

Colorado Medicaid
Community Mental Health Services Program

FY 07–08 PIP VALIDATION REPORT

Coordination of Care Between Medicaid
Physical and Behavioral Health Providers

for

Foothills Behavioral Health, LLC

May 2008

*This report was produced by Health Services Advisory Group, Inc. for the
Colorado Department of Health Care Policy & Financing.*



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Overview

The Balanced Budget Act of 1997 (BBA), 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 the Code of Federal Regulations (CFR), at 42 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

Foothills Behavioral Health, LLC's (FBH's) nonclinical PIP topic for the fiscal year (FY) 07–08 validation cycle was *Coordination of Care Between Medicaid Physical and Behavioral Health Providers*. The PIP's intent was to evaluate and improve coordination of care between Medicaid physical and behavioral health providers for consumers with a diagnosis of schizophrenia (ICD-9 codes 295.10, 295.20, 295.30, 295.60, and 295.90), schizoaffective disorder (ICD-9 code 295.70), or bipolar disorder (ICD-9 codes 296.0x, 296.40, 296.4x, 296.5x, 296.6x, and 296.7). The goal was to improve consumer health, functionality, and satisfaction with the health care delivery system by developing interventions that increase coordination of care and communication between providers. This study was assigned by the Department and was a collaborative PIP across all BHOs.

Study Topic

FBH submitted *Coordination of Care Between Medicaid Physical and Behavioral Health Providers* as its statewide collaborative PIP. The focus of the study was consumers with a diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder. The study topic was relevant because the population represents a high-risk group that frequently has co-occurring medical conditions and is at higher risk of early death due to medical conditions that are undiagnosed or untreated.

The **FBH** study question was: “Do targeted interventions improve coordination of care between physical and behavioral health providers for consumers with a diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder, as measured by the percent of the study population with a physical health office visit and the percent of the study population with documentation of coordination of care in the behavioral health record?”

Study Methodology

FBH had two study indicators for this submission. The study indicators were defined as follows:

- ◆ “The percentage of the study population (defined in Activity IV) with one or more preventive or ambulatory medical office visits during the measurement period.”
- ◆ “The percentage of the study population (defined in Activity IV) with one or more preventive or ambulatory medical office visits during the measurement period with documentation of coordination of care in the behavioral health record.”

FBH’s study population included all consumers with a diagnosis of schizophrenia (ICD-9 codes 295.10, 295.20, 295.30, 295.60, and 295.90), schizoaffective disorder (ICD-9 code 295.70), or bipolar disorder (ICD-9 codes 296.0x, 296.40, 296.4x, 296.5x, 296.6x, and 296.7) who received at least one BHO outpatient service, and who were Medicaid-eligible for at least 10 months with **FBH** during the measurement period. Consumers had to be at least 21 years of age as of the first day of the measurement period.

Study Results

FBH completed Activities I through IV for this year’s validation cycle; therefore, there were no results to report.

Scoring

HSAG validates a total of 10 activities for each PIP. PIP validation takes place annually and reflects activities that have been completed. A health plan (BHO) may take up to three years to 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 is *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, 4 activities with a total of 18 elements were validated. Of this number:
 - 17 evaluation elements were *Met*.
 - 0 evaluation elements were *Partially Met*.
 - 0 evaluation elements were *Not Met*.
 - 1 evaluation element was *Not Applicable (NA)*.
- ◆ The total number of critical elements that were evaluated equaled 7. Of this number:
 - 7 critical elements were *Met*.
 - 0 critical elements were *Partially Met*.
 - 0 critical elements were *Not Met*.
 - 0 critical elements were *NA*.

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

Conclusions

The study successfully addressed CMS' requirements related to quality outcomes—specifically, quality of care and services. For the FY 07–08 validation cycle, the study addressed how improving coordination of care has the potential to improve consumer care and services. **FBH** has developed a strong study design with which to move forward.

Requirements

There were no requirements identified during this review.

Recommendations

As plan-specific data (baseline data) become available that support the selection of the study topic, this information should be documented in Activity I.

In Activity IV, future submissions of the PIP should include “and enrolled” for members who were Medicaid-eligible for at least 10 months with **FBH**.

2. Scoring Methodology

for Foothills Behavioral Health, LLC

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:

<i>Met</i>	(1) All critical elements were <i>Met</i> <div style="text-align: center;">and</div> (2) 80 percent to 100 percent of all critical and noncritical elements were <i>Met</i> . No action required.
<i>Partially Met</i>	(1) All critical elements were <i>Met</i> and 60 percent to 79 percent of all critical and noncritical elements were <i>Met</i> <div style="text-align: center;">or</div> (2) One critical element or more was <i>Partially Met</i> . Requires revision and resubmission of the PIP.
<i>Not Met</i>	(1) All critical elements were <i>Met</i> and less than 60 percent of all critical and noncritical elements were <i>Met</i> <div style="text-align: center;">or</div> (2) One critical element or more was <i>Not Met</i> . Requires revision and resubmission of the PIP.
<i>NA</i>	Not Applicable elements (including critical elements if they were not assessed) were removed from all scoring.

PIP Scores

For this PIP, HSAG reviewed Activities I through IV. Table 2-1 and Table 2-2 show **FBH's** scores based on HSAG's PIP evaluation of *Coordination of Care Between Medicaid Physical and Behavioral Health Providers*. Each activity has been reviewed and scored according to HSAG's validation methodology.

**Table 2-1—FY 07–08 Performance Improvement Project Scores
for Coordination of Care Between Medicaid Physical and Behavioral Health Providers
for Foothills Behavioral Health, LLC**

Review Activity	Total Possible Evaluation Elements (Including Critical Elements)	Total Met	Total Partially Met	Total Not Met	Total NA	Total Possible Critical Elements	Total Critical Elements Met	Total Critical Elements Partially Met	Total Critical Elements Not Met	Total Critical Elements NA
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	Not Assessed				1	Not Assessed			
VI. Accurate/Complete Data Collection	11	Not Assessed				1	Not Assessed			
VII. Appropriate Improvement Strategies	4	Not Assessed				No Critical Elements				
VIII. Sufficient Data Analysis and Interpretation	9	Not Assessed				2	Not Assessed			
IX. Real Improvement Achieved	4	Not Assessed				No Critical Elements				
X. Sustained Improvement Achieved	1	Not Assessed				No Critical Elements				
Totals for All Activities	53	17	0	0	1	11	7	0	0	0

**Table 2-2—FY 07–08 Performance Improvement Project Overall Score
for Coordination of Care Between Medicaid Physical and Behavioral Health Providers
for Foothills Behavioral Health, LLC**

Percentage Score of Evaluation Elements <i>Met</i> *	100%
Percentage Score of Critical Elements <i>Met</i> **	100%
Validation Status***	<i>Met</i>

* 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 the CMS rationale for each activity.

The PIP's goal was to evaluate and improve coordination of care between Medicaid physical and behavioral health providers for consumers with a diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder. This population represents a high-risk group with frequent co-occurring conditions and multiple medical providers. This study was a statewide collaborative PIP across all BHOs.

Activity I. Appropriate Study Topic

Study Topic

FBH submitted *Coordination of Care Between Medicaid Physical and Behavioral Health Providers* as its statewide collaborative PIP. The study topic was relevant because the population represents a high-risk group that frequently has co-occurring medical conditions and is at higher risk of early death due to medical conditions that are undiagnosed or untreated.

Finding(s)

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

Strength(s)

The study topic addressed high-risk conditions and a broad spectrum of care and services over time. The study had the potential to affect consumer health, functional status, and satisfaction. All eligible consumers who met the study criteria were included.

Requirement(s) (for Critical Elements)

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

Recommendation(s) (for Noncritical Elements)

As plan-specific data (baseline data) become available that support the selection of the study topic, this information should be documented in Activity I.

Activity II. Clearly Defined, Answerable Study Question

Study Question(s)

FBH's study question was: "Do targeted interventions improve coordination of care between physical and behavioral health providers for consumers with a diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder, as measured by the percent of the study population with a physical health office visit and the percent of the study population with documentation of coordination of care in the behavioral health record?"

Finding(s)

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

Strength(s)

The study question was stated in simple terms, was in the correct format to meet CMS Protocols, and was answerable.

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 III. Clearly Defined Study Indicator(s)

Study Indicator(s)

FBH had two study indicators for this submission. The study indicators were:

- ◆ "The percentage of the study population (defined in Activity IV) with one or more preventive or ambulatory medical office visits during the measurement period."
- ◆ "The percentage of the study population (defined in Activity IV) with one or more preventive or ambulatory medical office visits during the measurement period with documentation of coordination of care in the behavioral health record."

Finding(s)

Six of the seven evaluation elements were *Met* for this activity, including three critical elements. One element was *Not Applicable* because the study indicators were not nationally recognized.

Strength(s)

The study indicators were well-defined, objective, measurable, and were based on current, evidence-based practice guidelines, pertinent peer review literature, and consensus expert panels. They allowed for the study question to be answered, and measured changes (outcomes) in a valid process alternative.

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**

FBH's study population included all consumers with a diagnosis of schizophrenia (ICD-9 codes 295.10, 295.20, 295.30, 295.60, and 295.90), schizoaffective disorder (ICD-9 code 295.70), or bipolar disorder (ICD-9 codes 296.0x, 296.40, 296.4x, 296.5x, 296.6x, and 296.7) who received at least one BHO outpatient service, and who were Medicaid-eligible for at least 10 months with **FBH**, during the measurement period. Consumers had to be at least 21 years of age as of the first day of the measurement period.

Finding(s)

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

Strength(s)

The method for identifying the eligible study population was accurately and completely defined, included the required length of consumer enrollment in the BHO, and captured all 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)

Future submissions of the PIP should include “and enrolled” for members who were Medicaid-eligible for at least 10 months with **FBH**.

Activity V. Through X. Not Assessed

Activities V through X were not assessed for **FBH's** PIP because the PIP had not progressed to the point of data collection for this year's submission. **FBH** will continue with the PIP process.

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

DEMOGRAPHIC INFORMATION			
Health Plan Name:	Foothills Behavioral Health, LLC		
Study Leader Name:	Barbara Smith, RN, PhD	Title:	Director Quality Assurance, Performance Improvement
Phone Number:	(303) 432-5952	E-mail Address:	bsmith@fbhcolorado.org
Name of Project/Study:	Coordination of Care Between Medicaid Physical and Behavioral Health Providers		
Type of Study:	Nonclinical		
Date of Study:	7/1/2006 to 6/30/2007		
Type of Delivery System:	BHO	Number of Medicaid Consumers in BHO:	7,328
		Number of Medicaid Consumers in Study:	TBD
Year 1 Validation:	Initial Submission		
Results:			

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

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). NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study topic was selected by the State and reflected high-risk conditions.
2. Is selected following collection and analysis of data. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study topic was selected by the State. Point of clarification: As plan-specific data (baseline data) become available that support the selection of the study topic, this information should be documented in Activity I.
3. Addresses a broad spectrum of care and services (or was selected by the State). The score for this element will be Met or Not Met.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study topic was selected by the State and addressed a broad spectrum of care and services.
4. Includes all eligible populations that meet the study criteria. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	All eligible consumers who met the study criteria were included in the study.
5. Does not exclude consumers with special health care needs. The score for this element will be Met or Not Met.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Consumers with special health care needs were not excluded from the study.
C* 6. Has the potential to affect consumer health, functional status, or satisfaction. The score for this element will be Met or Not Met.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study topic was selected by the State and had the potential to affect consumer health and functional status.

* "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.

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

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.

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

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. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study question was stated in clear and simple terms, and was in the correct format to meet CMS Protocols.
C* 2. Is answerable. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study question was answerable.

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.

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

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. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	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.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study indicators were based on current, evidence-based practice guidelines.
C*	3. Allow for the study question to be answered. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study indicators allowed for the study questions to be answered.
	4. Measure changes (outcomes) in health or functional status, consumer satisfaction, or valid process alternatives. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study indicators measured a valid process alternative.
C*	5. Have available data that can be collected on each indicator. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	There were data available to be collected on each study indicator.
	6. Are nationally recognized measures such as HEDIS specifications, when appropriate. The scoring for this element will be Met or NA.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> NA	The study indicators were not nationally recognized measures.
	7. Includes the basis on which the indicator(s) was adopted, if internally developed.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The basis on which the study indicators were adopted was discussed in Activity I.

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.

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

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. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The method for identifying the eligible study population was completely and accurately defined. Point of clarification: Future submissions of the PIP should include "and enrolled" for consumers who were Medicaid-eligible at least 10 months with FBH.
	2. Includes requirements for the length of a consumer's enrollment in the BHO.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The required length of enrollment was included in the study population definition.
C*	3. Captures all consumers to whom the study question applies. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The method for identifying the eligible population captured all consumers to whom the study questions applied.

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.

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

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.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
	2. Identify the sample size.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
	3. Specify the confidence level.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
	4. Specify the acceptable margin of error.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
C*	5. Ensure a representative sample of the eligible population.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
	6. Are in accordance with generally accepted principles of research design and statistical analysis.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.

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

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

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. NA is not applicable to this element for scoring.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
2. Clearly identified sources of data. NA is not applicable to this element for scoring.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
3. A clearly defined and systematic process for collecting data that includes how baseline and remeasurement data will be collected. NA is not applicable to this element for scoring.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
4. A timeline for the collection of baseline and remeasurement data. NA is not applicable to this element for scoring.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
5. Qualified staff and personnel to abstract manual data.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
C* 6. A manual data collection tool that ensures consistent and accurate collection of data according to indicator specifications.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
7. A manual data collection tool that supports interrater reliability.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
8. Clear and concise written instructions for completing the manual data collection tool.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
9. An overview of the study in written instructions.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.

* "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.

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

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.		
10.	Administrative data collection algorithms/flow charts that show activities in the production of indicators.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
11.	An estimated degree of administrative data completeness. Met = 80 - 100% Partially Met = 50 - 79% Not Met = <50% or not provided	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.

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

**Section 4: Colorado FY 07-08 PIP Validation Tool:
Coordination of Care Between Medicaid Physical and Behavioral Health Providers
for Foothills Behavioral Health, LLC**

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. NA is not applicable to this element for scoring.	<input type="checkbox"/> Met	<input type="checkbox"/> Partially Met	<input type="checkbox"/> Not Met	<input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
2. System changes that are likely to induce permanent change.	<input type="checkbox"/> Met	<input type="checkbox"/> Partially Met	<input type="checkbox"/> Not Met	<input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
3. Revised if the original interventions were not successful.	<input type="checkbox"/> Met	<input type="checkbox"/> Partially Met	<input type="checkbox"/> Not Met	<input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
4. Standardized and monitored if interventions were successful.	<input type="checkbox"/> Met	<input type="checkbox"/> Partially Met	<input type="checkbox"/> Not Met	<input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.

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

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

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**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
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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. NA is not applicable to this element for scoring.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
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 NA.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
3. Identifies factors that threaten internal or external validity of findings.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
4. Includes an interpretation of findings.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
5. Is presented in a way that provides accurate, clear, and easily understood information.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
6. Identifies initial measurement and remeasurement of study indicators.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
7. Identifies statistical differences between initial measurement and remeasurement.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
8. Identifies factors that affect the ability to compare initial measurement with remeasurement.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
9. Includes interpretation of the extent to which the study was successful.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.

* "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.

Section 4: Colorado FY 07-08 PIP Validation Tool:
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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	0	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.

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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.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
2.	There is documented improvement in processes or outcomes of care.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
3.	The improvement appears to be the result of planned intervention(s).	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.
4.	There is statistical evidence that observed improvement is true improvement.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.

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

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



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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.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Not assessed. Collaborative PIPs were validated only through Activity IV for this year's validation.

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

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

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

**Table 4-1—FY 07-08 PIP Validation Report Scores:
 Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

Review Activity		Total Possible Evaluation Elements (Including Critical Elements)	Total Met	Total Partially Met	Total Not Met	Total NA	Total Possible Critical Elements	Total Critical Elements Met	Total Critical Elements Partially Met	Total Critical Elements Not Met	Total Critical Elements NA
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		Not Assessed			1	Not Assessed			
VI.	Accurate/Complete Data Collection	11		Not Assessed			1	Not Assessed			
VII.	Appropriate Improvement Strategies	4		Not Assessed			0	No Critical Elements			
VIII.	Sufficient Data Analysis and Interpretation	9		Not Assessed			2	Not Assessed			
IX.	Real Improvement Achieved	4		Not Assessed			0	No Critical Elements			
X.	Sustained Improvement Achieved	1		Not Assessed			0	No Critical Elements			
Totals for All Activities		53	17	0	0	1	11	7	0	0	0

**Table 4-2—FY 07-08 PIP Validation Report Overall Scores:
 Coordination of Care Between Medicaid Physical and Behavioral Health Providers
 for Foothills Behavioral Health, LLC**

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.

Section 4: Colorado FY 07-08 PIP Validation Tool:
**Coordination of Care Between Medicaid Physical and Behavioral Health Providers
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EVALUATION OF THE OVERALL VALIDITY AND RELIABILITY OF PIP 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.

***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

* **Met**

** **Partially Met**

*** **Not Met**

Summary statement on the validation findings:

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

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 *FBH* submitted to HSAG for review, Appendix B is the CMS rationale for each activity, and Appendix C includes PIP definitions and explanations.

- ◆ Appendix A: **Foothills Behavioral Health, LLC's** PIP Study: *Coordination of Care Between Medicaid Physical and Behavioral Health Providers*
- ◆ Appendix B: CMS Rationale by Activity
- ◆ Appendix C: Definitions and Explanations by Activity



**Appendix A: PIP Summary Form:
Care Coordination Between Medicaid Physical
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DEMOGRAPHIC INFORMATION

BHO Name or ID: <Foothills Behavioral Health>

Study Leader Name: Barbara Smith, RN, PhD

Title: Director Quality Assurance Performance Improvement

Telephone Number: 303.432.5952

E-Mail Address: bsmith@fbhcolorado.org

Name of Project/Study: <Care Coordination Between Behavioral Health and Primary Care>

Type of Study: Clinical

Nonclinical

Section to be completed by HSAG

X Year 1 Validation X Initial Submission _____ Resubmission

_____ Year 2 Validation _____ Initial Submission _____ Resubmission

_____ Year 3 Validation _____ Initial Submission _____ Resubmission

Section to be completed by HSAG

X Baseline Assessment _____ Remeasurement 1

_____ Remeasurement 2 _____ Remeasurement 3

7328 (January 2008) Number of Medicaid Consumers

TBD Number of Medicaid Consumers in Study

Appendix A: PIP Summary Form: Care Coordination Between Medicaid Physical and Behavioral Health Providers for Foothills Behavioral Health, LLC

A. Activity I: Choose the study topic. PIP topics should target improvement in relevant areas of services and reflect the population in terms of demographic characteristics, prevalence of disease, and the potential consequences (risks) of the disease. Topics may be derived from utilization data (ICD-9 or CPT coding data related to diagnoses and procedures; NDC codes for medications; state HCPC codes for medications, medical supplies, and medical equipment; adverse events; admissions; readmissions; etc.); grievances and appeals data; survey data; provider access or appointment availability data; consumer characteristics data such as race/ethnicity/language; other fee-for-service data; local or national data related to Medicaid risk populations; etc. The goal of the project should be to improve processes and outcomes of health care or services in order to have a potentially significant impact on consumer health, functional status, or satisfaction. The topic may be specified by the State Medicaid agency or CMS and be based on input from consumers. Over time, topics must cover a broad spectrum of key aspects of consumer care and services, including clinical and nonclinical areas, and should include all enrolled populations (i.e., certain subsets of consumers should not be consistently excluded from studies).

Study topic: (see Attach 1_references.doc for detail on references below)

The intent of this performance improvement project is to improve coordination of care between physical and behavioral health providers for consumers with Medicaid who are receiving behavioral health services and whose behavioral health diagnosis includes schizophrenia, schizoaffective disorder, or bipolar disorder. This subset of consumers, who have a diagnosis within these three diagnostic groups, represent a large proportion of a group of consumers, often labeled as Severely Mentally Ill (SMI). Individuals with one of these diagnoses have been found to have a significantly shorter life span than the normal population (Brown, 1997; National Association of State Mental Health Program Directors Medical Directors Council, 2006; Newman & Bland; Osby et al., 2001). This higher mortality rate, for persons with schizophrenia and bipolar disorder, is secondary to the fact that these individuals are much more likely to develop chronic medical conditions, including cardiovascular disease, diabetes, hepatitis, asthma, chronic bronchitis, and emphysema due to the more frequent presence of key risk factors, such as smoking, obesity, hypertension, hyperlipidemia, and poor dietary habits (American Diabetes Association et al., 2004; Brown, Inskip, & Barraclough, 2000; Goff et al., 2005; McIntyre et al., 2005; Osby et al., 2001; Sokal et al., 2004). A review of FBH Members in mental health treatment, FY '07, with the diagnoses of schizophrenia, schizoaffective disorder, and bipolar (n=520), indicated that 192 (37%) were rated by clinical staff, on the physical health outcome item of the Colorado Client Assessment Record (CCAR) as "5" or above and 25 (6%) were rated as "7" or above. This rating indicated that more than one third of consumers with these specific diagnoses were reported to have, at a minimum, "frequent or chronic physical health problems" and more than 10% of those rating "5" or above were rated as being "incapacitated due to physical health problems." Findings from a descriptive study, conducted on a group of Members in treatment at one of Foothill Behavioral Health's Network Mental Health Centers, who died of natural causes over a 8 month period August 2007 through March 2008 (n=10), indicated that almost all (n=8), had a diagnosis of schizophrenia or bipolar disorder and the average age was 41. Although a small sample this study reinforces how "at risk" this group of consumers are for serious physical problems.

Appendix A: PIP Summary Form: Care Coordination Between Medicaid Physical and Behavioral Health Providers for Foothills Behavioral Health, LLC

A. Activity I: Choose the study topic. PIP topics should target improvement in relevant areas of services and reflect the population in terms of demographic characteristics, prevalence of disease, and the potential consequences (risks) of the disease. Topics may be derived from utilization data (ICD-9 or CPT coding data related to diagnoses and procedures; NDC codes for medications; state HCPC codes for medications, medical supplies, and medical equipment; adverse events; admissions; readmissions; etc.); grievances and appeals data; survey data; provider access or appointment availability data; consumer characteristics data such as race/ethnicity/language; other fee-for-service data; local or national data related to Medicaid risk populations; etc. The goal of the project should be to improve processes and outcomes of health care or services in order to have a potentially significant impact on consumer health, functional status, or satisfaction. The topic may be specified by the State Medicaid agency or CMS and be based on input from consumers. Over time, topics must cover a broad spectrum of key aspects of consumer care and services, including clinical and nonclinical areas, and should include all enrolled populations (i.e., certain subsets of consumers should not be consistently excluded from studies).

Unfortunately, although individuals with chronic medical conditions can be treated and at risk factors modified or eliminated, there is, at present, a failure to detect, treat, and collaborate in the care of co-occurring medical conditions with a severe mental illness (Institute of Medicine, 2006). The Institute of Medicine's report, Improving the Quality of Health Care for Mental and Substance-Use Conditions, which devotes an entire chapter to care coordination, describes the multiple barriers to care coordination and reinforces the importance of efforts in improving this process for the severely mentally ill.

This study, assigned by the Colorado Department of Healthcare Policy and Financing as a statewide performance improvement project, is undertaken to begin addressing the present gaps in care coordination between physical health and behavioral health for the above described "at risk" population. Strategies, specific to Foothills Behavioral Health (FBH), will be implemented, in an effort to improve care coordination, as measured by an increase in proportion of the study population with a visit with a physical health provider over the past year and an increase in care coordination documentation in the study population's medical record.

**Appendix A: PIP Summary Form:
Care Coordination Between Medicaid Physical
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B. Activity II: Define the study question(s). Stating the question(s) helps maintain the focus of the PIP and sets the framework for data collection, analysis, and interpretation.

Study question:

Do targeted interventions improve coordination of care between physical and behavioral health providers for consumers with a diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder, as measured by the percent of the study population with a physical health office visit and the percent of the study population with documentation of coordination of care in the behavioral health record?

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Care Coordination Between Medicaid Physical
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C. Activity III: Select the 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 an influenza vaccination in the last twelve months), or a status (e.g., a consumer’s blood pressure is/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.

Study Indicator 1	Describe rationale for selection of study indicator: The percentage of the study population (defined in Activity IV) with one or more preventive or ambulatory medical office visit during the measurement period. It is hypothesized that care coordination strategies, implemented by FBH providers, will improve the proportion with a physical health office visit.
Numerator	The number of Members in the “study population” (defined in Activity IV) with at least one preventive or ambulatory medical visit during the measurement period. Acceptable procedure codes are defined by HEDIS in Table AAP-A with the exception of the ophthalmology and optometry CPT codes (see Attach 2_AAP HEDIS Access to Preventive Ambulatory Care (2).doc).
Denominator	The number of Members in the “study population” (defined in Activity IV).
First Measurement Period Dates	FY '07 (July 1, 2006 through June 30, 2007)
Benchmark	none
Source of Benchmark	n/a
Baseline Goal	Establish baseline

**Appendix A: PIP Summary Form:
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C. Activity III: Select the 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 an influenza vaccination in the last twelve months), or a status (e.g., a consumer’s blood pressure is/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.

Study Indicator 2	Describe rationale for selection of study indicator: The percent of the study population (defined in Activity IV) with one or more preventive or ambulatory medical visit during the measurement period with documentation of coordination of care in the behavioral health record. It is hypothesized that care coordination strategies, implemented by FBH providers, will improve or increase the documentation of care coordination in the medical record
Numerator	The number of Members in the “study population” (defined in Activity IV) with at least one preventive or ambulatory medical visit during the measurement period, whose behavioral health provider documented coordination of care with a physical health provider in the behavioral health record during the measurement period.
Denominator	A statistically valid random sample of Members in the “study population” (defined in Activity IV) with at least one preventive or ambulatory visit during the measurement period. Acceptable procedure codes are defined by HEDIS in Table AAP-A with the exception of the ophthalmology and optometry CPT codes (see Attach 2_AAP HEDIS Access to Preventive Ambulatory Care (2).doc).
First Measurement Period Dates	FY '07 (July 1, 2006 through June 30, 2007)
Benchmark	none
Source of Benchmark	n/a
Baseline Goal	Establish baseline

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C. Activity III: Select the 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 an influenza vaccination in the last twelve months), or a status (e.g., a consumer’s blood pressure is/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.

Study Indicator 3	Describe rationale for selection of study indicator:
Numerator	
Denominator	
First Measurement Period Dates	
Benchmark	
Source of Benchmark	
Baseline Goal	

Use this area for the provision of additional information:

**Appendix A: PIP Summary Form:
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D. Activity IV: Use a representative and generalizable study population. The selected topic should represent the entire Medicaid enrolled population, with system wide measurement and improvement efforts to which the study indicators apply. Once the population is identified, a decision must be made whether to review data for the entire population or a sample of that population. The length of a consumer's enrollment needs to be defined in order to meet the study population criteria.

Study population:

The study population includes all Members with a diagnosis of schizophrenia ((295.10, 295.20, 295.30, 295.60, 295.90), schizoaffective disorder (295.70), or bipolar disorder (296.0x, 296.40, 296.4x, 296.5x, 296.6x, 296.7) who received at least one BHO outpatient service and who were Medicaid eligible at least 10 months with FBH, during the measurement period. Members must be at least 21 years of age as of the first day of the measurement period.

Study Indicator #1: The entire identified population will be used

Study Indicator #2: A statistically valid random sample of the study population who had at least one preventive or ambulatory visit during the measurement period. Acceptable procedure codes are defined by HEDIS in Table AAP-A with the exception of the ophthalmology and optometry CPT codes (see Attach 2_AAP HEDIS Access to Preventive Ambulatory Care (2).doc).

**Appendix A: PIP Summary Form:
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E. Activity V: Use sound 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 the first time a topic is studied.

Measure	Sample Error and Confidence Level	Sample Size	Population	Method for Determining Size (<i>describe</i>)	Sampling Method (<i>describe</i>)

Appendix A: PIP Summary Form: Care Coordination Between Medicaid Physical and Behavioral Health Providers *for Foothills Behavioral Health, LLC*

F. Activity VIa: Use valid and reliable data collection procedures. Data collection must ensure that the data collected on study 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 (include training, experience and qualifications):

Administrative Data

Data Source

Programmed pull from claims/encounters

Complaint/appeal

Pharmacy data

Telephone service data /call center data

Appointment/access data

Delegated entity/vendor data _____

Other _____

Other Requirements

Data completeness assessment attached

Coding verification process attached

Survey Data

Fielding Method

Personal interview

Mail

Phone with CATI script

Phone with IVR

Internet

Other _____

Other Requirements

Number of waves _____

Response rate _____

Incentives used _____



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F. Activity VIb: Determine the data collection cycle.	Determine the data analysis cycle.
<p><input type="checkbox"/> Once a year <input type="checkbox"/> Twice a year <input type="checkbox"/> Once a season <input type="checkbox"/> Once a quarter <input type="checkbox"/> Once a month <input type="checkbox"/> Once a week <input type="checkbox"/> Once a day <input type="checkbox"/> Continuous <input type="checkbox"/> Other (list and describe):</p> <hr/> <hr/> <hr/>	<p><input type="checkbox"/> Once a year <input type="checkbox"/> Once a season <input type="checkbox"/> Once a quarter <input type="checkbox"/> Once a month <input type="checkbox"/> Continuous <input type="checkbox"/> Other (list and describe):</p> <hr/> <hr/> <hr/> <hr/> <hr/>

F. Activity VIc. Data analysis plan and other pertinent methodological features. Complete only if needed.

Estimated percentage degree of administrative data completeness: _____ percent.

Supporting documentation:



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G. Activity VIIIb: Implement intervention and 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. Describe interventions designed to change behavior at an institutional, practitioner, or consumer level.

Describe interventions:

Baseline to Remeasurement 1:

Remeasurement 1 to Remeasurement 2:

Remeasurement 2 to Remeasurement 3:

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

Data analysis process:

Baseline Measurement:

Remeasurement 1:

Remeasurement 2:

Remeasurement 3:

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and Behavioral Health Providers
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H. Activity VIIIb. Interpretation of study results: Describe the results of the statistical analysis, interpret the findings, 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.

Interpretation of study results:

Address factors that threaten internal or external validity of the findings for each measurement period.

Baseline Measurement:

Remeasurement 1:

Remeasurement 2:

Remeasurement 3:



**Appendix A: PIP Summary Form:
Care Coordination Between Medicaid Physical
and Behavioral Health Providers
for Foothills Behavioral Health, LLC**

I. Activity IX: Report improvement. Describe any meaningful change in performance observed and demonstrated during baseline measurement.

Quantifiable Measure No. 1:						
Time Period Measurement Covers	Baseline Project Indicator Measurement	Numerator	Denominator	Rate or Results	Industry Benchmark	Statistical Test and Significance* Test statistic and p-value
	<i>Baseline:</i>					
	Remeasurement 1					
	Remeasurement 2					
	Remeasurement 3					
	Remeasurement 4					
	Remeasurement 5					
Quantifiable Measure No. 2:						
Time Period Measurement Covers	Baseline Project Indicator Measurement	Numerator	Denominator	Rate or Results	Industry Benchmark	Statistical Test and Significance* Test statistic and p-value
	<i>Baseline:</i>					
	Remeasurement 1					
	Remeasurement 2					
	Remeasurement 3					
	Remeasurement 4					
	Remeasurement 5					

**Appendix A: PIP Summary Form:
Care Coordination Between Medicaid Physical
and Behavioral Health Providers
for Foothills Behavioral Health, LLC**

I. Activity IX: Report improvement. Describe any meaningful change in performance observed and demonstrated during baseline measurement.

Quantifiable Measure No. 3:

Time Period Measurement Covers	Baseline Project Indicator Measurement	Numerator	Denominator	Rate or Results	Industry Benchmark	Statistical Test and Significance* Test statistic and p-value
	<i>Baseline:</i>					
	Remeasurement 1					
	Remeasurement 2					
	Remeasurement 3					
	Remeasurement 4					
	Remeasurement 5					

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



**Appendix A: PIP Summary Form:
Care Coordination Between Medicaid Physical
and Behavioral Health Providers
for Foothills Behavioral Health, LLC**

J. Activity X: Describe sustained improvement. Describe any demonstrated improvement through repeated measurements over comparable time periods. Discuss any random year-to-year variation, population changes, sampling error, or statistically significant declines that may have occurred during the remeasurement process

Sustained improvement:

Appendix B. **CMS Rationale by Activity** *for Foothills Behavioral Health, LLC*

PIPs provide a structured method of assessing and improving the processes, and thereby the 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 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 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 study 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 members, 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 members.
3. The number of data collection staff members used for a given project affects the reliability of the data. A smaller number of staff members promote 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. The BHO must identify and develop appropriate interventions for each PIP to ensure the likelihood of measurable change.

If repeated measurements 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 the protocol for this activity does not specify a level of statistical significance that a reported change in performance must meet, it does require that EQROs assess the extent to which any performance changes reported by a BHO can be found to be statistically significant. States may choose to establish their own numerical thresholds for the significance of reported improvements (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 Foothills Behavioral Health, LLC

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.

Concepts	Definitions and Explanations
Activity I. Appropriate Study Topic	
Broad spectrum of care	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ May be defined as consumers who meet the study population parameters.
Selected by the State	<ul style="list-style-type: none"> ◆ If the study topic was selected by the state Medicaid agency, this information is included as part of the description under Activity I: “Choose the Selected Study Topic” in the PIP Summary Form.
Activity II. Clearly Defined, Answerable Study Question	
Study question	<ul style="list-style-type: none"> ◆ 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: <ol style="list-style-type: none"> 1. Does educational outreach about immunizations 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?

Concepts	Definitions and Explanations
Activity III. Clearly Defined Study Indicator(s)	
Study indicator	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ Documentation/background information that supports the rationale for the study topic, study question, and indicators. ◆ Examples: HEDIS^{®1} 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	<ul style="list-style-type: none"> ◆ Refers to consumers who are included in the study. ◆ Includes age, conditions, enrollment criteria, and measurement periods. ◆ Example: The eligible population includes all children 0–2 years of age 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	<ul style="list-style-type: none"> ◆ This may not be known the first time a topic is studied. In this case, the BHO should assume the need for a maximum sample size to establish a statistically valid baseline for the study. HSAG will review whether the BHO defined the impact the topic has on the population or the number of eligible consumers in the population.
Sample size	<ul style="list-style-type: none"> ◆ Indicates the size of the sample to be used.
Representative sample	<ul style="list-style-type: none"> ◆ Refers to the sample reflecting the entire population.
Confidence level	<ul style="list-style-type: none"> ◆ 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).

¹ HEDIS[®] is a registered trademark of the National Committee for Quality Assurance (NCQA).

Concepts	Definitions and Explanations
Activity VI. Accurate/Complete Data Collection	
Data elements	<ul style="list-style-type: none"> ◆ Identification of data elements includes unambiguous definitions of data that will be collected (e.g., the numerator/denominator, laboratory values).
Interrater reliability (IRR)	<ul style="list-style-type: none"> ◆ 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 for the review of a minimum percentage of records? ◆ Examples: A policy that includes how IRR is tested, documentation of training, and instruments and tools used.
Algorithms	<ul style="list-style-type: none"> ◆ 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 expects the BHO 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	<ul style="list-style-type: none"> ◆ 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 that the data has a high degree of 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.

Concepts	Definitions and Explanations
Activity VII. Appropriate Improvement Strategies	
Causes and barriers	<ul style="list-style-type: none"> ◆ Interventions for improvement are identified through evaluation or barrier analysis. If there is no improvement, what problem-solving processes are 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	<ul style="list-style-type: none"> ◆ If the interventions result in successful outcomes, the interventions should continue and the BHO should monitor them to ensure that the outcomes remain. ◆ Examples: If an intervention is the use of practice guidelines, then the BHO continues to use them. If mailers are a successful intervention, then the BHO continues the mailings and monitors the outcomes.
Activity VIII. Sufficient Data Analysis and Interpretation	
Analysis plan	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ Study results can be applied to the general population with the premise that comparable results will occur.
Factors that threaten internal and external validity	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ 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	<ul style="list-style-type: none"> ◆ Clearly identify in the report which measurement period the indicator results reflect.
Statistical differences between initial measurement and remeasurement periods	<ul style="list-style-type: none"> ◆ The HSAG review team looks for evidence of a statistical test (e.g., a <i>t</i> test or Chi-square test).
Identification of the extent to which the study was successful	<ul style="list-style-type: none"> ◆ The HSAG review team looks for improvement over several measurement periods. ◆ Both interpretation and analysis should be based on continuous improvement philosophies, with the BHO documenting data results and the follow-up steps that will be taken for improvement.

Concepts	Definitions and Explanations
Activity IX. Real Improvement Achieved	
Remeasurement methodology is the same as baseline	<ul style="list-style-type: none"> ◆ The HSAG review team looks to see that the study methodology remains the same for the entire study.
Documented improvement in processes or outcomes of care	<ul style="list-style-type: none"> ◆ The study 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	<ul style="list-style-type: none"> ◆ 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.