVALUATION OF THE OVERALL VALIDITY AND RELIABILITY OF PIP/STUDY RESULTS
HSAG assessed the implications of the study's findings on the likely validity and reliability of the results based on CMS protocols. HSAG also assessed whether the State should have confidence in the reported PIP findings. Determining when an accumulation of threats to validity and reliability, and PIP design problems, reach a point at which the PIP findings are no longer credible is always a judgment call.

***Met** = Confidence/high confidence in reported PIP results

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

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

Summary of Aggregate Validation Findings

*		**		***	
	X				
	Met		***Partially Met***		***Not Met***

Summary statement on the validation findings:

Activities I through X were assessed for this PIP Validation Report. Based on the validation of this PIP study, HSAG's assessment determined high confidence in the results.

Appendices

for Access Behavioral Care

Introduction

The appendices consist of documentation supporting the validation process conducted by HSAG using the CMS Protocol for validating PIPs. Appendix A is the study submitted to HSAG for review, Appendix B is CMS rationale for each activity, and Appendix C includes PIP definitions and explanations.

- Appendix A: **Access Behavioral Care**'s PIP Study: ***Improving Follow-Up After An Inpatient Stay***
- Appendix B: CMS Rationale by Activity
- Appendix C: Definitions and Explanations by Activity

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

DEMOGRAPHIC INFORMATION			
BHO Name and ID:	Access Behavioral Care		
Study Leader Name:	Robert W. Bremer, MA, LPC, PhD	Title:	Behavioral Health Quality Program Manager
Telephone Number:	720-744-5240	E-mail Address:	robert.bremer@coaccess.com
Name of Project/Study:	Improving Follow-Up After An Inpatient Stay		
Type of Study:	☒ Clinical ☐ Nonclinical		
Date of Study Period:	January 1, 2005 through December 31, 2006		

Number of Medicaid Consumers served by BHO: 8,121
(Total all ages FY06 based on paid claims)

Number of Medicaid Consumers in Project/Study:

Calendar Year 2006: 740

Calendar Year 2005: 625 ~~822~~

Calendar Year 2004: 511 ~~627~~

Calendar Year 2003: 567 ~~440~~

Section to be completed by HSAG

_____ Year 1 Validation _____ Initial Submission _____ Resubmission

_____ Year 2 Validation _____ Initial Submission _____ Resubmission

__X__ Year 3 Validation __X__ Initial Submission _____ Resubmission

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

A. Activity I: 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 nonclinical 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 consumer input.

Study Topic:

The purpose of the study is to improve the rates of member follow-up treatment within 7 and 30 days following an inpatient stay for a mental illness. While at times necessary to protect the health, safety, and well-being of a member, a psychiatric inpatient stay can be quite disruptive to any number of spheres in a member's life. Follow-up treatment facilitates successful reintegration to home and community for the consumer, and supports an ongoing recovery process. Timely follow-up with outpatient mental health care can have a potentially significant effect on member symptom stabilization, functional status, satisfaction, and ultimately, quality of life.

NCQA's 2003 State of Health Care Quality Report states that appropriate follow-up treatment of mental illness can reduce the duration of disability and the likelihood of recurrence and readmission, through early identification of symptoms and intervention. It also cites cost offset studies that show a decrease in total health care costs following mental health interventions, even when including the cost of the intervention (American Psychological Association: The Costs of Failing to Provide Appropriate Mental Health Care, 2003; R. Lechnyr: Cost savings and the effectiveness of mental health services, Journal of the Oregon Psychological Association, 1992). During CY 2003, hospital admissions accounted for approximately 14% of Access Behavioral Care utilization and approximately 34% of total medical costs.

Because of the high risk to both consumers and the health plan, Access Behavioral Care has attempted to improve the rate of follow-up visits post-hospitalization and thereby prevent acute exacerbations from recurring by improving continuity of care, and timely and appropriate coordination between systems of care, in the transition from inpatient to outpatient levels of treatment. Since inception, Access Behavioral Care has calculated NCQA's HEDIS measure of Follow-Up After Hospitalization for Mental Illness at 7 and 30 Days to monitor progress in this area annually. In 2002 this monitor was identified as a performance improvement measure to increase the percentage of members who receive follow-up care after an inpatient discharge. While incremental gains had been previously made in each annual measurement of HEDIS rates of follow-up within 7 and 30 days, it was felt that opportunities existed to further improve the outcomes of care through enhanced care coordination processes that would facilitate successful movement of members from higher to lower levels of care.

New initiatives were undertaken in calendar year 2003 to help ensure timely follow-up and facilitate member follow-through with outpatient services. It was anticipated that these activities would increase the rates of follow-up care obtained by Access Behavioral Care members and in doing so support psychiatric stability. Results of these initiatives were previously reported to the Colorado Department of Health Care Financing and Policy and its contracted EQRO, Health Services Advisory Group, in 2004. The previously submitted report utilized calendar year 2001 data for baseline measurement, and calendar year 2002 data (pre-intervention) and calendar year 2003 data (post-intervention) for remeasurement. Since then, remeasurements have been conducted for calendar years 2004, **2005, and 2006**. Because the obtained HEDIS rates of follow-up within 7 and 30 days for calendar years 2003 through 2005 were lower than anticipated given the targeted intervention strategy implemented, as

A. Activity I: 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 nonclinical 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 consumer input.

well as inconsistent with previously obtained rates, exploration of possible contributing factors was conducted.

~~Following the analysis for calendar year 2003, a number of issues were identified. One was the documented difficulty in obtaining 7-day access to routine care in the first two quarters of calendar year 2003, as evidenced by appointment monitoring studies, which in part may have accounted for lower 2003 HEDIS follow-up rates within 7 days. However, additional challenges during this period were believed to have adversely impacted the findings as well. System conversions implemented to comply with HIPAA requirements both at Colorado Access and Access Behavioral Care's primary providers, including the Mental Health Center of Denver, led to code set and file format changes that limited data completeness at the time of analysis, due to substantial complications in generating and accepting encounters and claims. An ad hoc analysis of a sample of claims and authorization records uncovered a number of cases in which there was documentation in the authorization record of follow-up but no matching claim. Additionally, claims were found for 7-day follow-up encounters that did not conform to HEDIS-specified CPT or UB-92 revenue codes and therefore were not included in the calculations. Thus, to some extent, 7-day follow-up appeared to be underreported.~~

~~Initial analyses of calendar years 2004 and 2005 data produced similarly weak results and prompted reexamination of the data and methodology. While continuing impacts of system and code set conversion were believed to have had a negative effect on calendar year 2004 results, it was during analysis of calendar year 2005 data that a flaw in the methodology was uncovered. The query for determining the total number of inpatient discharges had included claims that were not in fact psychiatric hospital discharges, inflating the denominator and consequently lowering the rates of follow-up. Lack of continuity in decision support software tools and methodology over the years contributed to this error. Because of this finding and the conclusion that previously reported rates would not be comparable due to systems and other changes, a decision was made to recalculate follow-up rates starting with calendar year 2003, the year that the intervention was implemented. Therefore, reanalysis used calendar year 2003 as the baseline, and calendar years 2004 and 2005 as remeasurement periods to evaluate the effectiveness of the interventions.~~

~~Shortly prior to submission of the report for the calendar year 2005 remeasurement, it was observed that the denominator of inpatient discharges appeared to be very low relative to other available data. Further inquiry determined that the code set that had been utilized to identify psychiatric hospitalizations excluded nine of the twelve UB-92 revenue codes for inpatient services. This was brought to the attention of the Colorado Department of Health Care Financing and Policy and Health Services Advisory Group at the time of submission of the report containing the findings on what turned out to be a partial data set. A plan was formulated to re-run the data query using the correct codes for each calendar year under study, conduct a reanalysis of follow-up encounters, and submit an amended report of the results. The current report reflects those changes in methodology and the outcomes for calendar years 2003 through 2005.~~

Follow-up rates calculated for calendar year 2006 resulted in much lower rates than previously reported. The dramatic change in rates from 2005 to 2006 prompted a recalculation of the 2003-2005 rates. Efforts to reproduce rate reported from 2003-2005 were unsuccessful. The May 2006 revised report noted several deviations from the published HEDIS criteria. During our attempts to

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

A. Activity I: 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 nonclinical 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 consumer input.

reproduce previously reported rates, we realized that these deviations from HEDIS methodology were not sufficiently documented, and we were unable to reproduce the previous years' results. Comparing rates calculated for 2006 to 2003-2005 is not valid.

Since the primary goals is to be confident in our ability to compare rates from year to year to detect sustained improvement, we recalculated follow-up rates for this new report and for all previous years. This approach will allow us to focus on true changes in rates from baseline (2003) through remeasurement 23 (2006).

It should be noted that although we have followed all HEDIS 2005 methodology (Attachment 1), the rates reported are based on the development of internal source code and is not certified by NCQA or a certified HEDIS audit firm. Producing certified HEDIS measures was not how we initially proposed to conduct the analyses for this project. The process to obtain certification of HEDIS measures requires considerable staff effort and expense. The focus of this project is to compare the change in rates from one year to the next, not to produce certified HEDIS follow-up rates for NCQA accreditation.

Given that we've strictly applied the HEDIS criteria, meeting the 90th percentile for seven and thirty day follow-up rates is an unrealistic goal. Strict HEDIS criteria may include members in the denominator and exclude members from the numerator, resulting in rates that are lower than the true rate. However, the reproducibility of previous reports became problematic when efforts were made to adjust the rates produced adhering to HEDIS methodology. It therefore seemed reasonable to adjust our benchmark and focus on our ability to make improvements year over year.

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

B. Activity II: The Study Question. Stating the question(s) helps maintain the focus of the PIP and sets the framework for data collection, analysis, and interpretation.
To what extent are Access Behavioral Care members receiving follow-up care within 7 and 30 days after discharge from an inpatient stay for a mental illness?

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

C. Activity III: 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:	Ambulatory or Intermediate Follow-Up After An Inpatient Stay Within 7 Days		
Numerator:	Number of ambulatory or intermediate encounters with a mental health practitioner up to 7 days after a psychiatric hospital discharge of an eligible member		
Denominator:	Number of hospital discharges on or before December 1st of the calendar year for all eligible members 6 years or older as of the date of discharge		
First Measurement Period Dates:	Discharge from January 1 through December 1 with date of service through December 31 of the measurement CY		
Benchmark and Source:	**Measurement Year:**	**Benchmark:**	**Source of Benchmark:**
	CY 2006	~~90th percentile: 62.5%~~ **50th percentile: 38.4%***	National Medicaid HEDIS 2005*
	CY 2005	~~90th percentile: 62.5%~~ **50th percentile: 38.4%**	National Medicaid HEDIS 2005
	CY 2004	~~90th percentile: 60.0%~~ **50th percentile: 40.3%**	National Medicaid HEDIS 2004
	CY 2003	~~90th percentile: 59.8%~~ **50th percentile: 38.7%**	National Medicaid HEDIS 2003
Baseline Goal:	HEDIS **50th** ~~90th~~ percentile for the measurement calendar year		

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

C. Activity III: 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 #2:	Ambulatory or Intermediate Follow-Up After An Inpatient Stay Within 30 Days
Numerator:	Number of ambulatory or intermediate encounters with a mental health practitioner up to 30 days after a psychiatric hospital discharge of an eligible member

* To obtain the HEDIS benchmarks for 2006 requires the purchase of the NCQA Quality Compass product, which we do not intend to purchase this year. 2005 benchmarks will be used for 2006.

Denominator:	Number of hospital discharges on or before December 1st of the calendar for all eligible members 6 years or older		
First Measurement Period Dates:	Discharge from January 1 through December 1 with date of service through December 31 of the measurement CY		
Benchmark and Source:	**Measurement Year:**	**Benchmark:**	**Source of Benchmark:**
	CY 2006	~~90th percentile: 81.3%~~ **50th percentile: 54.8%**	National Medicaid HEDIS 2005*
	CY 2005	~~90th percentile: 81.3%~~ **50th percentile: 54.8%**	National Medicaid HEDIS 2005
	CY 2004	~~90th percentile: 74.6%~~ **50th percentile: 59.9%**	National Medicaid HEDIS 2004
	CY 2003	~~90th percentile: 72.3%~~ **50th percentile: 59.0%**	National Medicaid HEDIS 2003
Baseline Goal:	HEDIS **50th** ~~90th~~-percentile for the measurement calendar year		

* To obtain the HEDIS benchmarks for 2006 requires the purchase of the NCQA Quality Compass product, which we do not intend to purchase this year. 2005 benchmarks will be used for 2006.

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

D. Activity IV: 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 consumer 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:

To calculate this measure, the identified study population consists of the denominator per HEDIS specifications. Per HEDIS specifications for 2005 (Attachment 1), the study population consists of the number of psychiatric inpatient discharges of Access Behavioral Care members who were 6 years of age and older as of the date of discharge from an inpatient setting of an acute care facility, with a discharge date occurring on or before December 1 of the measurement year and a covered ICD-9-CM diagnosis code indicating a mental health disorder (**Table FUH-A of Attachment 1**). Members must have been continuously enrolled through 30 days after discharge and have no gaps in enrollment. **Discharges from non-acute care facilities (e.g., residential or rehabilitation stays) were not included.**

If a discharge for a selected mental health disorder is followed by a readmission or by a direct transfer to an acute facility for any mental health principal diagnosis within the 30-day follow-up period, only the readmission discharge or the discharge from the facility to which the member was transferred was counted.

A member with more than one discharge on or before December 1 of the measurement year with a principal diagnosis (Table E16-A of Attachment 1) of one of the selected mental health disorders may be counted more than once in the eligible population.

Denied claims are not excluded from the measure.

To be an eligible member of the study population, Access Behavioral Care must have remained the payer for the services delivered to the member within 30 days following the inpatient discharge. Therefore, inpatient discharges of Goebel members were excluded due to benefit limitations on ambulatory and intermediate services. In addition, members who became the financial responsibility of another agency after the inpatient discharge, for whom Access Behavioral Care would not have received claims for services rendered after discharge, were also excluded.

Of those eligible, the entire population was included in the study and no sampling was conducted.

To maintain consistency of data and simplify the methodology, follow-up rates recalculated for 2003-2005 were also performed using 2005 HEDIS criteria (Attachment 1).

Any ambulatory or intermediate care follow-up visit with a mental health practitioner coded according to Table E16-B in Attachment 1 within 7 days and 30 days of a qualifying discharge were included in the numerator. Outpatient visit occurring on the date of discharge were included. Only CPT codes and UB-92 Revenue Codes listed in Table E16-B of Attachment 1 were used to obtain follow-up encounters. "Local" codes in use prior to mid-2004 were not applied. Details of the study population identification are outlined in Attachment 2.

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

E. Activity V: Sampling Methods. If sampling is to be used to select consumers 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 (*describe*)	Sampling Method (*describe*)
Not applicable – total eligible population used					

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

F. Activity VIa: 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

_____

_____

[X] Administrative data
- Data Source
  - [X] Programmed pull from claims/encounters (Attachment 2)
  - [ ] Complaint/appeal
  - [ ] Pharmacy data
  - [ ] Telephone service data /call center data
  - [ ] Appointment/access data
  - [ ] Delegated entity/vendor data _____
  - [X] Other _Eligibility data_____
- Other Requirements
  - [X] Data completeness assessment attached (Attachment 3)
  - [X] Coding verification process attached (Attachment 2)

[ ] 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 _____

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

F. Activity VIb: 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):

F. Activity VIc. Data Analysis Plan and Other Pertinent Methodological Features

Deviations from HEDIS methodology reported in previous measurements were not applied.

~~The current data analysis plan incorporates modifications of the original data analysis plan, based on ad hoc analyses subsequent to the 2004 report submission and recently discovered errors in data query methodology. Systems changes, coding changes, and methodologies that were identified as negatively impacting results necessitated the elimination of calendar years 2001 and 2002 as baseline and remeasurement periods, as prior results for these years are not comparable to current measurements and equivalent data cannot be reproduced. Also, data for the three years under study, calendar years 2003 through 2005, was reanalyzed following implementation of methodological changes determined to be necessary to provide a consistent methodology over the three years and for accurate measurement and analysis.~~

~~Specifically, the code sets that were utilized to identify psychiatric inpatient services had been limited to UB-92 revenue codes 9xx, which included some services that were not hospital admissions and excluded the nine UB-92 revenue codes 1xx for hospital-based services. The error was detected upon review of the detail data that indicated that the State hospitals were not represented in the data set of admissions. Additional queries uncovered other psychiatric hospital admissions that had also been omitted and led to re-examination of the system queries. Once the full and correct code sets were identified, data was re-pulled for all three calendar years and reanalyzed in accordance with the steps described below.~~

As noted above, calendar year 2003 serves as baseline, with calendar years 2004, 2005, **and 2006** serving as remeasurement periods. ~~Data analysis was conducted in May.~~ At the time of this report, claims data completeness was estimated to be 100% for calendar year 2003, ~~99.9~~ **100**% for calendar year 2004, 97.2 **100**% for calendar year 2005**, and 98.99% for calendar year 2006** (Attachment 3).

Claims and encounter data from PowerSTEPP, the Colorado Access transaction system, is downloaded daily into Business Objects, a data analysis software program and decision support tool used by Colorado Access, from which it is extracted using administrative methodology. Claims for denied inpatient stays were excluded. Claims for follow-up care included paid and denied claims. Quantitative data was collected on the total population of discharges within the calendar year measurement period for the denominator, excluding those discharges involving transfer of payer responsibility.

Follow-up encounters for the numerator were identified from CPT codes, and UB-92 revenue codes, ~~"local" codes specific to Colorado in use prior to mid-2004, and relevant HCPCS for ambulatory and intermediate services~~ (Attachment 2). Each inpatient discharge that met the criteria listed above was matched with the ambulatory or intermediate encounter with date of service closest to the date of inpatient discharge. The number of days from the date inpatient discharge to the date of service for an ambulatory or intermediate encounter was then calculated. For each calendar year measurement period, the total number and percentage of encounters within 7 days and 30 days, and the number and percentage of discharges for which there was follow-up beyond 30 days or no follow-up, was determined.

Analyses by ethnicity and aid categories that had been conducted for years 2003-2004 ~~previously~~ were eliminated since available ethnicity data was too limited to be meaningful, and neither had any significant impact on implementation or review of the intervention strategy.

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

G. Activity VII. 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 consumer level.

Describe interventions.

Baseline

For the calendar year 2003 measurement period, Access Behavioral Care initiated a performance improvement project to achieve further gains in consumer follow-up with outpatient care after an inpatient discharge.

Access Behavioral Care's care coordination process was enhanced with the implementation in February 2003 of a directed intervention strategy to increase outpatient follow-up and potentially reduce hospital readmissions. The strategy entailed conducting telephone outreach to consumers, their family members or providers within 10 days after a hospital discharge. Clinical staff identified each discharge and disposition for ambulatory or intermediate services, and collected the necessary contact information. The case was then assigned to consumer and family advocacy staff, called Resource Coordinators, to make telephone calls to remind consumers or family members of their scheduled appointments and address any obstacles to the consumer's follow-up. In the course of conducting outreach, issues such as failed appointments, transportation, child care or other barriers were identified and resolved as they were discovered. Information and assistance was given to consumers or their family members as needed to facilitate linkage and ensure timely follow-up care. When appointments were missed, direct contacts with outpatient providers often resulted in case management outreach by the provider to engage the consumer or family in follow-up.

The initiative included dialogue with hospital providers on the importance of scheduling follow-up appointments for consumers prior to discharge, and reinforcement of aftercare coordination efforts between Access Behavioral Care clinical Service Coordinators and hospital liaisons. Protocols were implemented at the BHO level that included instructions for Service Coordinators to secure timely outpatient appointments in the process of arranging post-hospitalization services. As a result of ongoing education and collaboration, the percentage of discharges with scheduled follow-up appointments increased over the course of the year.

The established goal for the outreach intervention was 90% successful telephone follow-up within 10 days of hospital discharge. Access Behavioral Care surpassed the 2003 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 within 10 days of hospital discharge 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. Anecdotally, Access Behavioral Care received feedback from consumers and family members that they appreciated the calls and assistance. These results were routinely reported to the BHO Quality Improvement and Program Evaluation Committee for review.

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G. Activity VII. 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 consumer level.

Remeasurement 1

With the apparent successes of the intervention in calendar year 2003 in linking consumers with needed follow-up care and increasing the percentage of discharges with follow-up appointments, Access Behavioral Care's management team made a decision to continue the activity of conducting outreach telephone calls. However, due to heightened and atypical competing situational demands on supervisory staff during calendar year 2004, it appears that this determination was not adequately or consistently conveyed to Service Coordinator and Resource Coordinator staff. As a result, routine reporting of outreach results uncovered a slight decline in staff performance during calendar year 2004. The percentage of outreach calls completed within 10 days of hospital discharge dropped to below 80% during the first quarter of the calendar year, and days from discharge to contact increased, although still within the allowable timeframe. The percentage of consumers who were discharged from an inpatient facility without a scheduled follow-up appointment also increased, from an average of 5% to an average of 16% for the year.

These results were shared with staff early in the second quarter of calendar year 2004, and retraining was conducted on the aims and protocols of the outreach activity to refocus Service Coordinator and Resource Coordinator efforts. Additionally, during these sessions, modifications were made to procedures for database documentation of planned follow-up to facilitate more complete data capture in cases involving walk-in intake clinics and home-based services, for which first appointment dates for follow-up are challenging to obtain. Positive effects of the retraining were seen in the remainder of calendar year 2004, where performance in successful completion of outreach calls improved to 80% or higher in seven of nine months, and the percentage of consumers who were discharged from an inpatient facility with a scheduled follow-up appointment increased in five of nine months. Year-end results indicated a total of 576 discharges and successful follow-up with 451, for a calendar year 2004 completion rate of 79% within 10 days of discharge. Average days post-discharge to contact for the year was 7.0 days, and average days post-discharge to scheduled follow-up was 3.9 days.

Reports of post-hospitalization outreach activity were routinely presented to the BHO Quality Improvement and Program Evaluation Committee for review. Committee discussion of trends observed in calendar year 2004 included an ongoing dialogue regarding the relationship between no-shows for post-hospitalization first appointments and readmission rates. Ad hoc analyses of calendar year 2003 data, conducted at committee recommendation and reported to the committee mid-2004, showed that over one-third of consumers with inpatient discharges in calendar year 2003 had at least one readmission at some point during that year. However, the no-show rate for the population was below 2%. Other factors such as substance abuse, developmental disability, or medical co-morbidities and treatment non-compliance appeared to be more significant contributors to readmission rate.

The BHO Quality Improvement and Program Evaluation Committee also approved a proposal to modify procedures for post-hospitalization follow-up outreach by Access Behavioral Care staff to target only those discharges with dispositions to ambulatory follow-up (outpatient, home-based, and day treatment services) to facilitate the transition to outpatient follow-up care. Given the intent of the project to help assure linkage to post-hospitalization care, a management review of the activity had determined that outreach calls when a discharge disposition resulted in a direct transfer to a bed-based facility (community-based acute treatment unit, residential facility, or nursing home) were not an efficient or effective use of resources, as these transfers were reliably completed.

G. Activity VII. 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 consumer level.

Remeasurement 2

The activity of conducting outreach telephone calls to consumers, family members, or providers was continued in calendar year 2005 with the modifications noted above. A Resource Coordinator position was added early in 2005, which in part was dedicated to conducting outreach calls. Additionally, clinical Service Coordinators were engaged in further discussions aimed at identifying and addressing difficulties they encountered in arranging and coordinating aftercare appointments. Protocols for management notification and involvement when obstacles were encountered were introduced, and established procedures for data capture were reinforced.

Performance was sustained at a high level January through August 2005, with a successful outreach completion rate of 85% and average days to contact at 6.0 days, for the eight months. However, internal departmental restructuring in the latter part of the year led to decreased efficiencies in communication and more limited availability for this project as staff responsible for discharge planning and follow-up outreach assumed additional responsibilities. Consequently, time to contact rose substantially to an average of 13.4 days, and percentage of outreach calls competed within 10 days of discharge declined to an average of 43%, for the period September through December 2005. For the full calendar year, with a total of 541 discharges during 2005, the average contact rate was 73% of calls completed within 10 days of discharge, and average days to contact was 8.0 days. The percentage of consumers discharged from an inpatient facility without a scheduled follow-up appointment decreased slightly, from an average of 16% to an average of 15% for calendar year 2005.

During this calendar year, the BHO Quality Improvement and Program Evaluation Committee continued to review reports of project activity and outcomes. Calendar year 2004 summary data was presented and discussed, with a focus on the percentage of cases without a documented scheduled appointment at discharge and related issues. Members of the committee representing hospital-based facilities acknowledged some difficulty in setting fixed appointments for certain outpatient programs but reported that all consumers were given follow-up instructions and contact information upon discharge. Committee representatives from Access Behavioral Care's core provider facilities requested and received case-level data pertaining to their organizations to determine if any patterns could be detected in the data, and to identify any potential actions that could be taken, which might increase the percentage of cases with a scheduled aftercare appointment and subsequent follow-up.

Although network capacity is generally adequate, members noted periodic access issues when demand and no-show rates were high, and during transition periods for residency programs, which might impact consumer follow-up with reduced availability during these periods. Members offered descriptions of organizational efforts to improve the flow and flexibility of access to services, and suggested additional meetings between Access Behavioral Care clinical managers and core provider clinical managers to continue the process of identifying and addressing any obstacles that might exist at the programmatic level. It was observed that access to services had been recently problematic particularly for adult consumers new to the system. Provider members of the committee reported that their organizations tried to prioritize appointments for consumers discharged from an inpatient stay but found that other providers at times made referrals for follow-up without coordinating care. Access Behavioral Care agreed to continue working with staff and providers to highlight expectations for obtaining follow-up appointments and coordinating care.

The committee approved an adjustment of the goal for HEDIS rates in the fiscal year 2006 Quality Assessment and Performance Improvement

G. Activity VII. 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 consumer level.

Work Plan from the ideal 90th percentile to the more realistic 50th percentile. While possible modifications to the project were discussed, the committee agreed to delay any decisions pending review of calendar year 2005 project outcomes and HEDIS follow-up rates. Given the low HEDIS rates for follow-up at 7 and 30 days in the initial analysis of calendar year 2004 data, in light of a history of increasing rates, it was recommended that Access Behavioral Care investigate methodological and other possible contributing factors that may have adversely affected the obtained rates.

The committee examined the initial results for calendar year 2005 and observed that the number of discharges appeared to be low, in relation to other reports. They were informed of the query error and the fact that the data would be re-run and reanalyzed, with updated results presented for their review.

Remeasurement 3

Outreach telephone calls to consumers, family members, or providers continued in calendar year 2006. Average days to post hospitalization telephone outreach average days post discharge to contact declined from 6.74 in FY05 to 11.03 in FY06. Despite this decline, the average days to appointment remained stable (FY05=4.61 days versus FY06=4.86 days). It is important to note that these rates are calculated based on the State fiscal year and therefore overlap HEDIS rates calculated based on the calendar year. The decline in the percentage of contacts is due to departmental and staffing reorganization, reprioritization, and shifts in staff responsibilities that may have impacted the availability of back-up when assigned staff was unavailable. The reduction however, did not appear to impact the percentage of patients who had a follow-up appointment post-discharge and the average days post discharge to an appointment which remained relatively stable. This is attributed in part to additional staff training and focused attention on working with hospital providers to obtain firm disposition plans. In addition, the intervention strategy has been in place for over three years. It is believed that providers as a matter of routine now incorporate post discharge follow-up into their process for care of the patient. Therefore, it appears to be a natural evolution to shift the focus of the intervention strategy from ABC behavioral health staff to the providers. The table below illustrates the post-hospitalization telephone follow-up rates.

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

G. Activity VII. 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 consumer level.

Post-Hospitalization Telephone Outreach Follow-Up			
	FY04	FY05	FY06
Number of Hospital Discharges Eligible for Follow-Up*	693	608	525
Number of Contacts Completed Within 10 Days	530	493	286
Percentage of Contacts Complete Within 10 Days	85%	81%	54%
Percentage of Cases With Appointment At Discharge	90%	84%	88%
Average Days Post Discharge to Contact	6.12	6.74	11.03
Average Days Post Discharge to Appointment	3.93	4.61	4.86

***Note: The total numbers of discharges is different from the total number of discharges reported using HEDIS criteria. Care managers were notified of a discharge via a paper form that was completed by the UM staff. In some instances, discharges were only recognized based on a claim. This was especially true in the cases involving retroactive eligibility. Due to these process issues, claims based discharges will always capture more discharges than we are capable of capturing in "real-time."**

H. Activity VIIIa. Data analysis: Describe the data analysis process in accordance with the analysis plan and any adhoc analysis done on the selected clinical or nonclinical study indicators. Include the statistical analysis techniques utilized and *p* values.

Note: Results presented in previous years have changed based on the new calculation conducted for this report. Therefore, much of data reported in this section has changed.

Baseline Measurement (2003)

For the baseline year of measurement, rates of follow-up after an inpatient discharge for calendar year 2003 were ~~48.7~~ **14.1**% within 7 days and ~~66.5~~ **26.1**% within 30 days. ~~As noted in the data analysis plan, the measure was recalculated in May 2006 for calendar year 2003, using administrative methodology.~~ There were a total of ~~567~~ **440** discharges which met the criteria, of which ~~276~~ **62** had a documented follow-up within 7 days and ~~377~~ **115** had a documented follow-up within 30 days.

Adults ages 12-17 and 22-59 accounted for the greatest number of inpatient discharges during this measurement period. However, the highest rates of follow-up were obtained by children ages 6-11 (~~59.5~~ **23.7**% within 7 days, and ~~84.5~~ **39.0**% within 30 days). **Follow-up rates for adults 60 and over were noticeably lower at 6.7% within 7 days and 6.7% within 30 days (although this rate considered only 1 member).** (Attachment 4).

Remeasurement 1 (2004)

For the first remeasurement, rates of follow-up after an inpatient discharge for calendar year 2004 improved to ~~49.5~~ **21.7**% within 7 days and ~~70.1~~ **42.3**% within 30 days. ~~This measure was also recalculated in May 2006, using administrative methodology.~~ For calendar year 2004, there were a total of **627** ~~511~~ discharges obtained which met the criteria, of which **136** ~~253~~ had a documented follow-up within 7 days and **265** ~~358~~ had a documented follow-up within 30 days. **This represents a 7-day follow-up improvement of 6% (p=0.005), and a 30-day follow-up improvement of 16.2% (p<0.001) over last year.**

Ages 12-17 accounted for the greatest number of inpatient discharges during this measurement period, and children ages 6-11 had the highest rates of follow-up within both 7 and 30 days for calendar year 2004, **much improved over the** previous calendar year. Rates of follow-up within 7 and 30 days increased substantially **across all age groups**. Older adults ages 60 and over showed a smaller improvement **but the sample in this age category increased from only 1 to 2 members.**

~~Rates of follow-up within 30 days increased to varying degrees in four of five age bands. Rates improved from 84.5% in 2003 to 91.6% in 2004 for children ages 6-11, from 71.1% in 2003 to 76.8% in 2004 for adolescents ages 12-17, from 37.1% in 2003 to 47.5% in 2004 for young adults ages 18-21, and from 52.2% in 2003 to 83.3% in 2004 for older adults ages 60 and over. Rates of follow-up within 30 days declined for adults ages 22-59, from 63.2% in 2003 to 58.0% in 2004 (Attachment 6).~~

~~Statistical testing at the 95% confidence interval indicated that the differences between follow-up rates within 7 and 30 days obtained for calendar years 2003 and 2004 were not statistically significant (7-day follow-up rate: p=0.790; 30-day follow-up rate: p=0.139), nor were comparisons by age band~~.

H. Activity VIIIa. Data analysis: Describe the data analysis process in accordance with the analysis plan and any adhoc analysis done on the selected clinical or nonclinical study indicators. Include the statistical analysis techniques utilized and *p* values.

Remeasurement 2 (2005)

For the second remeasurement, rates of follow-up after an inpatient discharge for calendar year 2005 improved to ~~54.5~~ **27.6**% within 7 days and ~~75.8~~ **51.9**% within 30 days. ~~The measure was calculated in May 2006, using administrative methodology.~~ For calendar year 2005, there were a total of **822** ~~625~~ discharges obtained which met the criteria, of which **227** ~~341~~ had a documented follow-up within 7 days and **427** ~~474~~ had a documented follow-up within 30 days. **This represents an improvement in 7-day follow-up of 5.9% (p=0.125), and 30-day follow-up improvement of 9.6% (p=0.0007) over last year, and an improvement of 13.5% at 7 days and 25.8% at 30 days from baseline.**

For this measurement period, adults ages 22-59 accounted for the greatest number of inpatient discharges **(49.6%), Follow-up rates across age categories were similar. However, the age 60 and over group follow-up remains lower than other age groups (21.4% at 7 days and 45.2% at days) even with more members in this year's sample.**

~~Calendar year rates of follow-up within 7 days increased in four of five age bands. Rates improved from 73.5% in 2004 to 81.7% in 2005 for children ages 6-11, from 37.5% in 2004 to 55.8% in 2005 for young adults ages 18-21, from 35.8% in 2004 to 45.7% in 2005 for adults ages 22-59, and from 50.0% in 2004 to 62.5% in 2005 for older adults ages 60 and over. Rates declined slightly for adolescents ages 12-17, from 55.9% in 2004 to 53.5% in 2005.~~

~~Rates of follow-up within 30 days increased from 91.6% in 2004 to 92.7% in 2005 for children ages 6-11, from 47.5% in 2004 to 63.5% in 2005 for young adults ages 18-21, and from 58.0% in 2004 to 71.7% in 2005 for adults ages 22-59. Rates remained the same from calendar year 2004 to 2005 for adolescents ages 12-17, at 76.8%, and declined slightly for older adults ages 60 and over, from 83.3% in 2004 to 81.3% in 2005. The overall rate of follow-up within 30 days for calendar year 2005 exceeds the Medicaid HEDIS 90th percentile (Attachment 6).~~

~~Statistical testing at the 95% confidence interval indicated that the differences between follow-up rates within 7 and 30 days obtained for calendar years 2004 and 2005 were not statistically significant (7-day follow-up rate: p=0.105; 30-day follow-up rate: p=0.446). However, statistical testing conducted to compare follow-up rates within 7 and 30 days between calendar years 2003 and 2005 indicated that the differences in obtained rates for follow-up within 30 days were statistically significant (7-day follow-up rate: p=0.839; 30-day follow-up rate: p=0.251).~~

~~Statistical testing for each age band comparing follow-up rates within 7 and 30 days between calendar years 2004 and 2005, and between calendar years 2003 and 2005, did not indicate any statistically significant differences in obtained rates by age band.~~

H. Activity VIIIa. Data analysis: Describe the data analysis process in accordance with the analysis plan and any adhoc analysis done on the selected clinical or nonclinical study indicators. Include the statistical analysis techniques utilized and *p* values.

Remeasurement 3 (2006)

Follow-up rates continue to improve. Follow-up after an inpatient discharge for calendar year 2006 improved to 32.4% within 7 days and 57.4% within 30 days. For calendar year 2006, there were a total of 740 discharges obtained which met the criteria, of which 240 had a documented follow-up within 7 days and 425 had a documented follow-up within 30 days. This represents a 7 day follow-up increase of 4.8% from last year (p=0.248), and a 5.5% increase from last year (p=0.139) for 30 day follow-up.

Overall, there was an 18.3% increase from baseline (p<0.001) for 7 day follow-up, and a 31.3% increase from baseline for 30 day follow-up (P<0.001).

Follow-up rates for all age groups are comparable except 7-day follow-up for the Age 60 and over age category. There are no any significant differences in follow-up post hospitalization by age.

H. Activity VIIIb. 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

The baseline follow-up rates of 14.1% at 7 days and 26.1% at 30 days fall well below our stated 50th percentile goal of 38.7% and 59.0% respectively. These rates illustrate the importance of tracking key quality indicators and initiating improvement strategies. Although the telephone outreach to members post discharge intervention began early in the baseline measurement period, it did not appear to have an impact on follow-up rates post psychiatric hospitalization. It is anticipated that efforts to improve follow-up rates will be realized in the following remeasurement periods.

~~The calendar year 2003 rate of 48.7 % for follow-up after an inpatient stay within 7 days did not meet the goal of the 2003 Medicaid HEDIS 90th percentile (59.8%), but did exceed the 2003 Medicaid HEDIS 75th percentile (45.9%). The calendar year 2003 rate of 66.5% for follow-up after an inpatient stay within 30 days likewise did not meet the goal of the 2003 HEDIS 90th percentile (72.3%), but exceeded the 2003 Medicaid HEDIS 75th percentile (64.0%). Although the 7-day and 30-day follow-up rates failed to meet the established goals, achievement of rates above the 75th percentile can be considered an excellent performance. With the correction in the data query described in previous sections of this report, and the resultant complete data set, these results are considered valid.~~

~~As the baseline period of measurement following implementation of a focused intervention strategy, these initial results suggested the preliminary success of the outreach intervention in helping consumers and families engage in follow-up care after an inpatient discharge. Corresponding efforts that included staff training in securing timely follow-up appointments in the process of arranging aftercare services, dialogue with hospital providers to increase the percentage of cases with clear follow-up instructions and appointments, and notification of outpatient providers of missed appointments resulting in outreach may also have had a positive impact. While Access Behavioral Care was encouraged by the results for follow-up within 7 and 30 days, the data suggested further opportunities for improvement in ensuring follow-up care. One such opportunity for improving rates of 7-day follow-up appeared to lie in improving access to routine care within 7 days, with which there were clear difficulties in the first two quarters of calendar year 2003, as documented in Access Behavioral Care's appointment monitoring studies.~~

Remeasurement 1

Follow-up rates from baseline to remeasurement 1 increased 7.6% and 16.2% for 7 and 30 day follow-up respectively. Although the 7-day rate of 21.7% and 30-daty rate of 42.3% still falls below our readjusted benchmark of the 50th percentile, the gain from the previous year is substantial.

Despite the temporary waning of staff performance in conducting timely outreach calls in the first quarter of calendar year 2004, improvements in both 7-day and 30-day follow-up rates attest to the broad benefit of the activity to consumers. Retraining of staff and the subsequent positive response, refinement of intervention and documentation procedures, and continuing work with hospital and outpatient providers to facilitate timely

H. Activity VIIIb. 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.

follow-up appointments and engagement of consumers in aftercare services all appear to have been successful in improving continuity of care and helping consumers and families follow through with aftercare appointments. Additionally, the percentage of cases obtaining access to routine care within 7 days was improved from below 70% in the first two quarters of calendar year 2003, to above 80% in calendar year 2004, through a variety of intervention, education, and training strategies with network providers.

~~The calendar year 2004 rate of 49.5% for follow-up after an inpatient stay within 7 days did not meet the goal of the 2004 Medicaid HEDIS 90th percentile (60.0%) but did exceed the 2004 Medicaid HEDIS 75th percentile (45.2%) and improved from the calendar year 2003 rate for follow-up after an inpatient stay within 7 days. The calendar year 2004 rate of 70.1% for follow-up after an inpatient stay within 30 days also did not meet the goal of the 2004 Medicaid HEDIS 90th percentile (74.6%), but exceeded the 2004 Medicaid HEDIS 75th percentile (68.3%) and improved from the calendar year 2003 rate for follow-up after an inpatient stay within 30 days. These results are gratifying although the differences in rates between 2003 and 2004 were not statistically significant. With the correction in the data query described in previous sections of this report, and the resultant complete data set, these results are considered valid.~~

~~Interventions seemed to be particularly effective for children ages 6-11, as seen in markedly improved rates of outpatient follow-up within 7 and 30 days compared to calendar year 2003, and to a lesser extent, improved rates for young adults ages 18-21. Readmission data for calendar years 2003 and 2004 indicates that readmission rates within 7 days for children ages 6-11 decreased from 4.8% in 2003 to 3.7% in 2004. While a direct correlation between follow-up after an inpatient stay and hospital readmissions for individual consumers has not been established, the improvements both in follow-up after an inpatient stay and reduction in inpatient readmissions for this age band is a positive finding.~~

~~Increases in follow-up rates within 7 and 30 days were observed for all other age bands with the exception of adults ages 22-59, indicating an opportunity for improvement. The decline in 7-day follow-up for adolescents ages 12-17 was slight, and not considered significant. That the interventions did have positive impact for many consumers, although it did not produce the expected improvements for adults, led to a decision to continue the intervention strategy to achieve further gains.~~

Remeasurement 2

Follow-up rates continued to improve from remeasurement 1 to remeasurement 2. Rates improved 5.9% at 7 days and 9.6% from the previous measurement period and 13.5% at 7 days and 25.8% at 30 days from baseline. Rates are still below the 50th percentile goal by 11.6% for 7-day follow-up and 4.9% for 30-day follow-up.

With the intervention strategy enhanced to focus on discharges to ambulatory follow-up where the need was greatest, the increase in staffing dedicated to the project, and ongoing training and problem-solving with staff, the overall improvements in 7-day and 30-day follow-up rates were not unanticipated. Other factors during this measurement period, such as episodic access difficulties by various providers in calendar year 2005 reducing timely appointment availability, and a disruption in the implementation of the intervention toward the end of the year due to internal restructuring, do not appear to have significantly impacted results, but helped concentrate efforts at the BHO level. The continuing improvement in

H. Activity VIIIb. 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.

follow-up rates is a positive outcome and indicates that the interventions do provide benefit and help improve linkage to aftercare services. The activity of outreach telephone calls has been considered generally successful and is ongoing.

~~The calendar year 2005 rate of 54.6% for follow-up after an inpatient stay within 7 days did not meet the goal of the 2004 Medicaid HEDIS 90th percentile (60.0%), but did exceed the 2004 Medicaid HEDIS 75th percentile (45.2%) by a considerable margin and improved from the 7-day follow-up rate for calendar year 2004. The calendar year 2005 rate of 75.8% for follow-up after an inpatient stay within 30 days, however, did exceed the goal of the 2004 Medicaid HEDIS 90th percentile (74.6%) and improved by over five percentage points from the calendar year 2004 rate for follow-up after an inpatient stay within 30 days. Although the difference in rates between 2004 and 2005 was not statistically significant, the difference in 30-day follow-up rates between 2003 and 2005 was statistically significant, demonstrating the strength of the improvement over time. With the correction in the data query described in previous sections of this report, and the resultant complete data set, these results are considered valid.~~

~~The trends observed during this measurement period indicate increases in 7-day and 30-day follow-up rates from the prior calendar year for most age bands, most notably for adults ages 22-59 and young adults ages 18-21. While not statistically significant, these improvements suggest particular responsiveness to these populations. With a rise in admissions for young adults during this period, it is likely that efforts may have been directed toward managing available inpatient capacity, obtaining timely aftercare services, and arranging any needed transitional services to expedite shifts between higher and lower levels of care and facilitate independent functioning. Similarly, the high rates of 7-day and 30-day follow-up for children ages 6-11 may be related to focused attention to the high-risk members of this population through implementation during this measurement period of the AFFIRM Care Management program, which provides enhanced care coordination and added psychosocial supports for participating consumers and family members.~~

~~Access Behavioral Care will consider these findings and seek to identify further opportunities to improve 7-day follow-up rates through its Quality Assessment and Performance Improvement Program structure. Measurement of 7-day and 30-day rates of follow-up after an inpatient stay will continue on an annual basis.~~

Remeasurement 3

The improvement in follow-up rates was dramatic from baseline in 2003 through remeasurement 3 in 2006. It is also encouraging that after a dramatic gain from baseline to remeasurement 1 (2003-2004), improvements continued over the next two years. Annual improvement continued through remeasurement 3. Follow-up rates at 7-days improved by 4.8% and 30-day rates improved by 5.5%. As described elsewhere in this report, we attribute much of the improvements reported to the efforts of our outpatient providers who improved their coordination with inpatient facilities and focused themselves on improving outpatient follow-up post hospitalization.

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

I. Activity IX. Study Results Summary and Improvement: List study results and describe any meaningful change in performance observed during the time period of analysis.[1]

#1 Quantifiable Measure: Ambulatory or Intermediate Follow-Up After An Inpatient Stay Within 7 Days

Time Period Measurement Covers	Baseline Project Indicator Measurement	Numerator	Denominator	Rate or Results	Industry Benchmark	Statistical Test and Significance*
CY 2003	**BASELINE**	**62** ~~276~~	**440** ~~567~~	**14.1%** ~~48.7%~~	**38.7%** ~~59.8%~~	N/A
CY 2004	**Remeasurement 1:**	**136** ~~253~~	**627** ~~511~~	**21.7%** ~~49.5%~~	**40.3%** ~~60.0%~~	**p=0.005***
CY 2005	**Remeasurement 2:**	**227** ~~341~~	**822** ~~625~~	**27.6%** ~~54.5%~~	**39.2%** ~~62.5%~~	**p=0.125**
CY 2006	**Remeasurement 3:**	**240**	**740**	**32.4%**	**39.2%**	**p=0.248**

#2 Quantifiable Measure: Ambulatory or Intermediate Follow-Up After An Inpatient Stay Within 30 Days

Time Period Measurement Covers	Baseline Project Indicator Measurement	Numerator	Denominator	Rate or Results	Industry Benchmark	Statistical Test and Significance*
CY 2003	**BASELINE**	**115** ~~377~~	**440** ~~567~~	**26.1%** ~~66.5%~~	**59.0%** ~~72.3%~~	N/A
CY 2004	**Remeasurement 1:**	**265** ~~358~~	**627** ~~511~~	**42.3%** ~~70.1~~%	**59.9%** ~~74.6%~~	**p<0.001***
CY 2005	**Remeasurement 2:**	**427** ~~474~~	**822** ~~625~~	**51.9%** ~~75.8%~~	**54.8%** ~~74.6%~~	**p=0.0007***
CY 2006	**Remeasurement 3:**	**425**	**740**	**57.4%**	**54.8%**	**p=0.139**

***Indicates a statistically significant difference. See Attachment 5 for details of analysis.**

Overall, the improvement in seven day post psychiatric hospitalization follow-up from 2003-2006 was 18.4%. This was statistically significant change (p<.0001). The improvement in thirty day post psychiatric hospitalization follow-up from 2003-2006 was also statistically significant at 31.3% (p<.0001).

[1] **Numerator and Denominators, and Rate or Results have been recalculated as described in Activity IV. Old rates have been lined through. Only the new rates for 2006 are presented since the previous method for calculating rates could not be duplicated accurately. Industry benchmarks were revised to reflect the goal of meeting HEDIS 50th percentile follow up -rate**

Appendix A: PIP Summary Form: Follow-Up After An Inpatient Stay *for* Access Behavioral Care

J. Activity X. 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 has achieved **sustained and statistically significant** improvements in rates of post psychiatric hospitalization follow-up within 7 and 30 days after an inpatient discharge **since 2003 through 2006. In addition to improvements gained from one year to the next, overall improvement from baseline through remeasurement 3 is dramatic.** ~~and exceeded the HEDIS 90th percentile in 30-day follow-up in calendar year 2005. The increase in 30-day follow-up rates from the baseline year of calendar 2003 to the second remeasurement for calendar year 2005, from 66.5% to 75.8%, was statistically significant. This attests to the positive impact of the interventions that were implemented and the benefits to members in terms of effective care coordination and linkage to services that lead to better outcomes of care.~~ **Although follow-up rates are lower than reported in previous years due to changes in the manner in which discharges and follow-up visits were calculated, the improvements achieved in follow-rates from a baseline (2003) low of 14.1% and 26.1% for 7 and 30 day follow-up respectively to a remeasurement 3 (2006) high of 32.4% and 57.4% for 7 and 30 day follow-up respectively demonstrates that our efforts have achieve sustainable results.**

There was no known random year-to-year variation in the population that might have affected results. Although Access Behavioral Care's population grew by approximately 10% from calendar year 2003 to calendar year 2005, this growth does not appear to have had any significant impact on admission statistics which might have affected numerators and denominators over time. Also, as noted in previous sections of this report, the study methodology was corrected and all calendar year measurements were re-calculated in May 2006, eliminating any year-to-year variation in methodology.

Attempts in previous years to accurately identify eligible discharges and represent the true follow-up of Access Behavioral Care members highlights problems in the manner in which HEDIS requires the measure to be calculated. Generally, the method by which the sample is obtained using HEDIS criteria is very restrictive, leading to the exclusion of many members who may have otherwise been legitimate members to include in the numerator or exclude from the denominator. Nonetheless, it is important to faithfully report HEDIS criteria as specified for comparability.

We are confident that the data we have presented in this report demonstrates a sustained improvement in hospitalization follow-up rates since 2003. The trends are consistent and positive. Improvements were sustained and exceeded incrementally in each year relative to the prior year, across both measures. Access Behavioral Care is proud of these results and anticipates a continuing trend in this direction. We will continue to make efforts to refine intervention strategies and develop new strategies as needed, in order to sustain progress toward improving the process and the outcomes of care for its consumers through effective care coordination. 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 to discharge and aftercare for individual members, assessing for the most appropriate ongoing community-based care given the member's needs, and facilitating the necessary linkage to follow-up services and resources.

PIPs provide a structured method of assessing and improving the processes, and thereby outcomes, of care for the population that a BHO serves. This structure facilitates the documentation and evaluation of improvements in care or service. PIPs are conducted by the BHOs to assess and improve the quality of clinical and nonclinical health care services received by consumers.

The PIP evaluation is based on CMS guidelines as outlined in the CMS publication, *Validating Performance Improvement Projects, A Protocol for Use in Conducting Medicaid External Quality Review Activities*, Final Protocol, Version 1.0, May 1, 2002 (CMS PIP Protocol).

This document highlights the rationale for each activity as established by CMS. The protocols for conducting PIPs can be used to assist the BHOs in complying with requirements.

CMS Rationale

Activity I. Appropriate Study Topic

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

Activity II. Clearly Defined, Answerable Study Question

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).

Activity III. Clearly Defined Study Indicator(s)

A study indicator is a quantitative or qualitative characteristic (variable) reflecting a discrete event (e.g., an older adult has/has not received an influenza vaccination in the last 12 months) or a status (e.g., a consumer's blood pressure is/is not below a specified level) 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 status, functional status, or consumer satisfaction, or valid proxies of these outcomes.

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

Activity IV. Use a Representative and Generalizable Study Population

Once a topic has been selected, measurement and improvement efforts must be systemwide (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). (See "Activity V. Valid Sampling Techniques.")

Activity V. Valid Sampling Techniques

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 disease 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).

Activity VI. Accurate/Complete Data Collection

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 and how and when the baseline and repeat indicator data will be collected.
- 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, several steps should be taken to ensure the data are consistently extracted and recorded:

1. The key to successful manual data collection is in the selection of the data collection staff. Appropriately qualified personnel, with conceptual and organizational skills, should be used to abstract the data. However, their specific skills should 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 judge whether clinical criteria were met, experienced clinical staff, such as registered nurses, should collect the data. However, if the abstraction involves verifying the presence of a diagnostic test report, trained medical assistants or medical records clerks may be used.
2. 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 are more clearly defined. Defining a glossary of terms for each project should be part of the training of abstractors to ensure consistent interpretation among project staff.
3. The number of data collection staff used for a given project affects the reliability of the data. A smaller number of staff members promotes interrater reliability, however, it may also increase the amount of time it takes to complete this task. Intrarater reliability (i.e., reproducibility of judgments by the same abstractor at a different time) should also be considered (CMS PIP Protocol, page 12).

Activity VII. Appropriate Improvement Strategies

Real, sustained improvements in care result from a continuous cycle of measuring and analyzing performance and developing and implementing systemwide 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 consumer 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 ensure the likelihood of causing measurable change.

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

Activity VIII. Sufficient Data Analysis and Interpretation

Review of the 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).

Activity IX. Real Improvement Achieved

When a BHO reports a change in its performance, it is important to know whether the reported change represents real change, is an artifact of a short-term event unrelated to the intervention, or is due to 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).

Activity X. Sustained Improvement Achieved

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).

Appendix C. Definitions and Explanations by Activity for Access Behavioral Care

This document was developed by HSAG as a resource to assist BHOs in understanding the broad concepts in each activity related to PIPs. The specific concept is delineated in the left column, and the explanations and examples are provided in the right column.

Definitions and Explanations	
Activity I. Appropriate Study Topic	
Broad Spectrum of Care	◆ Clinical focus areas: includes prevention and care of acute and chronic conditions and high volume/high-risk services. High-risk procedures may also be targeted (e.g., care received from specialized centers). ◆ Nonclinical areas: continuity or coordination of care addressed in a manner in which care is provided from multiple providers and across multiple episodes of care (e.g., disease-specific or condition-specific care).
Eligible Population	◆ May be defined as consumers who meet the study topic parameters.
Selected by the State	◆ If the study topic was selected by the state Medicaid agency, this information is included as part of the description under Activity One: Choose the Selected Study Topic in the PIP tool.
Activity II. Clearly Defined, Answerable Study Question	
Study Question	◆ The question(s) directs and maintains the focus of the PIP and sets the framework for data collection, analysis, and interpretation. The question(s) must be measurable and clearly defined. ◆ Examples: 1. Does outreach immunization education increase the rates of immunizations for children 0–2 years of age? 2. Does increasing flu immunizations for consumers with chronic asthma impact overall health status? 3. Will increased planning and attention to follow-up after inpatient discharge improve the rate of mental health follow-up services?

Definitions and Explanations	
Activity III. Clearly Defined Study Indicator(s)	
Study Indicator	◆ A quantitative or qualitative characteristic reflecting a discrete event or status that is to be measured. Indicators are used to track performance and improvement over time. ◆ Example: The percentage of enrolled consumers who were 12–21 years of age who had at least one comprehensive well-care visit with a primary care practitioner or an obstetrician-gynecologist during the measurement year.
Sources Identified	◆ Documentation/background information that supports the rationale for the study topic, study question, and indicators. ◆ Examples: HEDIS measures, medical community practice guidelines, evidence-based practices, or provider agreements. ◆ Practice guideline examples: American Academy of Pediatrics and American Diabetes Association.
Activity IV. Use a Representative and Generalizable Study Population	
Eligible Population	◆ Refers to consumers who are included in the study. ◆ Includes age, conditions, enrollment criteria, and measurement periods. ◆ Example: the eligible population includes all children ages 0–2 as of December 31 of the measurement period, with continuous enrollment and no more than one enrollment gap of 30 days or less.
Activity V. Valid Sampling Techniques	
True or Estimated Frequency of Occurrence	◆ This may not be known the first time a topic is studied. In this case, assume that a maximum sample size is needed to establish a statistically valid baseline for the study. HSAG will review whether the BHOs defined the impact the topic has on the population or the number of eligible consumers in the population.
Sample Size	◆ Indicates the size of the sample to be used.
Representative Sample	◆ Refers to the sample resembling the entire population.
Confidence Level	◆ Statistical confidence is a numerical statement of the probable degree of certainty or accuracy of an estimate (e.g., 95 percent level of confidence with a 5 percent margin of error).

Definitions and Explanations	
Activity VI. Accurate/Complete Data Collection	
Data Elements	◆ Identification of data elements includes unambiguous definitions of data that will be collected (e.g., the numerator/denominator, laboratory values).
Interrater Reliability (IRR)	◆ The HSAG review team evaluates if there is a tool, policy, and/or process in place to verify the accuracy of the data abstracted. Is there an over-read (IRR) process of a minimum-percentage review? ◆ Examples: a policy that includes how IRR is tested, documentation of training, and instruments and tools used.
Algorithms	◆ The development of any systematic process that consists of an ordered sequence of steps. Each step depends on the outcome of the previous step. ◆ The HSAG review team looks for the BHOs to describe the process used in data collection. What are the criteria (e.g., what Current Procedural Terminology and/or source codes were used)?
Data Completeness	◆ For the purposes of PIP scoring, data completeness refers to the degree of complete administrative data (e.g., encounter data or claims data). BHOs that compensate their providers on a fee-for-service basis require a submission of claims for reimbursement. However, providers generally have several months before they must submit the claim for reimbursement, and processing claims by the health plan may take several additional months, creating a claims lag. Providers paid on a capitated or salaried basis do not need to submit a claim to be paid, but should provide encounter data for the visit. In this type of arrangement, some encounter data may not be submitted. ◆ PIPs that use administrative data need to ensure the data has a high degree of data completeness prior to its use. Evidence of data completeness levels may include claim processing lag reports, trending of provider submission rates, policies and procedures regarding timeliness requirements for claims and encounter data submission, encounter data submission studies, and comparison reports of claims/encounter data versus medical record review. Discussion in the PIP should focus on evidence at the time the data was collected for use in identifying the population, sampling and/or calculation of the study indicators. Statements such as, "Data completeness at the time of the data pull was estimated to be 97.8 percent based on claims lag reports (see attached Incurred But Not Reported report)," along with the attachment mentioned, usually (but not always) are sufficient evidence to demonstrate data completeness.

Definitions and Explanations	
Activity VII. Appropriate Improvement Strategies	
Causes and Barriers	◆ Interventions for improvement are identified through evaluation or barrier analysis. If there was no improvement, what problem-solving processes were put in place to identify possible causes and proposed changes to implement solutions? ◆ It is expected that interventions associated with improvement of quality indicators will be system interventions.
Standardized	◆ If the interventions have resulted in successful outcomes, the interventions should continue and the BHO should monitor to assure the outcomes remain. ◆ Examples: if an intervention is the use of practice guidelines, then the BHOs continue to use them; if mailers are a successful intervention, then the BHOs continue the mailings and monitor outcomes.
Activity VIII. Sufficient Data Analysis and Interpretation	
Analysis Plan	◆ Each study should have a plan for how data analysis will occur. ◆ The HSAG review team will ensure that this plan was followed.
Generalization to the Study Population	◆ Study results can be applied to the general population with the premise that comparable results will occur.
Factors that Threaten Internal and External Validity	◆ Did the analysis identify any factors (internal or external) that would threaten the validity of study results? ◆ Example: there was a change in record extraction (e.g., a vendor was hired or there were changes in HEDIS methodology).
Presentation of the Data Analysis	◆ Results should be presented in tables or graphs with measurement periods, results, and benchmarks clearly identified.
Identification of Initial Measurement and Remeasurement of Study Indicators	◆ Clearly identify in the report which measurement period the indicator results reflect.
Statistical Differences Between Initial Measurement and Remeasurement Periods	◆ The HSAG review team looks for evidence of a statistical test (e.g., a t-test, or chi square test).
Identification of the Extent to Which the Study Was Successful	◆ The HSAG review team looks for improvement over several measurement periods. ◆ Both interpretation and analysis should be based on continuous improvement philosophies such that the BHO document data results and what follow-up steps will be taken for improvement.

Definitions and Explanations	
Activity IX. Real Improvement Achieved	
Remeasurement Methodology Is the Same as Baseline	◆ The HSAG review team looks to see that the study methodology remained the same for the entire study.
Documented Improvement in Processes or Outcomes of Care	◆ The study report should document how interventions were successful in impacting system processes or outcomes. ◆ Examples: there was a change in data collection or a rate increase or decrease demonstrated in graphs/tables.
Activity X. Sustained Improvement Achieved	
Sustained Improvement	◆ The HSAG review team looks to see if study improvements have been sustained over the course of the study. This needs to be demonstrated over a period of several (more than two) remeasurement periods.