Colorado Medicaid
Community Mental Health Services Program

FY 07–08 PIP VALIDATION REPORT

Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment

for

Access Behavioral Care

May 2008

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

Access Behavioral Care's (ABC's) nonclinical PIP for the fiscal year (FY) 07–08 validation cycle was *Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment.* Use of psychiatric emergency services (PES) by **ABC** consumers is on the rise. There is an opportunity to reduce emergency department (ED) visits by improving the coordination and delivery of outpatient treatment. The goal of this PIP is to reduce the unnecessary use of PES through improved coordination of care between ED facilities and outpatient providers. This study is a collaborative PIP across all BHOs.

Study Topic

ABC chose *Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment* as its study topic. This study is relevant because **ABC** consumers are demonstrating an increase in ED use, with a high proportion of consumers using the ED more than one time in a 90-day period.

ABC's study questions were:

- "Do targeted interventions reduce the rate of emergency department visits/1000 members?"
- "Do targeted interventions reduce the rate of consumers returning to the emergency department?"

Study Methodology

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

- "Total number of annualized per thousand members per year (PTMPY) emergency department visits not resulting in an inpatient admission."
- "Rate of consumers returning to the emergency department within 3 months."

Study Results

ABC's study only progressed through Activity V. There were no results to report for this validation cycle.

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, 5 activities with a total of 24 elements were validated. Of this number:
  - ▪ 16 evaluation elements were *Met*.
  - ▪ 0 evaluation elements were *Partially Met.*
  - ▪ 0 evaluation elements were *Not Met*.
  - ▪ 8 evaluation elements were *Not Applicable (NA).*
- ◆ The total number of <u>critical elements</u> that were evaluated equaled 8. Of this number:
  - ▪ 7 critical elements were *Met*.
  - ▪ 0 critical elements were *Partially Met.*
  - ▪ 0 critical elements were *Not Met*.
  - ▪ 1 critical element was *NA*.

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 07–08 validation cycle, the study successfully addressed CMS requirements related to quality outcomes—specifically, quality of care and services. **ABC** completed Activities I through V, receiving scores of 100 percent for evaluation elements *Met* and a *Met* validation status.

Requirements

No requirements were identified during this review.

Recommendations

The eligible population was defined in Activity IV; however, Activity I should include information regarding the eligible population for the study. The future submission of the PIP should provide this information in Activity I.

According to the formula for Study Indicator 1 in the PIP submission, the numerator should equal annualized utilization (AU) and the denominator should equal annualized members (AM). The result multiplied by 1,000 equals the rate per thousand members per year (PTMPY). The current numerator as described (which equals only U per formula provided) needs to be updated to reflect AU as defined in the formula provided by **ABC**. The denominator needs to be updated to reflect AM as defined in the provided formula.

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 noncritical elements were *Met*. No action required.
Partially Met	(1) All critical elements were *Met* and 60 percent to 79 percent of all critical and noncritical elements were *Met* **or** (2) One critical element or more was *Partially Met*. Requires revision and resubmission of the PIP.
Not Met	(1) All critical elements were *Met* and less than 60 percent of all critical and noncritical elements were *Met* **or** (2) One critical element or more was *Not Met*. Requires revision and resubmission of the PIP.
NA	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 V. Table 2-1 and Table 2-2 show **ABC's** scores based on HSAG's PIP evaluation of *Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment*. Each activity has been reviewed and scored according to HSAG's validation methodology.

	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*
Table 2-1—FY 07–08 Performance Improvement Project Scores *for* **Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment** *for* **Access Behavioral Care**											
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	2	0	0	1	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	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**	**16**	**0**	**0**	**8**	**11**	**7**	**0**	**0**	**1**

Table 2-2—FY 07–08 Performance Improvement Project Overall Score *for* **Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment** *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 the CMS rationale for each activity.

The validation was performed on **ABC's** PIP, *Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment.* Use of PES by **ABC** consumers is on the rise. There is an opportunity to reduce ED visits by improving the coordination and delivery of outpatient treatment. The goal of this PIP is to reduce the unnecessary use of PES through improved coordination of care between ED facilities and outpatient providers.

Activity I. Appropriate Study Topic

Study Topic

ABC chose *Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment* as its PIP topic. This study is relevant because this population is demonstrating an increase in ED use, with a high proportion of consumers using the ED more than one time in a 90-day period.

Finding(s)

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

Strength(s)

The study topic selected reflected a high-volume and high-risk condition and a broad spectrum of care and services over time.

Requirement(s) (for Critical Elements)

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

Recommendation(s) (for Noncritical Elements)

The eligible population was defined in Activity IV; however, Activity I should include information regarding the eligible population for the study. Future submission of the PIP should provide this information in Activity I.

Activity II. Clearly Defined, Answerable Study Question

Study Question(s)

ABC's study questions were:

- "Do targeted interventions reduce the rate of emergency department visits/1000 members?"
- "Do targeted interventions reduce the rate of consumers returning to the emergency department?"

Finding(s)

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

Strength(s)

The study questions were stated in the correct format to meet CMS Protocols. The study questions set the focus of the study and were 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)

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

- "Total number of annualized per thousand members per year (PTMPY) emergency department visits not resulting in an inpatient admission."
- "Rate of consumers returning to the emergency department within 3 months."

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 measures.

Strength(s)

The study indicators were well-defined, objective, and measurable. They were based on pertinent peer-review literature on rising PES utilization. The study indicators allowed for the study questions to be answered.

Requirement(s) (for Critical Elements)

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

Recommendation(s) (for Noncritical Elements)

According to the formula in the PIP submission for Study Indicator 1, the numerator should equal AU and the denominator should equal AM. The result being multiplied by 1,000 equals the PTMPY rate. The current numerator as described (which equals only U per the formula provided) needs to be updated to reflect AU as defined in the formula provided by **ABC**. The denominator needs to be updated to reflect AM as defined in the provided formula.

Activity IV. Use a Representative and Generalizable Study Population

Study Population

ABC determined that "the study population will include all **Access Behavioral Care** members using psychiatric emergency services. Criteria for continuous enrollment will not be applied."

Finding(s)

Two of the three evaluation elements for this activity were *Met,* including two critical elements. One element was *Not Applicable* because the enrollment criteria for the study population were not applicable to the PIP.

Strength(s)

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

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

Activity V. Valid Sampling Techniques

Sampling Technique(s)

Sampling techniques were not used for this PIP.

Activity VI through X: Not Assessed

Activities VI through X were not assessed for the fiscal year (FY) 07–08 submission of this PIP. This study was not at a point at which baseline data had been collected. **ABC** will continue with the PIP process.

DEMOGRAPHIC INFORMATION			
Health Plan Name:	Access Behavioral Care		
Study Leader Name:	Robert Bremer, MA, LPC, PhD	Title:	Behavioral Health Quality Manager
Phone Number:	(720) 744-5240	E-mail Address:	robert.bremer@coaccess.com
Name of Project/Study:	Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment		
Type of Study:	Nonclinical		
Date of Study:	1/1/2007 to 12/31/2007		
Type of Delivery System:	BHO	Number of Medicaid Consumers in BHO: Number of Medicaid Consumers in Study:	70,587
Year 1 Validation:	Resubmission		
Results:			

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.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The study topic selected reflected a high-volume and high-risk condition.
2. Is selected following collection and analysis of data. NA is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The study topic was selected following the collection and analysis of national and plan-specific data.
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.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The study topic addressed a broad spectrum of care and services over time.
4. Includes all eligible populations that meet the study criteria. NA is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The study included all consumers who met the study criteria. Point of clarification: The eligible population was defined in Activity IV; however, Activity I should include information regarding the eligible population for the study. Re-review April 2008: After review of the resubmitted PIP documentation, the point of clarification will remain. Activity I did not include information regarding the eligible population for the study. Future submissions of the PIP should provide this information in Activity I.

* "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		
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.**	
5. Does not exclude consumers with special health care needs. The score for this element will be Met or Not Met.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The study addressed consumers with special health care needs; therefore, they 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.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The study topic had the potential to affect consumer health and functional status.

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. NA is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The two study questions provided in the PIP documentation were not stated in the correct format to meet CMS Protocols. The study question(s) need to be stated in the x/y format: "Does doing X result in Y?" An example of this type of question is "Do targeted interventions reduce the rate of consumers returning to the emergency room within three months?" Re-review April 2008: After review of the resubmitted PIP documentation, the score for this evaluation element was changed from Not Met to Met. The study questions are now in the correct format to meet CMS Protocols and set the focus of the study.
C*	2. Is answerable. NA is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The two study questions provided were answerable study questions; however, the questions were not stated in the correct format to meet CMS Protocols. Re-review April 2008: After review of the resubmitted PIP documentation, the score for this evaluation element was changed from Not Met to Met. The study questions are now answerable.

* "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 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. NA is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The study indicators were well-defined, objective, and measurable. Point of clarification: According to the formula in the PIP submission for Study Indicator 1, the numerator should equal AU and the denominator should equal AM. The result being multiplied by 1,000 equals the per thousand member per year (PTMPY) rate. The current numerator as described (which equals only U per formula provided) needs to be updated to reflect the definition of AU as defined in the formula and the denominator needs to be updated to reflect AM as defined in the provided formula. Re-review April 2008: After review of the resubmitted PIP documentation, the point of clarification will remain. The resubmitted PIP documentation did not address the point of clarification.
2. Are based on current, evidence-based practice guidelines, pertinent peer review literature, or consensus expert panels.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The study indicators were based on pertinent peer review literature on PES utilization.

* "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* 3. Allow for the study question to be answered. NA is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The study indicators did not allow for the study questions to be answered. The PIP currently does not have study questions that set the framework for the study. Additionally, the study questions were not stated in the correct format to meet CMS Protocols. Re-review April 2008: After review of the resubmitted PIP documentation, the score for this evaluation element has been changed from Not Met to Met. The study indicators now align with the reformatted study questions and the indicators allow 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.	☑ Met ☐ Partially Met ☐ Not Met ☐ 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.	☑ Met ☐ Partially Met ☐ Not Met ☐ 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.	☐ Met ☐ Partially Met ☐ Not Met ☑ NA	The study indicators were not nationally recognized measures.

* "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.**		
7. Includes the basis on which the indicator(s) was adopted, if internally developed.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The PIP provided a description for each study indicator; however, the rationale or the basis on which the indicators were developed was not provided. Re-review April 2008: After review of the resubmitted PIP documentation, the score for this evaluation element has been changed from Partially Met to Met. The basis on which the study indicators were adopted was provided.

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. NA is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The method for identifying the eligible population was not completely defined. The codes used to identify consumers with an ED visit and a second ED visit should be included within the study population definition. Re-review April 2008: After review of the resubmitted PIP documentation, the score for this evaluation element has been changed from Partially Met to Met. The method for identifying the eligible population was completely defined.
2. Includes requirements for the length of a consumer's enrollment in the BHO.	☐ Met ☐ Partially Met ☐ Not Met ☑ NA	The enrollment criteria for the study population was not applicable to the PIP.

* "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*	3. Captures all consumers to whom the study question applies. NA is not applicable to this element for scoring.	☑ Met ☐ Partially Met ☐ Not Met ☐ NA	The method for identifying the eligible population did not completely capture all consumers to whom the study questions applied. The PIP needs to restate the study questions in order to meet CMS Protocols, and the codes used to identify consumers with an ED visit should also be included in the study population to ensure all consumers were captured. Re-review April 2008: After review of the resubmitted PIP documentation, the score for this evaluation element has been changed from Partially Met to Met. 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	2	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		
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 ☑ NA	Sampling techniques were not used in this PIP.
2. Identify the sample size.	☐ Met ☐ Partially Met ☐ Not Met ☑ NA	Sampling techniques were not used in this PIP.
3. Specify the confidence level.	☐ Met ☐ Partially Met ☐ Not Met ☑ NA	Sampling techniques were not used in this PIP.
4. Specify the acceptable margin of error.	☐ Met ☐ Partially Met ☐ Not Met ☑ NA	Sampling techniques were not used in this PIP.
C* 5. Ensure a representative sample of the eligible population.	☐ Met ☐ Partially Met ☐ Not Met ☑ NA	Sampling techniques were not used in this PIP.
6. Are in accordance with generally accepted principles of research design and statistical analysis.	☐ Met ☐ Partially Met ☐ Not Met ☑ NA	Sampling techniques were not used in this PIP.

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. NA is not applicable to this element for scoring.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.
	2. Clearly identified sources of data. NA is not applicable to this element for scoring.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.
	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.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.
	4. A timeline for the collection of baseline and remeasurement data. NA is not applicable to this element for scoring.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.
	5. Qualified staff and personnel to abstract manual data.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.
C*	6. A manual data collection tool that ensures consistent and accurate collection of data according to indicator specifications.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.
	7. A manual data collection tool that supports interrater reliability.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.
	8. Clear and concise written instructions for completing the manual data collection tool.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.
	9. An overview of the study in written instructions.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.

* "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.**		
10. Administrative data collection algorithms/flow charts that show activities in the production of indicators.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.
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 ☐ NA	Not assessed. The PIP had not progressed to the point of data collection for this year's validation cycle.

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.

HSAG HEALTH SERVICES ADVISORY GROUP

Section 4: **Colorado FY 07-08 PIP Validation Tool:**
Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment
for Access Behavioral Care

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.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of developing and implementing improvement strategies for this year's validation cycle.
2. System changes that are likely to induce permanent change.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of developing and implementing improvement strategies for this year's validation cycle.
3. Revised if the original interventions were not successful.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of developing and implementing improvement strategies for this year's validation cycle.
4. Standardized and monitored if interventions were successful.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of developing and implementing improvement strategies for this year's validation cycle.

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.

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.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data analysis and interpretation for this year's validation cycle.
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.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data analysis and interpretation for this year's validation cycle.
3. Identifies factors that threaten internal or external validity of findings.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data analysis and interpretation for this year's validation cycle.
4. Includes an interpretation of findings.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data analysis and interpretation for this year's validation cycle.
5. Is presented in a way that provides accurate, clear, and easily understood information.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data analysis and interpretation for this year's validation cycle.
6. Identifies initial measurement and remeasurement of study indicators.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data analysis and interpretation for this year's validation cycle.
7. Identifies statistical differences between initial measurement and remeasurement.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data analysis and interpretation for this year's validation cycle.
8. Identifies factors that affect the ability to compare initial measurement with remeasurement.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data analysis and interpretation for this year's validation cycle.

* "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		
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.**		
9. Includes interpretation of the extent to which the study was successful.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of data analysis and interpretation for this year's validation cycle.

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.

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 ☐ NA	Not assessed. The PIP had not progressed to the point of assessing for real improvement for this year's validation cycle.
2. There is documented improvement in processes or outcomes of care.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of assessing for real improvement for this year's validation cycle.
3. The improvement appears to be the result of planned intervention(s).	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of assessing for real improvement for this year's validation cycle.
4. There is statistical evidence that observed improvement is true improvement.	☐ Met ☐ Partially Met ☐ Not Met ☐ NA	Not assessed. The PIP had not progressed to the point of assessing for real improvement for this year's validation cycle.

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.

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 ☐ NA	Not assessed. Activity X is not assessed until the PIP has reported baseline and at least two annual remeasurement periods of data.

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.

Table 4-1—FY 07-08 PIP Validation Report Scores: Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment for Access Behavioral Care										
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	2	0	0	1	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		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**	**16**	**0**	**0**	**8**	**11**	**7**	**0**	**0**	**1**

Table 4-2—FY 07-08 PIP Validation Report Overall Scores: Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment 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 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 * [X] *Met*   ** [ ] *Partially Met*   *** [ ] *Not Met*

Summary statement on the validation findings:

Activities I through V 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 *ABC* submitted to HSAG for review, Appendix B is the CMS rationale for each activity, and Appendix C includes PIP definitions and explanations.

- Appendix A: **Access Behavioral Care's** PIP Study: *Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment*
- Appendix B: CMS Rationale by Activity
- Appendix C: Definitions and Explanations by Activity

Appendix A: PIP Summary Form:
Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment
for Access Behavioral Care

DEMOGRAPHIC INFORMATION

BHO Name or ID: **Access Behavioral Care**

Study Leader Name: Robert Bremer, MA, LPC, PhD   **Title:** Behavioral Health Quality Manager

Telephone Number: (720) 744-5240   **E-Mail Address:** robert.bremer@coaccess.com

Name of Project/Study: **COORDINATION OF CARE BETWEEN PSYCHIATRIC EMERGENCY SERVICES AND OUTPATIENT TREATMENT**

Type of Study: ☐ Clinical   ☒ Nonclinical

70,587 Number of Medicaid Consumers (as of Jan 2007)	**Section to be completed by HSAG** __X__ Year 1 Validation _____ Initial Submission __X__ Resubmission _____ Year 2 Validation _____ Initial Submission _____ Resubmission _____ Year 3 Validation _____ Initial Submission _____ Resubmission
TBD Number of Medicaid Consumers in Study	
	Section to be completed by HSAG _____ Baseline Assessment _____ Remeasurement 1 _____ Remeasurement 2 _____ Remeasurement 3

HSAG HEALTH SERVICES ADVISORY GROUP

Appendix A: **PIP Summary Form:**
Coordination of Care Between Psychiatric Emergency Services and
Outpatient Treatment
for **Access Behavioral Care**

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:

The 2003 President's New Freedom Commission on Mental Health (http://www.mentalhealthcommission.gov), the 2001 Institute of Medicine Report, Crossing the Quality Chasm, 2006 IOM report, Improving the Quality of Health Care for Mental and Substance-Use Conditions, as well as the 2003 report, The Status of Mental Health in Colorado (TriWest Group. (2003). The Status of Mental Health Care in Colorado. Mental Health Funders Collaborative: Denver, CO) all cite a fragmented delivery system. The 2001 IOM report states that clinicians and institutions should actively collaborate and communicate to ensure an appropriate exchange of information and coordination of care. One of the many consequences of a fragmented system is the increased use of psychiatric emergency services (PES). Overcrowded emergency department and stressed ED staff demands that patients be triaged and a disposition arranged as soon as possible. This often demands that outpatient providers are not brought into the treatment planning and disposition process. Anecdotally, outpatient providers in Denver report they often learn of a consumer's PES use from the consumer, not from the facility. The rising PES utilization is well documented in the peer reviewed literature.

For example, the per person rate for mental health related visits to an Emergency Department increased from 17.1 per 1000 in 1992 to 23.6 per 1000 in 2001 (p<.001) (Larkin, Claassen et al. 2005). Out of an estimated 4.3 million psychiatric-related emergency department visits in 2000, rates for adults with Medicaid (66/1000) were twice those of the uninsured (33/1000) and eight times higher than those with private insurance (8/1000) (Hazlett, McCarthy et al. 2004).

In addition to increased utilization of PES, the frequent use of these services is becoming widespread. Frequent visitors are estimated to account for one third of all visits to psychiatric emergency services(Ellison, Blum et al. 1986). Frequent use (6 or more visits in the 12 months prior to the index visit) of ED was related to grater utilization of inpatient and outpatient mental health services, general ED use, and crisis residential services. Frequent users of psychiatric EDs median financial charges for services were $16,200 greater (5.9 times) than those who infrequent used ED (Arfken, Zeman et al. 2004).

The problem of frequent PES utilization is exacerbated by the inappropriate use of these services. It has been estimated that 20-40% of all emergency psychiatric visits are unnecessary (Zeman and Arfken 2006).

Appendix A: PIP Summary Form:
Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment
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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).

Utilization of PES by ABC members is on the rise. In CY 2004, Per Thousand Member Per Year (PTMPY) visits were 16.10, compared to 18.07 in 2005 and 20.56 in 2006. Analysis of visits that did not result in an inpatient admission shows a similar picture. Data revealed a 64.6% increase in ED claims. ED visits for members not admitted to the hospital have also shown some increased (**Table 1**).

			Table 1. Total ED Visits from 2004 to 2006		
Time Period	**Member Months**	**Total ED Visits**	**Total PTMPY ED Visits**	**# ED Visits not Resulting in Admit**	**PTMPY ED Visits not Resulting in Admit**
Jan 2004 - Dec 2004	885,420	1,188	16.10	775	10.50
Jan 2005 - Dec 2005	894,406	1,347	18.07	912	12.24
Jan 2006 - Dec 2006	874,130	1,498	20.56	865	11.87

Examining the past 3 years of complete data also shows that between 58-68% of ED visits do not result on an inpatient admission. This represents an enormous opportunity to improve the coordination and delivery of outpatient treatment in an attempt to reduce visits to an already overcrowded and burdened psychiatric emergency service system in Denver and surrounding counties. Furthermore, our data demonstrates that a high proportion of members utilize the ED more than one time in a 90 day period (Table 2).

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	ED Events where Member has 2 ED visits within 90 days of each other	**Unique Members where has 2 or more ED visits within 90 days of each other**	**Total of Visits ED Amb Care where Member has 2 or more Visits within 90 days (Multiple)**
Table 2. ED Events and Members with 2 ED Visits and No Outpatient Claims Between ED Visits			
Time Period			
CY Jan 2004 - Dec 2004	113	69	182
CY Jan 2005 - Dec 2005	147	105	252
CY Jan 2006 - Dec 2006	165	97	262

We were also interested in the utilization of PES by age. Examination of historical data by age group shows that members ages 22-59 represent disproportionate utilization (**Table 3**).

Appendix A: PIP Summary Form:
Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment
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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).

Age Group	Member Months	Total ED Visits	Total PTMPY ED Visits	ED Visits w/ no admit	PTMPY Visits w/ no admit
Time Period *Jan 2004 - Dec 2004*					
Ages 00 to 05	217,336	18	0.99	13	0.72
Ages 06 to 11	148,747	110	8.87	48	3.87
Ages 12 to 17	115,370	238	24.76	121	12.59
Ages 18 to 21	37,265	96	30.91	68	21.90
Ages 22 to 59	195,897	681	41.72	497	30.44
Ages 60 and over	98,822	44	5.34	27	3.28
~Missing	71,983	1	0.17	1	0.17
TOTAL	885,420	1,188	16.10	775	10.50

Appendix A: PIP Summary Form:
Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment
for Access Behavioral Care

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).

Time Period *Jan 2005 - Dec 2005*					
Ages 00 to 05	217,309	11	0.61	7	0.39
Ages 06 to 11	145,071	103	8.52	52	4.30
Ages 12 to 17	116,584	271	27.89	150	15.44
Ages 18 to 21	37,366	113	36.29	81	26.01
Ages 22 to 59	206,783	780	45.26	568	32.96
Ages 60 and over	102,876	69	8.05	54	6.30
~Missing	68,417	0	0.00	0	0.00
TOTAL	894,406	1,347	18.07	912	12.24
Time Period *Jan 2006 - Dec 2006*					
Ages 00 to 05	208,175	11	0.63	8	0.46
Ages 06 to 11	141,585	131	11.10	60	5.09
Ages 12 to 17	112,308	336	35.90	152	16.24
Ages 18 to 21	35,660	106	35.67	62	20.86
Ages 22 to 59	206,275	849	49.39	544	31.65
Ages 60 and over	101,393	64	7.57	38	4.50
~Missing	68,734	1	0.17	1	0.17
TOTAL	874,130	1,498	20.56	865	11.87

Analysis of visits from 2004-2006 by facility show that between 50-59% of encounters occurred at 3 facilities; Denver Health, Children's Hospital, and The University of Colorado Hospital. When the top six facilities are included, this accounts for approximately 80% of all ED visits. Rates based on all visits and only those visits that did not result in an admission were similar. The intervention will initially focus on the top 3 facilities by volume and will be expanded to other facilities prioritize by volume. If collaboration cannot be developed by at least the top three facilities by volume, another high volume provider will be approached to participate.

Appendix A: **PIP Summary Form:**
Coordination of Care Between Psychiatric Emergency Services and
Outpatient Treatment
for **Access Behavioral Care**

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).

Table 4. High Volume ED Facilities, 2004-2006					
Provider ID and Name	**Member Months**	**Total ED Visits**	**Total PTMPY ED Visits**	**ED Visits w/ no admit**	**PTMPY Visits w/ no admit**
Time Period *Jan 2004 - Dec 2004*					
DENVER HEALTH MEDICAL CENTER	885,420	291	3.94	248	3.36
CHILDRENS HOSPITAL ASSOCIATION	885,420	205	2.78	73	0.99
UNIVERSITY OF COLORADO HOSPITAL	885,420	200	2.71	118	1.60
ST ANTHONY CENTRAL HOSPITAL	885,420	106	1.44	67	0.91
EXEMPLA ST JOSEPH HOSPITAL	885,420	72	0.98	51	0.69
MEDICAL CENTER OF AURORA	885,420	59	0.80	45	0.61
Time Period *Jan 2005 - Dec 2005*					
DENVER HEALTH MEDICAL CENTER	894,406	347	4.66	286	3.84
CHILDRENS HOSPITAL ASSOCIATION	894,406	226	3.03	107	1.44
UNIVERSITY OF COLORADO HOSPITAL	894,406	183	2.46	115	1.54
ST ANTHONY CENTRAL HOSPITAL	894,406	148	1.99	86	1.15
PORTERCARE ADVENTISTHLTH SYS	894,406	79	1.06	44	0.59
EXEMPLA ST JOSEPH HOSPITAL	894,406	79	1.06	62	0.83

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).

Time Period *Jan 2006 - Dec 2006*				
DENVER HEALTH MEDICAL CENTER	874,130	446	6.12	234	3.21
CHILDRENS HOSPITAL ASSOCIATION	874,130	247	3.39	115	1.58
UNIVERSITY OF COLORADO HOSPITAL	874,130	178	2.44	91	1.25
PORTERCARE ADVENTISTHLTH SYS	874,130	134	1.84	74	1.02
ST ANTHONY CENTRAL HOSPITAL	874,130	103	1.41	86	1.18
PSL MEDICAL CENTER	874,130	94	1.29	60	0.82

It should be noted that an analysis of preliminary data shows a decrease in visit for the Jan-Jun 2007. We believe this decrease is an artifact due to claims lag and/or missing claims.

Based on our analysis of data and review of the peer reviewed literature, it was determined that an intervention to reduce PES utilization and especially multiple visits to the ED was warranted. Thus, the objective of this performance improvement project is to reduce the use of unnecessary psychiatric emergency services through improved coordination of care between ED facilities and outpatient providers.

HSAG HEALTH SERVICES ADVISORY GROUP

Appendix A: **PIP Summary Form:**
Coordination of Care Between Psychiatric Emergency Services and
Outpatient Treatment
for **Access Behavioral Care**

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:
 	
The objectives of this performance improvement project are to:
    1. Identify members who are utilizing psychiatric emergency department (ED) services.
    2. Facilitate coordination between the ED facility and the member's outpatient mental health provider.
 	
The study questions:
    1. Do targeted interventions reduce the rate of emergency department visits/1000 members?
    2. Do targeted interventions reduce the rate of consumers returning to the emergency department?

HSAG HEALTH SERVICES ADVISORY GROUP

Appendix A: PIP Summary Form:
Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment
for **Access Behavioral Care**

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:** Measuring the total number of annualized per thousand members per year (PTMPY) emergency department visits not resulting in an inpatient admission will answer study question #1. Members utilizing visits to the ED without an admission to the hospital is a proxy for inadequate access to care or an inadequate level of outpatient care. We hypothesize that improved coordination between the emergency department facility and outpatient provider, facilitated by the health plan, will result in fewer total emergency department visits.
Numerator	**All enrolled members with an incurred ED claim within the measurement period <u>not</u> resulting in an inpatient admission.**
Denominator	**Total number of annualized per thousand members per year (PTMPY) calculated using the formula described below.**
First Measurement Period Dates	**CY 2007**
Benchmark	**Not available**
Source of Benchmark	**Not applicable**
Baseline Goal	**Establish baseline**

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Appendix A: PIP Summary Form:
**Coordination of Care Between Psychiatric Emergency Services and
Outpatient Treatment**
for **Access Behavioral Care**

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:** Measuring the rate of consumers returning to the emergency department within 3 months will answer study question #2. Reducing the number of members with multiple visits to the emergency department without an inpatient admission is also a proxy for inadequate access to care or an inadequate level of outpatient care. We hypothesize that improved coordination between the emergency department facility and outpatient provider, facilitated by the health plan, will result the number of members returning to the emergency department.
Numerator	**Any enrolled member returning for a second visit <u>not</u> resulting in an inpatient admission within 90 days from the index visit. Beginning 1/1/08, any ED visit will prompt a 90 day "look back".**
Denominator	**All enrolled members with an ED encounter within the measurement period <u>not</u> resulting in an inpatient admission. ED visits will be captured through monthly claim reports and weekly data logs provided by participating ED facilities. Each visit is counted as an index visit**
First Measurement Period Dates	**CY 2007**
Benchmark	**Not available**
Source of Benchmark	**Not applicable**
Baseline Goal	**Establish baseline**

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Appendix A: PIP Summary Form:
**Coordination of Care Between Psychiatric Emergency Services and
Outpatient Treatment**
for **Access Behavioral Care**

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:** None
Numerator	
Denominator	
First Measurement Period Dates	
Benchmark	
Source of Benchmark	
Baseline Goal	

Use this area for the provision of additional information:
Per Thousand Member Per Year (PTMPY) rates are calculate as follows:

$\qquad$ [AU / AM] * 1,000 Members = Utilization PTMPY; where:

$\qquad$ AU = [U / (EM/12 Months)]

$\qquad$ AM = Annualized Members = (MM / EM)

$\qquad$ U = Units of Utilization for Period (total # of paid ED claims)

$\qquad$ MM = Member Months

$\qquad$ EM = Elapsed Months

$\qquad$ PTMPY = Per Thousand Members Per Year

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:

Study Question #1: Do targeted interventions reduce the rate of emergency department visits/1000 members?
Study Indicator #1: The entire identified population will be used.

The study population of members will include all Access Behavioral Care members using psychiatric emergency services based on revenue codes 450-459 and 681-689. Criteria for continuous enrollment will not be applied.

Study Question #2: Do targeted interventions reduce the rate of consumers returning to the emergency department?
Study Indicator #2: The entire identified population will be used.

The study population of members will include all members identified in indicator #1 who return to the ED based on revenue codes 450-459 and 681-689 with a date of service within 90 days of the any previous ED visits. Each time a member has an ED encounter a query will run to find an ED visit within 90 days prior to that visit.

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 (*describe*)	Sampling Method (*describe*)
Not applicable. The entire population of members accessing any ED will be used.					

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 _____

HSAG HEALTH SERVICES ADVISORY GROUP

F. Activity VIb: Determine the data collection cycle.	Determine the 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. Complete only if needed.

Estimated percentage degree of administrative data completeness: _____ percent.

Supporting documentation:

HSAG HEALTH SERVICES ADVISORY GROUP

Appendix A: **PIP Summary Form:**
Coordination of Care Between Psychiatric Emergency Services and
Outpatient Treatment
for **Access Behavioral Care**

G. Activity VIIa: Include improvement strategies (interventions for improvement as a result of analysis). List chronologically the interventions that have had the most impact on improving the measure. Describe only the interventions and provide quantitative details whenever possible (e.g., "Hired four customer service representatives" as opposed to "Hired customer service representatives"). Do not include intervention planning activities.

Date Implemented (MMYY)	Check if Ongoing	Interventions	Barriers That Interventions Address

G. Activity VIIb: 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:**

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:

HSAG HEALTH SERVICES ADVISORY GROUP

Appendix A: **PIP Summary Form:**
Coordination of Care Between Psychiatric Emergency Services and
Outpatient Treatment
for **Access Behavioral Care**

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:
Coordination of Care Between Psychiatric Emergency Services and Outpatient Treatment
for Access Behavioral Care

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
	Baseline:					
	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
	Baseline:					
	Remeasurement 1					
	Remeasurement 2					
	Remeasurement 3					
	Remeasurement 4					
	Remeasurement 5					

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
	Baseline:					
	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.

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:

References

Arfken, C. L., Zeman, L. L., Yeager, L., White, A., Mischel, E., & Amirsadri, A. (2004). Case-Control Study of Frequent Visitors to an Urban Psychiatric Emergency Service. *Psychiatr Serv, 55*(3), 295-301.

Ellison, J. M., Blum, N., & Barsky, A. J. (1986). Repeat visitors in the psychiatric emergency service: a critical review of the data. *Hosp Community Psychiatry, 37*(1), 37-41.

Hazlett, S. B., McCarthy, M. L., Londner, M. S., & Onyike, C. U. (2004). Epidemiology of Adult Psychiatric Visits to U.S. Emergency Departments. *Acad Emerg Med, 11*(2), 193-195.

Larkin, G. L., Claassen, C. A., Emond, J. A., Pelletier, A. J., & Camargo, C. A. (2005). Trends in U.S. Emergency Department Visits for Mental Health Conditions, 1992 to 2001. *Psychiatr Serv, 56*(6), 671-677.

Zeman, L., & Arfken, C. L. (2006). Decreasing Unnecessary Care in a Psychiatric Emergency Service. *Psychiatr Serv, 57*(1), 137-138.

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).

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	◆ 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 population 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 I: "Choose the Selected Study Topic" in the PIP Summary Form.
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 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	◆ 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®[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	◆ 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	◆ 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	◆ Indicates the size of the sample to be used.
Representative sample	◆ Refers to the sample reflecting 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).

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[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	◆ 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 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	◆ 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 for 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	◆ 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	◆ 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	◆ 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	◆ 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, 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	◆ 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	◆ 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	◆ 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.