

Colorado Medicaid  
Community Mental Health Services Program

# FY 07–08 PIP VALIDATION REPORT

Increase NBH Center Provider  
Communication/Coordination with Primary  
Care Physicians and Other Health Providers

*for*  
Northeast Behavioral Health, LLC

May 2008

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



1600 East Northern Avenue, Suite 100 • Phoenix, AZ 85020  
Phone 602.264.6382 • Fax 602.241.0757

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## Overview

The Balanced Budget Act of 1997 (BBA), Public Law 105-33, requires that states conduct an annual evaluation of their managed care organizations (MCOs) and prepaid inpatient health plans (PIHPs) to determine the MCOs' and PIHPs' compliance with federal regulations and quality improvement standards. According to the BBA, the quality of health care delivered to Medicaid consumers in MCOs and PIHPs must be tracked, analyzed, and reported annually. The Colorado Department of Health Care Policy & Financing (the Department) has contractual requirements with each MCO and behavioral health organization (BHO) to conduct and submit performance improvement projects (PIPs) annually.

As one of the mandatory external quality review activities under the BBA, the Department is required to validate the PIPs. To meet this validation requirement, the Department contracted with Health Services Advisory Group, Inc. (HSAG), as an external quality review organization. The primary objective of the PIP validation is to determine compliance with requirements set forth in the Code of Federal Regulations (CFR), at 42 CFR 438.240(b)(1), including:

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

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

## Summary of Study

**Northeast Behavioral Health, LLC (NBH)** evaluated the level of communication of care occurring between mental health providers and primary care physicians (PCPs). This study topic was chosen to determine the coordination of care between **NBH** mental health centers and PCPs for the consumers they both serve. In 2002, **NBH** conducted a survey of PCPs throughout the 12-county area served by the centers. One important finding was that the PCPs were concerned they were not receiving feedback from the centers when a consumer was referred. Two of the three **NBH** centers emphasized the need for a follow-up letter to a PCP, but this was not a requirement. The third **NBH** center did require that a letter be sent to the consumer's PCP after a mental health intake was completed.

This year, **NBH** reported baseline and two remeasurement periods. The PIP demonstrated sustained improvement over comparable time periods. The decline in Centennial Mental Health Center's (Centennial's) rate for the second remeasurement period was not statistically significant, and the rate still remained above the baseline rate and industry benchmark.

## Study Topic

**NBH** chose *Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers* as its nonclinical PIP topic. This topic addressed CMS' requirement related to quality of, and access to, care, i.e., the coordination of services between **NBH** centers and PCPs. The study reflected high-risk conditions since a significant number of consumers had co-occurring conditions.

## Study Methodology

Chart reviews were conducted to document the presence of a letter demonstrating coordination of care between mental and physical health providers. The baseline study population was a sample of the entire Medicaid population of open cases at all three provider centers. The consumers had to be enrolled as Medicaid recipients during the baseline period of September 1, 2005, to December 15, 2005. Length of enrollment was not an exclusionary criterion for the baseline period.

During the remeasurement periods, only newly admitted Medicaid consumers were eligible for the study. Consumers who refused permission for the admitting, or subsequent, therapist to contact their primary care physician or other medical provider were excluded.

**NBH's** PIP had two study indicators for two locations:

- ◆ “The study indicator for the Centennial Mental Health Center was the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers' charts) after the consumers received an intake for mental health services from the Center.” There was a requirement that the intake therapist ask permission to send a letter to the consumer's PCP.
- ◆ “The study indicator for the North Range and Larimer Centers was the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers' charts) after the consumers received an intake for mental health services from one of the **NBH** provider Centers.” These two **NBH** centers did not have a requirement to send a letter to the PCP/other health provider.

Remeasurement and baseline methodologies were not the same; the second remeasurement methodology was changed to improve the overall quality of the study. The issues were discussed in the PIP and justified the need for changes.

### Study Results

NBH completed baseline and two remeasurement periods. The PIP demonstrated sustained improvement over comparable time periods. The decline in Centennial’s rate for the second remeasurement period was not statistically significant, and the rate still remained above the baseline rate and industry benchmark. Table 1-1 illustrates results for both study indicators.

Table 1-1—Study Indicator Results			
Study Indicators	Baseline Results	Remeasurement 1 Results	Remeasurement 2 Results
	September 1, 2005–December 15, 2005	March 1, 2006–December 31, 2006	February 1, 2007–September 30, 2007
<b>Study Indicator 1:</b> <u>Centennial Mental Health Center</u> —the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from the Center.	62.4%	90.6%	80%
<b>Study Indicator 2:</b> <u>North Range Center</u> —the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from the provider Center.	0%	70%	74%
<b>Study Indicator 2:</b> <u>Larimer Center</u> —the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from the provider Center.	2%	62%	85.6%

### 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, 10 activities with a total of 53 elements were validated. Of this number:
  - 49 evaluation elements were *Met*.
  - 0 evaluation elements were *Partially Met*.
  - 0 evaluation elements were *Not Met*.
  - 4 evaluation elements were *Not Applicable (NA)*.
- ◆ The total number of critical elements that were evaluated equaled 11. Of this number:
  - 11 critical elements were *Met*.
  - 0 critical elements were *Partially Met*.
  - 0 critical elements were *Not Met*.
  - 0 critical elements were *NA*.

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

## Conclusions

For the fiscal year (FY) 07–08 validation cycle, all 10 activities were reviewed. The study addressed quality of, and access to, care through the coordination of care and services between mental health providers and PCP/health care providers. **NBH** provided baseline and two remeasurement cycles of data. The rate of communication between all three **NBH** centers and their consumers' primary care providers improved significantly from baseline to the first remeasurement. In the second remeasurement period, the decline in Centennial's rate was not statistically significant, and the rate still remained above the baseline rate and industry benchmark.

## Requirements

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

## Recommendations

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

## Comparison of Years 1 Through 3

In the first year, **NBH** completed Activities I through VII for the FY 05–06 validation cycle because, at the time of the submission, **NBH** had only completed a baseline measurement. **NBH** received an overall score of 97 percent, a critical element score of 100 percent, and a *Met* validation status.

For the FY 06–07 validation cycle, **NBH** progressed through Activity IX. **NBH** collected baseline and the first remeasurement, and found that the rate of communication between all three **NBH** centers and their consumers' primary care providers improved significantly. All centers surpassed the benchmark of 62.4 percent. **NBH** received an overall score of 100 percent, a critical element score of 100 percent, and a *Met* validation status.

For the FY 07–08 validation cycle, **NBH** progressed through Activity X. Statistical evidence demonstrated that true improvement was achieved. The methodology for the second remeasurement was changed as follows in order to improve the overall quality of the study:

- ◆ A discrepancy was identified in the sampling methodology; therefore, the sampling methodology was updated to reflect what was occurring during the first remeasurement period.
- ◆ The sample sizes for the second remeasurement period were proportionally readjusted by the provider center.
- ◆ The data analysis was changed to reflect that the sample sizes for each provider center were independent. For the second remeasurement period, the data from each provider center were analyzed separately.

Although Centennial's rate for the second remeasurement period declined, it was not statistically significant, and the rate still remained well above baseline and industry benchmark. As in the previous validation cycle, **NBH** received an overall score of 100 percent, a critical element score of 100 percent, and a *Met* validation status.

## 2. Scoring Methodology

for Northeast Behavioral Health, LLC

Validating PIPs involves a review of the following 10 activities:

- ◆ Activity I. Appropriate Study Topic
- ◆ Activity II. Clearly Defined, Answerable Study Question
- ◆ Activity III. Clearly Defined Study Indicator(s)
- ◆ Activity IV. Use a Representative and Generalizable Study Population
- ◆ Activity V. Valid Sampling Techniques (If Sampling Was Used)
- ◆ Activity VI. Accurate/Complete Data Collection
- ◆ Activity VII. Appropriate Improvement Strategies
- ◆ Activity VIII. Sufficient Data Analysis and Interpretation
- ◆ Activity IX. Real Improvement Achieved
- ◆ Activity X. Sustained Improvement Achieved

All PIPs are scored as follows:

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



## PIP Scores

For this PIP, HSAG reviewed all Activities. Table 2-1 and Table 2-2 show NBH’s scores based on HSAG’s PIP evaluation of *Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers*. Each activity has been reviewed and scored according to HSAG’s validation methodology

**Table 2-1—FY 07–08 Performance Improvement Project Scores  
for Increase NBH Center Provider Communication/Coordination with  
Primary Care Physicians and Other Health Providers  
for Northeast Behavioral Health, LLC**

Review Activity	Total Possible Evaluation Elements (Including Critical Elements)	Total Met	Total Partially Met	Total Not Met	Total NA	Total Possible Critical Elements	Total Critical Elements Met	Total Critical Elements Partially Met	Total Critical Elements Not Met	Total Critical Elements NA
I. Appropriate Study Topic	6	6	0	0	0	1	1	0	0	0
II. Clearly Defined, Answerable Study Question	2	2	0	0	0	1	1	0	0	0
III. Clearly Defined Study Indicator(s)	7	5	0	0	2	3	3	0	0	0
IV. Use a Representative and Generalizable Study Population	3	3	0	0	0	2	2	0	0	0
V. Valid Sampling Techniques	6	6	0	0	0	1	1	0	0	0
VI. Accurate/Complete Data Collection	11	9	0	0	2	1	1	0	0	0
VII. Appropriate Improvement Strategies	4	4	0	0	0	No Critical Elements				
VIII. Sufficient Data Analysis and Interpretation	9	9	0	0	0	2	2	0	0	0
IX. Real Improvement Achieved	4	4	0	0	0	No Critical Elements				
X. Sustained Improvement Achieved	1	1	0	0	0	No Critical Elements				
<b>Totals for All Activities</b>	<b>53</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>11</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table 2-2—FY 07–08 Performance Improvement Project Overall Score  
for Increase NBH Center Provider Communication/Coordination with  
Primary Care Physicians and Other Health Providers  
for Northeast Behavioral Health, LLC**

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

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

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

\*\*\* Met equals confidence/high confidence that the PIP was valid.

Partially Met equals low confidence that the PIP was valid.

Not Met equals reported PIP results that were not 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 an **NBH** PIP, which evaluated the quality of, and access to, care through the coordination of services between **NBH** mental health centers and PCPs. **NBH** changed the study methodology for the FY 07–08 submission in order to improve the overall quality of the study. The study continued with the same study indicators. The changes that occurred involved the sampling method and data analysis.

#### **Activity I. Appropriate Study Topic**

##### **Study Topic**

**NBH** continued its nonclinical PIP topic, titled *Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers*. This topic addressed CMS' requirement related to quality of, and access to, care, i.e., the coordination of services between **NBH** centers and PCPs. The study reflected high-risk conditions since a significant number of consumers had co-occurring conditions.

##### **Finding(s)**

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

##### **Strength(s)**

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

##### **Requirement(s) (for Critical Elements)**

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

##### **Recommendation(s) (for Noncritical Elements)**

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

## Activity II. Clearly Defined, Answerable Study Question

### Study Question(s)

The study question presented by **NBH** was: “Will the implementation of formal policies and procedures to require letters to be sent to **NBH** consumers’ Primary Care Physicians and other health care providers after the completion of an intake, increase the frequency of such letters being sent for the purpose of informing PCPs that their patients are receiving mental health services?”

### Finding(s)

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

### Strength(s)

The study question was answerable and was stated in clear, simple terms, maintaining the focus of the study.

### 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)

**NBH**’s PIP had two study indicators for two locations:

- ◆ “The study indicator for the Centennial Mental Health Center was the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from the Center.” There was a requirement that the intake therapist ask permission to send a letter to the consumer’s PCP.
- ◆ “The study indicator for the North Range and Larimer Centers was the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from one of the **NBH** provider Centers.” These two **NBH** centers did not have a requirement to send a letter to the PCP/other health provider.

**Finding(s)**

Five of the seven evaluation elements were *Met* for this activity, including three critical elements. Two elements were *Not Applicable* because the study indicators were not nationally recognized measures and were not based on current, evidence-based practice guidelines, pertinent peer review literature, or consensus expert panels.

**Strength(s)**

The study indicators were well-defined, objective, measurable, and allowed for the study question to be answered. The indicators measured changes in valid process alternatives.

**Requirement(s) (for Critical Elements)**

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

**Recommendation(s) (for Noncritical Elements)**

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

**Activity IV. Use a Representative and Generalizable Study Population****Study Population**

The baseline study population was a sample of the entire Medicaid population of open cases at all three provider centers. The consumers had to be enrolled as Medicaid recipients during the baseline period of September 1, 2005, to December 15, 2005. Length of enrollment was not an exclusionary criterion for the baseline period.

During the remeasurement periods, only newly admitted Medicaid consumers were eligible for the study. Consumers who refused permission for the admitting, or subsequent therapist, to contact their primary care physician or other medical provider were excluded.

**Finding(s)**

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

**Strength(s)**

The method for identifying the eligible populations 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)**

**NBH** used a systematic sampling approach for baseline in which every fifth eligible case was selected. During remeasurement, the sampling method was changed to every third eligible case.

### **Finding(s)**

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

### **Strength(s)**

The true or estimated frequency of occurrence was considered in the sampling equation. The sample size was provided and the confidence level was reported as 95 percent, with an acceptable margin of error reported as +/-5 percent. The sampling technique ensured a representative sample, and was in accordance with generally accepted principles of research design and statistical analysis.

### **Requirement(s) (for Critical Elements)**

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

### **Recommendation(s) (for Noncritical Elements)**

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

## **Activity VI. Accurate/Complete Data Collection**

### **Data Collection**

**NBH** used medical record abstraction to collect data elements for the study. **NBH** expected three pieces of evidence to be present in the consumer's record to constitute evidence that coordination/communication of care had occurred. **NBH** discovered that, in some cases, not all three pieces of evidence were present in the record, even though communication with the PCP or other health care provider had occurred. **NBH** made a determination regarding what, at a minimum, constituted communication/coordination with the consumer's PCP or other health care provider, and

it developed four criteria. **NBH** deemed that communication/coordination with the consumer's PCP or other health care provider had occurred if one of the four following criteria were met:

1. The presence of a copy of the medical provider notification form (MPNF), release of information, and a copy of a letter to the PCP in the consumer's chart.
2. The presence of a copy of the MPNF and release of information in the consumer's chart.
3. The presence of a copy of the letter and release of information in the consumer's chart.
4. The presence of the original MPNF, a release of information, and proof of faxing the MPNF in the consumer's chart.

### **Finding(s)**

Nine of the 11 evaluation elements were *Met* for this activity, including one critical element. Two elements were *Not Applicable* because administrative data collection was not used for this PIP.

### **Strength(s)**

The data elements collected were clearly identified, and a systematic process with a timeline for baseline and remeasurement data collection was provided in the PIP documentation. The PIP included documentation on the relevant education, experience, and training for all manual data collection personnel, and the manual data collection tool ensured consistent and accurate data collection.

### **Requirement(s) (for Critical Elements)**

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

### **Recommendation(s) (for Noncritical Elements)**

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

## **Activity VII. Appropriate Improvement Strategies**

### **Improvement Strategies**

**NBH's** improvement strategies were based on causes/barriers identified through data analysis and quality improvement processes. The improvement strategies remained the same for this year's submission because they have been proven to be successful. **NBH** determined that every consumer should be asked for permission to submit a letter to his or her PCP or other health care provider. One intervention developed by **NBH** was to require that intake therapists ask permission from consumers to contact their PCPs or other health care providers. For the first remeasurement, **NBH** developed the MPNF form to communicate with PCPs or other health care providers. For consumers who gave permission to contact their PCPs, staff members were required to obtain a signed release of information and send the MPNF and/or letter to the PCP or other health care provider.

**Finding(s)**

All evaluation elements for this activity were *Met*.

**Strength(s)**

Interventions were standardized and monitored, and improvement strategies were based on causal/barrier analysis. System changes noted in the PIP were likely to induce permanent changes.

**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 VIII. Sufficient Data Analysis and Interpretation**

**Data Analysis and Interpretation**

**NBH** completed data analysis for baseline and the first and second remeasurements for the two study indicators. Table 3-1 illustrates results for both study indicators.

Table 3-1—Study Indicator Results			
Study Indicators	Baseline Results	Remeasurement 1 Results	Remeasurement 2 Results
	September 1, 2005– December 15, 2005	March 1, 2006– December 31, 2006	February 1, 2007– September 30, 2007
<p><b>Study Indicator 1:</b> <u>Centennial Mental Health Center</u>—the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from the Center.</p>	62.4%	90.6%	80%

**Table 3-1—Study Indicator Results**

Study Indicators	Baseline Results	Remeasurement 1 Results	Remeasurement 2 Results
	September 1, 2005–December 15, 2005	March 1, 2006–December 31, 2006	February 1, 2007–September 30, 2007
<b>Study Indicator 2:</b> <u>North Range Center</u> —the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from the provider Center.	0%	70%	74%
<b>Study Indicator 2:</b> <u>Larimer Center</u> —the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from the provider Center.	2%	62%	85.6%

**Finding(s)**

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

**Strength(s)**

**NBH** conducted Chi-square testing to determine whether differences in the rates were significant between measurement periods. The data findings were presented in an accurate, clear, and easily understood format. The PIP identified factors that threatened the internal and external validity of the findings. Factors that affected the ability to compare measurement periods were also discussed in the PIP.

**Requirement(s) (for Critical Elements)**

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

**Recommendation(s) (for Noncritical Elements)**

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



**Activity IX. Real Improvement Achieved****Real Improvement Achieved**

Although Centennial's rate for the second remeasurement period declined, it was well above baseline, and all the other study indicators demonstrated improvement in the processes of care.

**Finding(s)**

All evaluation elements for this activity were *Met*.

**Strength(s)**

The improvement noted in the PIP appeared to be the result of planned interventions, and the statistical evidence that demonstrated improvement was true improvement.

**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 X. Sustained Improvement Achieved****Sustained Improvement Achieved**

The PIP demonstrated sustained improvement over comparable time periods. The decline in Centennial's rate for the second remeasurement period was not statistically significant, and the rate still remained above the baseline rate and industry benchmark.

**Finding(s)**

The evaluation element for this activity was *Met*.

**Strength(s)**

The PIP demonstrated sustained improvement over comparable time periods.

**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.

**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers  
for Northeast Behavioral Health, LLC**

**DEMOGRAPHIC INFORMATION**

Health Plan Name:	Northeast Behavioral Health, LLC		
Study Leader Name:	Julie A. Kellaway	Title:	Director of Quality Improvement
Phone Number:	(970) 347-2315	E-mail Address:	julie.kellaway@northeastbho.org
Name of Project/Study:	Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers		
Type of Study:	Nonclinical		
Date of Study:	9/1/2005 to 9/30/2007		
Type of Delivery System:	BHO	Number of Medicaid Consumers in BHO:	5,656
		Number of Medicaid Consumers in Study:	327
Year 3 Validation:	Resubmission		
Results:	Remeasurement 2		

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS		SCORING	COMMENTS
I.	<b>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.</b>		
	1. Reflects high-volume or high-risk conditions (or was selected by the State).  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study topic reflected high-risk conditions.
	2. Is selected following collection and analysis of data.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study topic was selected following the collection and analysis of 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.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> 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.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	All eligible consumers who met the study criteria were included.
	5. Does not exclude consumers with special health care needs.  The score for this element will be Met or Not Met.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Consumers with special health care needs were not excluded.
C*	6. Has the potential to affect consumer health, functional status, or satisfaction.  The score for this element will be Met or Not Met.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study topic 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.

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS		SCORING	COMMENTS
II.	<b>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.</b>		
	1. States the problem to be studied in simple terms. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study question was stated in clear, simple terms and maintained the focus of the study.
C*	2. Is answerable. NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study question was answerable.

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

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

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

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS		SCORING	COMMENTS
<b>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.</b>			
C*	1. Are well-defined, objective, and measurable.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study indicators were well-defined, objective, and measurable.
	2. Are based on current, evidence-based practice guidelines, pertinent peer review literature, or consensus expert panels.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> NA	The study indicators were not based on current, evidence-based practice guidelines, pertinent peer review literature, or consensus expert panels.
C*	3. Allow for the study question to be answered.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study indicators allowed for the study question to be answered.
	4. Measure changes (outcomes) in health or functional status, consumer satisfaction, or valid process alternatives.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The study indicators measured changes (outcomes) in valid process alternatives.
C*	5. Have available data that can be collected on each indicator.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	There were data available to be collected on each study indicator.
	6. Are nationally recognized measures such as HEDIS specifications, when appropriate.  The scoring for this element will be Met or NA.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> NA	The study indicators were not nationally recognized measures.
	7. Includes the basis on which the indicator(s) was adopted, if internally developed.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The basis on which the study indicators were developed was provided.

Results for Activity III				
# of Elements				
Critical Elements**	Met	Partially Met	Not Met	Not Applicable
3	5	0	0	2

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

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

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS		SCORING	COMMENTS
IV.	<b>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.</b>		
C*	1. Is accurately and completely defined.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The method for identifying the eligible population was completely and accurately defined.
	2. Includes requirements for the length of a consumer's enrollment in the BHO.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The method for identifying the eligible population included the required length for consumer enrollment in the BHO.
C*	3. Captures all consumers to whom the study question applies.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The method for identifying the eligible population captured all consumers to whom the study question applied.

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

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

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

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS	SCORING	COMMENTS
<b>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.</b>		
1. Consider and specify the true or estimated frequency of occurrence.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The true or estimated frequency of occurrence was considered in the sampling equation.
2. Identify the sample size.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The sample size was provided.
3. Specify the confidence level.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The confidence level was reported as 95 percent.
4. Specify the acceptable margin of error.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The acceptable margin or error was reported as +/- 5 percent.
C* 5. Ensure a representative sample of the eligible population.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The sampling technique used ensured a representative sample of the eligible population.
6. Are in accordance with generally accepted principles of research design and statistical analysis.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The sampling technique used was in accordance with generally accepted principles of research design and statistical analysis.

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

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

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



*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS	SCORING	COMMENTS
<b>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.</b>		
1. Clearly defined data elements to be collected.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The data elements collected were clearly identified.
2. Clearly identified sources of data.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The source of data collection was specified as manual data collection from outpatient medical records.
3. A clearly defined and systematic process for collecting data that includes how baseline and remeasurement data will be collected.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	A defined and systematic process for the collection of baseline and remeasurement data was provided in the PIP documentation.
4. A timeline for the collection of baseline and remeasurement data.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	A timeline for the collection of both baseline and remeasurement data was provided.
5. Qualified staff and personnel to abstract manual data.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The PIP included documentation on the relevant education, experience, and training for all manual data collection personnel to ensure that only qualified staff members were involved with medical record abstraction.
C* 6. A manual data collection tool that ensures consistent and accurate collection of data according to indicator specifications.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	A manual data collection tool that ensured consistent and accurate data collection was included.
7. A manual data collection tool that supports interrater reliability.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	A manual data collection tool that supported the interrater reliability process was included.
8. Clear and concise written instructions for completing the manual data collection tool.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Clear, concise written instructions were included with the manual data collection tool.

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

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

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS	SCORING	COMMENTS
<b>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.</b>		
9. An overview of the study in written instructions.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	An overview of the study was included in the written instructions for the manual data collection tool.
10. Administrative data collection algorithms/flow charts that show activities in the production of indicators.	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> NA	Administrative data collection was not used for this PIP.
11. An estimated degree of administrative data completeness. Met = 80 - 100% Partially Met = 50 - 79% Not Met = <50% or not provided	<input type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input checked="" type="checkbox"/> NA	Administrative data collection was not used for this PIP.

Results for Activity VI				
# of Elements				
Critical Elements**	Met	Partially Met	Not Met	Not Applicable
1	9	0	0	2

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

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

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS	SCORING	COMMENTS
<b>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.</b>		
1. Related to causes/barriers identified through data analysis and quality improvement processes.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The improvement strategy was based on causes/barriers identified through data analysis and quality improvement processes.
2. System changes that are likely to induce permanent change.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The system change noted in the PIP were likely to induce permanent change.
3. Revised if the original interventions were not successful.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	It was noted that for this year's submission, Centennial demonstrated a decline in results from the first remeasurement period to the second remeasurement period, while North Range demonstrated an increase (although it was not statistically significant). The PIP reported that the intervention remained the same. When improvement is not seen across all study indicators, a second causal/barrier analysis should be performed to identify any new barriers, and revisions to interventions should be made.  Re-review March 2008: After review of the resubmitted PIP documentation, the score for this evaluation element has been changed from Partially Met to Met. A second causal/barrier analysis was performed with barriers and the improvement strategy documented.
4. Standardized and monitored if interventions were successful.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The intervention was standardized and monitored for ongoing success.

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

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS	SCORING	COMMENTS
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Results for Activity VII				
# of Elements				
Critical Elements**	Met	Partially Met	Not Met	Not Applicable
0	4	0	0	0

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

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS	SCORING	COMMENTS
<b>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.</b>		
C* 1. Is conducted according to the data analysis plan in the study design.  NA is not applicable to this element for scoring.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The data analysis was conducted according to the analysis plan in the PIP.
C* 2. Allows for the generalization of results to the study population if a sample was selected.  If no sampling was performed, this element is scored NA.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The statistical techniques used supported generalization of the results to the study population.
3. Identifies factors that threaten internal or external validity of findings.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The PIP identified factors that threatened the internal and external validity of the findings.
4. Includes an interpretation of findings.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	An interpretation of the findings was provided in the PIP documentation.
5. Is presented in a way that provides accurate, clear, and easily understood information.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The data findings were presented in an accurate, clear, and easily understood format.
6. Identifies initial measurement and remeasurement of study indicators.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Initial measurement and remeasurement were identified for each study indicator.
7. Identifies statistical differences between initial measurement and remeasurement.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Statistical testing was performed and statistical differences between initial measurement and remeasurements were discussed.
8. Identifies factors that affect the ability to compare initial measurement with remeasurement.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Factors that affected the ability to compare measurement periods were discussed in the PIP.
9. Includes interpretation of the extent to which the study was successful.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	An interpretation of the extent to which the study was successful was provided in 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.

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS		SCORING			COMMENTS
<b>Results for Activity VIII</b>					
<b># of Elements</b>					
<b>Critical Elements**</b>	<b>Met</b>	<b>Partially Met</b>	<b>Not Met</b>	<b>Not Applicable</b>	
2	9	0	0		

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

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



*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS	SCORING	COMMENTS
<b>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.</b>		
1. Remeasurement methodology is the same as baseline methodology.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Remeasurement and baseline methodologies were not the same; however, the issue was discussed to justify the needed changes in the remeasurement methodology.
2. There is documented improvement in processes or outcomes of care.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	There was a noted decline in Centennial's rate for the second remeasurement period; however, the results remained well above the baseline. The other study indicators demonstrated improvement in processes of care.
3. The improvement appears to be the result of planned intervention(s).	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	Though there was a noted decline in Centennial's rate for the second remeasurement period; however, the results remained well above the baseline. The improvement noted in the PIP appeared to be result of the planned interventions.
4. There is statistical evidence that observed improvement is true improvement.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	There was statistical evidence that demonstrated improvement was true improvement.

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

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



*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

EVALUATION ELEMENTS	SCORING	COMMENTS
<b>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.</b>		
1. Repeated measurements over comparable time periods demonstrate sustained improvement, or that a decline in improvement is not statistically significant.	<input checked="" type="checkbox"/> Met <input type="checkbox"/> Partially Met <input type="checkbox"/> Not Met <input type="checkbox"/> NA	The PIP demonstrated sustained improvement over comparable time periods. The decline in Centennial's rates for the second remeasurement period was not statistically significant and still remained above the baseline rate and industry benchmark.

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

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



*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers**  
**for Northeast Behavioral Health, LLC**

**Table 4-1—FY 07-08 PIP Validation Report Scores:**

<b>Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers for Northeast Behavioral Health, LLC</b>											
<b>Review Activity</b>		<b>Total Possible Evaluation Elements (Including Critical Elements)</b>	<b>Total Met</b>	<b>Total Partially Met</b>	<b>Total Not Met</b>	<b>Total NA</b>	<b>Total Possible Critical Elements</b>	<b>Total Critical Elements Met</b>	<b>Total Critical Elements Partially Met</b>	<b>Total Critical Elements Not Met</b>	<b>Total Critical Elements NA</b>
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	5	0	0	2	3	3	0	0	0
IV.	Use a representative and generalizable study population	3	3	0	0	0	2	2	0	0	0
V.	Valid Sampling Techniques	6	6	0	0	0	1	1	0	0	0
VI.	Accurate/Complete Data Collection	11	9	0	0	2	1	1	0	0	0
VII.	Appropriate Improvement Strategies	4	4	0	0	0	0	No Critical Elements			
VIII.	Sufficient Data Analysis and Interpretation	9	9	0	0	0	2	2	0	0	0
IX.	Real Improvement Achieved	4	4	0	0	0	0	No Critical Elements			
X.	Sustained Improvement Achieved	1	1	0	0	0	0	No Critical Elements			
<b>Totals for All Activities</b>		<b>53</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>11</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table 4-2—FY 07-08 PIP Validation Report Overall Scores:**

<b>Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers for Northeast Behavioral Health, LLC</b>	
<b>Percentage Score of Evaluation Elements Met*</b>	<b>100%</b>
<b>Percentage Score of Critical Elements Met**</b>	<b>100%</b>
<b>Validation Status***</b>	<b>Met</b>

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

*Section 4: Colorado FY 07-08 PIP Validation Tool:*  
**Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers  
for Northeast Behavioral Health, LLC**

**EVALUATION OF THE OVERALL VALIDITY AND RELIABILITY OF PIP RESULTS**

HSAG assessed the implications of the study's findings on the likely validity and reliability of the results based on CMS Protocols. HSAG also assessed whether the State should have confidence in the reported PIP findings.

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

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

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

**Summary of Aggregate Validation Findings**

\*  **Met**

\*\*  **Partially Met**

\*\*\*  **Not Met**

**Summary statement on the validation findings:**

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

- ◆ Appendix A: **Northeast Behavioral Health, LLC's PIP Study: *Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers***
- ◆ Appendix B: CMS Rationale by Activity
- ◆ Appendix C: Definitions and Explanations by Activity



**Appendix A: PIP Summary Form:  
Increase NBH Center Provider Communication/Coordination with  
Primary Care Physicians and Other Health Providers  
for Northeast Behavioral Health, LLC**

**DEMOGRAPHIC INFORMATION**

BHO Name or ID: Northeast Behavioral Health, LLC

Study Leader Name: Julie A. Kellaway

Title: Director of Quality Improvement

Telephone Number: 970-347-2315

E-Mail Address: julie.kellaway@northeastbho.org

Name of Project/Study: <Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers>

Type of Study:  Clinical

Nonclinical

5,656 Number of Medicaid Consumers

327 Number of Medicaid Consumers in Study

**Section to be completed by HSAG**

\_\_\_\_ Year 1 Validation \_\_\_\_ Initial Submission \_\_\_\_ Resubmission

\_\_\_\_ Year 2 Validation \_\_\_\_ Initial Submission \_\_\_\_ Resubmission

X Year 3 Validation X Initial Submission \_\_\_\_ Resubmission

**Section to be completed by HSAG**

\_\_\_\_ Baseline Assessment \_\_\_\_ Remeasurement 1

X Remeasurement 2 \_\_\_\_ Remeasurement 3

## **Appendix A: PIP Summary Form: Increase NBH Center Provider Communication/Coordination with Primary Care Physicians and Other Health Providers for Northeast Behavioral Health, LLC**

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

### **Study topic:**

**Study Topic:** The study topic is the relationship between the therapists at the Northeast Behavioral Health (NBH) provider Centers and the Primary Care Physicians (PCPs) and other healthcare providers of the consumers they both serve. The measure is the frequency with which letters are sent to PCPs and other healthcare providers when their patients are admitted for services at any one of the three NBH Centers. In an article in Behavioral Healthcare Tomorrow (April 2004), William Kanapaux cited the importance of a close working relationship between mental health care providers and primary care medical services when he described the promise of co-located behavioral and primary care services in the State of Tennessee.

The management and clinical staff of NBH are keenly aware of the importance of a close working relationship between the mental health Centers and primary care physicians. North Range Behavioral Health has its Multicultural Service Program co-located at a medical facility in Greeley. Other provider Centers are working with local health clinics to coordinate services and, when possible, place Center therapists at these clinics. The importance of this project was emphasized to administrative and clinical staff in informal memos as well as in discussions among the programs throughout the three NBH Centers.

In 2002, NBH conducted a survey of primary care physicians throughout the 12 county area served by the Centers. One of the main findings of that study was that physicians throughout the area were concerned that when they referred patients to mental health Centers they obtained no feedback. As a result of that survey, letters were sent to primary care physicians informing them of the current circumstances of the mental health Centers and how the Centers could best work with them. Two of the NBH Centers emphasized the need for a follow-up letter to a primary care physician when a Medicaid consumer is admitted for services, however this was not required. In the other NBH Center it was required that a letter be sent to the primary care physician of a consumer after an intake.

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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).

This Performance Improvement Project (PIP) affects the broad-spectrum of care provided to consumers by increasing communication/coordination for the purpose of sharing information between mental health service providers and primary care physicians and other health providers. Increased collaboration among healthcare providers can have a direct bearing on consumer's health because co-occurring physical and mental health disorders would be collaboratively addressed and result in increased symptomatic remediation. A significant proportion of these consumers have co-occurring disorders, potentially identifying them in a high-risk status. All Medicaid consumers enrolled at the three provider Centers were eligible to be included in the initial study sample. Remeasurement samples will be limited to Medicaid consumers who have been admitted for services during specified time periods. All Medicaid consumers are expected to be able to benefit from the PIP because of the aforementioned increase in communication/coordination among Healthcare providers. Medicaid consumers with special healthcare needs will not be excluded from the study.

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**B. Activity II: Define the study question(s).** Stating the question(s) helps maintain the focus of the PIP and sets the framework for data collection, analysis, and interpretation.

**Study Question:** Will the implementation of formal policies and procedures to require letters to be sent to NBH consumers' Primary Care Physicians and other health care providers after the completion of an intake, increase the frequency of such letters being sent for the purpose of informing PCPs that their patients are receiving mental health services?\*

\*The increase in frequency of letters being sent to PCPs and other Healthcare providers is the discrete measure of the study. However, increased coordination with all Healthcare providers of NBH consumers is the broader, but not currently measurable goal.

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**C. Activity III: Select the study indicator(s).** A study indicator is a quantitative or qualitative characteristic or variable that reflects a discrete event (e.g., an older adult has not received an influenza vaccination in the last twelve months), or a status (e.g., a consumer’s blood pressure is/is not below a specified level) that is to be measured. The selected indicators should track performance or improvement over time. The indicators should be objective, clearly and unambiguously defined, and based on current clinical knowledge or health services research.

<b>Study Indicator 1</b>	The study indicator for the Centennial Mental Health Center was the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from the Center. (The requirement that the intake therapist ask permission to send a letter to the consumer’s Primary Care Physician had been in effect for over two years.)
<b>Numerator</b>	The number of consumers’ charts in the sample survey with a copy of a letter sent to the primary care physician/Healthcare provider indicating the consumer had been admitted for services at Centennial Mental Health Center.
<b>Denominator</b>	The total number of consumers in the sample survey (N= 85).
<b>First Measurement Period Dates</b>	September 1, 2005 through December 15, 2005
<b>Benchmark</b>	<b>62%.</b> (Of those consumers at the Centennial Mental Health Center who consented to have a letter sent to their PCP).
<b>Source of Benchmark</b>	We were unable to find a formal study of this topic from which to obtain a recognized benchmark. This benchmark is based on data obtained from the Centennial Mental Health Center which was the only NBH provider Center that required intake therapists to ask consumer’s permission to send a letter to their Primary Care Physician or other healthcare provider. The data consists of the percentage of cases, obtained from a systematic sampling approach, when a letter was sent to the primary care physician.
<b>Baseline Goal</b>	75%. This goal was determined by the administrative staff of the Centennial Mental Health Center as being minimally acceptable at this point in time.



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<b>Study Indicator 2</b>	The study indicator for the combined North Range and Larimer Centers was the percentage of cases where a letter was mailed to a PCP/healthcare provider (as evidenced by a copy of such a letter in the consumers’ charts) after the consumers received an intake for mental health services from one of the NBH provider Centers. These two NBH Centers did not have a requirement to send a letter to the PCP/other healthcare provider:
<b>Numerator</b>	The number of consumers’ charts in the sample survey with a copy of a letter sent to the primary care physician/Healthcare provider indicating the consumer had been admitted for services at North Range and Larimer Centers.
<b>Denominator</b>	The total number of consumers in the sample survey (N= 100).
<b>First Measurement Period Dates</b>	September 1, 2005 through December 15, 2005
<b>Benchmark</b>	<b>62%.</b> This was based on the rate at which letters were sent to Primary Care Physicians and other Healthcare providers at the Centennial Mental Health Center. It excludes consumers who refused permission to contact their medical provider.
<b>Source of Benchmark</b>	
<b>Baseline Goal</b>	

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**C. Activity III: Select the study indicator(s).** A study indicator is a quantitative or qualitative characteristic or variable that reflects a discrete event (e.g., an older adult has not received an influenza vaccination in the last twelve months), or a status (e.g., a consumer’s blood pressure is/is not below a specified level) that is to be measured. The selected indicators should track performance or improvement over time. The indicators should be objective, clearly and unambiguously defined, and based on current clinical knowledge or health services research.

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

**Use this area for the provision of additional information:**

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

The baseline study population was a sample of the entire Medicaid population of open cases at all three provider Centers. The consumer had to be enrolled as a Medicaid recipient during the baseline period of September 1, 2005 – December 15, 2005. Ultimately, after the intervention of requiring intake therapists to ask permission to contact the consumer's Primary Care Physician, or other Medical Provider, all Medicaid consumers are expected to benefit from this project. Length of enrollment was not an exclusionary criterion for the baseline period. Consumers who refused to give permission for the admitting, or subsequent therapist, to contact their primary care physician or other medical provider were excluded from this study. Given the nature of the study question, studying the entire population was not feasible; therefore a sampling procedure was utilized.

In the remeasurement periods, only newly admitted Medicaid consumers will be eligible for the study project. Selected cases will not be reviewed until one month after the date of admission. However, consumers who were terminated before one month will not be excluded and will be included in the sampling procedure. Consumers who refused permission for the admitting or subsequent therapist to contact their primary care physician or other medical provider will be excluded from this study.

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**E. Activity V: Use sound sampling methods.** If sampling is to be used to select consumers of the study, proper sampling techniques are necessary to provide valid and reliable information on the quality of care provided. The true prevalence or incidence rate for the event in the population may not be known the first time a topic is studied.

Measure	Sample Error and Confidence Level	Sample Size	Population	Method for Determining Size ( <i>describe</i> )	Sampling Method ( <i>describe</i> )
<p>The number of cases in which a letter was sent to the consumers' Primary Care Physicians or other healthcare providers informing them that their patients' are receiving services from the mental health Center.</p>	<p>For both of the samples in the baseline measurement period, the confidence levels equaled 95% with a confidence interval of +/- 9.5%.</p>	<p>There were two sample sizes for the baseline data.</p> <p>One sample size (N = 85) was based on the number of Medicaid open cases (N=523) selected for the Centennial Mental Health Center. It had a pre-existing requirement that intake therapists ask consumers for permission to send a letter to their PCPs or other healthcare providers.</p> <p>The other sample size (N=100) was for the two Centers (North Range and Larimer)</p>	<p><u>Baseline Measurement Period:</u> The population of Medicaid eligible consumers who were open cases at an NBH provider mental health Center during September 1, 2005 through December 15, 2005.</p> <p>For Centennial, the population of Medicaid open cases was 523.</p> <p>For the combined North Range and Larimer Centers, the population of Medicaid open cases was 2005.</p>	<p>To ensure a representative sample of the Medicaid open consumers, the size of the samples was based on the following:</p> <ul style="list-style-type: none"> <li>■ the total number of open cases</li> <li>■ and the number of cases that needed to be selected to obtain a confidence level of 95% with a confidence interval of +/- 9.5%.</li> </ul> <p>While a confidence interval of +/-5% would have been ideal, the additional number of cases to be reviewed to obtain that level, would have put a significant administrative burden on the Centers. For example, 330 (instead of the 100) cases would have needed to be reviewed to obtain a +/-5% confidence interval for the two Centers that did not have the requirement to contact the PCPs.</p>	<p>A systematic sampling approach was used for the baseline measurement period. Every 5th case was selected, except in those instances when a consumer refused to give permission for the therapist to contact their Primary Care Physician or other healthcare provider. In such an instance, the next case and was selected.</p>

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**E. Activity V: Use sound sampling methods.** If sampling is to be used to select consumers of the study, proper sampling techniques are necessary to provide valid and reliable information on the quality of care provided. The true prevalence or incidence rate for the event in the population may not be known the first time a topic is studied.

Measure	Sample Error and Confidence Level	Sample Size	Population	Method for Determining Size ( <i>describe</i> )	Sampling Method ( <i>describe</i> )
		that did not have a requirement for the therapist to ask the consumer for permission to send a letter to their PCP or other healthcare provider. The sample was based on an open caseload of 2005 Medicaid cases.			
2 <sup>nd</sup> Remeasurement Period: The measure remained the same.	2 <sup>nd</sup> Remeasurement Period: The confidence level was 95% with a CI of +/- 5.0% (refer to Appendix H for the calculation).	2 <sup>nd</sup> Remeasurement Period: The new sample size was 327.	2 <sup>nd</sup> Remeasurement Period: The population was all of the admitted outpatient consumers at NBH's three Provider Centers.	2 <sup>nd</sup> Remeasurement Period: The method for determining the sample sized was based upon a sample size calculation (refer to Appendix H for details).	2 <sup>nd</sup> Remeasurement Period: The stated sampling method was changed from every 5 <sup>th</sup> record to every 3 <sup>rd</sup> record (see Appendix I).

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**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

\*an additional 35 charts were selected from the Center which had previously implemented a requirement to contact PCPs.

Description of data collection staff (include training, experience and qualifications):

The baseline data collection staff consisted of the senior medical records personnel for all three NBH provider Centers. Their names are listed on the attached minutes for the training session (Appendix C, p 20).

Their background and training varied from formal medical records training, to a work history at the Center in which they had progressively taken on more responsibility for the medical record system.

Administrative Data

Data Source

Programmed pull from claims/encounters

Complaint/appeal

Pharmacy data

Telephone service data /call center data

Appointment/access data

Delegated entity/vendor data \_\_\_\_\_

Other \_\_\_\_\_

Other Requirements

Data completeness assessment attached

Coding verification process attached

Survey Data

Fielding Method

Personal interview

Mail

Phone with CATI script

Phone with IVR

Internet

Other \_\_\_\_\_

Other Requirements

Number of waves \_\_\_\_\_

Response rate \_\_\_\_\_

Incentives used \_\_\_\_\_



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F. Activity VIb: Determine the data collection cycle.	Determine the data analysis cycle.
<p><input type="checkbox"/> Once a year <input type="checkbox"/> Twice a year <input type="checkbox"/> Once a season <input type="checkbox"/> Once a quarter <input type="checkbox"/> Once a month <input type="checkbox"/> Once a week <input type="checkbox"/> Once a day <input type="checkbox"/> Continuous <input checked="" type="checkbox"/> Other (list and describe):</p> <p><del>For the remeasurement periods, it is anticipated that it will take eight months to select 85 cases (which is the denominator) from the Centennial Center which required therapists to ask permission to contact primary care physicians prior to the baseline measurement period. The cases will be selected utilizing a systematic sampling approach (every Nth case). Centennial has the smallest number of open cases and will take the longest amount of time to generate the denominator of 85 whether every 2<sup>nd</sup>, 3<sup>rd</sup> etc. case is chosen.</del></p>	<p><input checked="" type="checkbox"/> Once a year <input type="checkbox"/> Once a season <input type="checkbox"/> Once a quarter <input type="checkbox"/> Once a month <input type="checkbox"/> Continuous <input type="checkbox"/> Other (list and describe):</p> <hr/> <hr/> <hr/> <hr/> <hr/>
<p><b>For the 2<sup>nd</sup> remeasurement period, the data collection cycle for all Provider Centers ran between February 2007-September 2007</b></p> <hr/> <hr/> <hr/>	

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**Estimated percentage degree of administrative data completeness: \_\_\_\_\_ percent.**

**Supporting documentation:**

The data element collected was whether a letter was sent to the consumer's Primary Care Physician or other medical provider informing them that their patient was receiving services at one of the NBH provider Centers. The source of the data was the medical records chart for each consumer at each provider Center.

A manual data collection methodology was used to obtain the data for the baseline period, and will also be used for the remeasurement periods. The baseline data collection tool is attached as Appendix A (p. 18). This data collection tool was defined as the systematic process for collecting data. The timeline for collecting baseline (February 2007) data was September 1, 2005 through December 15, 2005. Qualified staff to collect this data included the senior medical records personnel at each of the Centers. As stated earlier in this report, their training ranged from formal medical records training, to a work history at the Center in which they had progressively taken on more responsibility for the medical record system until they were put in charge of it.

A training session was conducted by Neil Benson, Ph.D, the NBH Director of Quality Improvement, on October 5, 2005 for the senior medical records personnel. Instructions for collection of the data were reviewed and are attached as Appendix B (p. 19).

This tool contains an indication of whether the PIP indicator was present. It also contains a list of all of the other data elements collected.

This tool was designed to be simple and straightforward to enhance the consistency and accuracy of the data collected. The 100% interrater reliability obtained from the over sampling procedure conducted at the three Centers was evidence of the ease-of-use of this tool (Appendix D, p. 21).

The purpose and nature (overview) of the study, as well as the directions for completion of the data collection tool, were explained at that time. This is documented in the minutes (Appendix C p.20) for that meeting. Though this overview was not specifically in the instructions, the overview was presented immediately prior to the instruction and training in the use of the tool for the project.

A systematic sampling approach, the Nth selection technique, was utilized. Once the required sample size was calculated, every 5<sup>th</sup> record was selected from a list of Medicaid open consumers. All Medicaid open consumers were eligible for the systematic sampling for the baseline measurement period. As stated earlier, the only exclusions were those consumers who refused permission for the intake therapist to contact their Primary Care Physician or other healthcare provider.

All cases, 100%, selected in the systematic sampling contained the study measure of whether or not a letter had been sent to the consumer's Primary Care Physician or other healthcare provider. As cited above, over sampling was conducted at all three Centers and there was a 100%



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

reliability rate (see Appendix D, p. 21). This result, combined with the experience of the medical records persons from all three Centers, gives a "high level of confidence" in the completeness of the study measure data. The completeness of the other items on the data form ranged between 90% and 100% with the exception of the following two items:

- Ethnicity/race which was completed approximately 85% of the time
- The indication of whether the consumer had a Primary Care Physician or other healthcare provider was completed 63% of the time at Larimer and North Range, and 80% of the time at Centennial.

The plan for data analysis consists of the use of chi-square analyses comparing the baseline years to the first remeasurement years, the first remeasurement years to the second remeasurement years, and the continuation of this process until the project is judged a success.

#### **Explanation for Change of Study Design.**

1. The original sample of 150 was based on a total of 2500 NBH Medicaid open cases. This resulted in a confidence interval of +/- 8.0% at the 95% level. To obtain a confidence interval of +/- 5% would have required a sample of 330. In order to achieve a confidence interval of +/- 5%, 180 additional records would have needed to be sampled. The additional administrative burden on the Centers to reduce the interval level from 8% to 5% did not seem warranted.
2. When we conducted the original formal survey we obtained the following results.
  - The Centennial sample of 50 had a 62% rate of letters sent to Primary Care Physicians.
  - The North Range sample of 50 had a 0% rate of letters sent to Primary Care Physicians.
  - The Larimer sample of 50 had a 4% rate of letters sent to Primary Care Physicians.

**The total sample of 150 had a 22% rate of letters sent to Primary Care Physicians. Of the 33 letters sent to physicians, 31 of them were from Centennial.**

Based on these results we did not feel it was appropriate to combine Centennial with North Range and Larimer. For over two years, Centennial had a requirement that therapists ask consumers for permission to send a letter notifying their Primary Care Physician. North Range and Larimer had no such requirement. While the difference in requirements among the Centers had been known prior to the sampling procedure, the rate at which letters were sent to Primary Care Physicians and/or other Healthcare providers at North Range and at Larimer was lower than anticipated.

NBH hired a consultant to help us determine the best possible Performance Improvement Project design. After considerable discussion, it

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was decided to have two study indicators. The reasoning for the study design we developed is described below.

- We combined North Range and Larimer to obtain a sample of 100 which resulted in a confidence interval of +/- 9.5% at the 95% confidence level. By themselves, a sample of 50 at each Center would have yielded a confidence interval of +/- 13.5%. North Range had 905 open cases and Larimer had 1100 open cases at the time the formal sampling survey was conducted.
- By combining the Larimer and North Range Centers, we were able to tighten the confidence intervals (by using a sampling technique) without causing a significant administrative burden to review the increased number of charts required to produce a representative sample. We also combined the Centers because they both had no requirement to ask permission to send letters to PCPs, and because they both had a very low rate at which such letters were sent. To obtain a confidence interval of +/- 5% at North Range and Larimer would have required a sample of 330. This would have placed an undue burden on administrative staff time at the Centers.

Though presented as a single pool of 100 cases, we will conduct separate, secondary analyses analyzing the rates and other variables at North Range and Larimer.

- If Centennial continued to have a sample of 50 (it had 523 open cases), it would have a confidence interval of +/- 13.5%. **By increasing the sample size to 85 we tightened the confidence interval to +/- 9.5%.** To obtain a confidence interval of +/- 5% at Centennial it would have required a sample of 220. This would have changed the study design even further and placed an undue burden on their administrative staff.
- The original benchmark of 78% was based on a preliminary survey of 40 cases from Centennial. One of the unexpected findings of this survey was that 25% of the Centennial consumers refused to give permission for the intake therapist to contact their Primary Care Physician. This was an early indication of the importance of tracking whether or not the consumer gave permission to contact the Primary Care Physician. During the baseline data collection it was noted that 10% of the consumers refused permission to contact their PCPs. While the preliminary survey was randomized, it was not conducted with the full rigor of the baseline sampling. The current benchmark of 62% is based on rigorous sampling procedure that included 85 out of 523 open Medicaid consumers at Centennial. In follow-up discussions, it was determined that there was a higher rate of "refusal" in the small cities serving very rural areas. This is another reason to look at Centennial as a separate indicator. Lastly, the design is intended to enable NBH to conduct the Performance Improvement Project in accordance with all requirements, and optimize the implementation process of increasing communication and coordination between Center provider therapists and consumer health care providers.

In summary, our decision to change the design was based on the results of the formal sampling survey and the difference in requirements

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

at the three Centers. The current design is intended to obtain representative samples without placing undue administrative burdens on the staffs of the Centers.

#### ***First Remeasurement Period***

For the baseline data, the available pieces of data that constituted evidence as to whether or not communication between the Center and the consumer's Primary Care Physician or other healthcare provider primary care provider (PCP) was the presence of both a release of information and a letter to the PCP. For the first remeasurement period, it was decided to develop a special form to communicate with the PCP's. This form was called the Medical Provider Notification Form (MPNF) and instructions on how to utilize the Form were developed (see Appendix E). Discussions regarding the MPNF were conducted with the Center's deputy directors at the NBH Quality Improvement Administrative Subcommittee (QIAS) and training sessions were held with medical records personnel doing the sampling and obtaining the information (see Appendices F and G for minutes to the QIAS and training meetings).

Once the first remeasurement period was underway, a number of factors became evident. It was expected that when a consumer gave permission to contact their PCP that there would be a copy of a completed MPNF, release of information, and a letter to the PCP. The presence of these three items was conceptualized to constitute a complete dataset and full evidence that the PCP was contacted. The medical records personnel recorded the data in an Excel spreadsheet and submitted it, along with the MPNF, to NBH. However, when the first month's data sample was sent to NBH, many missing pieces were discovered. For example, in some cases there was a copy of the MNPF and a release of information, but no copy of a letter to the PCP. In other cases, there was a copy of a letter to the PCP and a release of information, but no MNPF. Discussions were held with the Center's deputy directors to address these deficiencies; however, these deficiencies were addressed several months into the remeasurement period, due to the timing of the flow of information. (The first month of data to be sampled was for February 2006, but the report of all new admissions does not get to medical records personnel until the middle of the following month (March), and the data is not due to NBH until the month after the medical records personnel receive the admission data (April).) This meant that the discovery of the missing pieces of information occurred several months into the remeasurement period.

The discovery of the missing pieces of data called into question the original study question, which focused on letters sent to the PCP. Though the letters (and MPNF) constituted a form of proof of communication, they were not the outcome variable. The outcome variable was proof of contact with the PCP and the letters were the mechanism by which the contact occurred. Thus, a determination regarding what minimally constituted communication with the consumer's PCP was made, yielding four criteria. It was deemed that communication with a consumer's PCP occurred if one of the following criteria were met:

- The presence of a copy of the MNPF, release of information, and a copy of a letter to the PCP in the consumer's chart (indicating that the originals had been mailed).
- The presence of a copy of the MNPF and release of information in the consumer's chart (indicating the original had been mailed to the PCP).

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- The presence of a copy of a letter and a release of information in the consumer's chart (indicating that the original had been mailed to the PCP).
- The presences of an original MNPF, a release of information, and a proof of the faxing of the MNPF in the consumer's chart.(February 2007)

**Second Remeasurement Period**

**The data element remained the same for the second remeasurement period.**

**The sampling method was updated to reflect what was occurring when records were sampled during the first remeasurement period. Although the sampling method described in E. Step 5, F. Step 6b, and in Appendix B indicated that every 5<sup>th</sup> record was to be selected, a review of the sampling method demonstrated that it was actually every 3<sup>rd</sup> record was being sampled for the first remeasurement period. This discrepancy was due to an error in the updated instructions that were distributed to the data collection personnel at NBH's Provider Centers (see Appendix I). To be consistent with the first remeasurement sampling, the selection of every 3<sup>rd</sup> record was carried forward into the second remeasurement period. This change in sampling method was approved by HSAG during a telephone consultation on June 13, 2007.**

**Additionally, to improve the overall quality of the study, sample size issues were revisited. Initially, the idea of increasing the sample size was previously deemed to be too burdensome on NBH's Provider Centers (see the "Explanation for Change of Study Design" on page 11). The original sample size was based upon a NBH Medicaid population of 2500 consumers whereas the population had grown to over 5000 consumers by 2007. Additionally, each Provider Center's sample size was not individually reflective of their Medicaid population (e.g., Centennial's sample size was 85, Larimer's sample size was 50, and North Range's sample size was 50). Lastly, this sample size yielded a rapid data collection process at Larimer and North Range and a prolonged data collection process at Centennial. The notion of changing the sample size was broached with the Provider Center data collection personnel, who indicated that it would not be unduly burdensome to increase the sample size. As such, NBH's overall sample size was increased to 327 and this was approved by HSAG during the June 13, 2007 telephone consultation. The new sample sizes for the second remeasurement were proportionally readjusted by Provider Center: Centennial=65, Larimer=139, and North Range=123). See Appendix H for complete details.**

**Lastly, the data analysis was changed for the second remeasurement period to reflect the idea that the samples from each Provider Center are independent; that is, even though Larimer and North Range's data were combined during analysis, their samples were mutually exclusive. Moreover, meaningful statistical information regarding each Center was obscured during the first remeasurement period (e.g., the combined rate of 66% obscured the fact that Larimer's rate was 62% and North Range's rate was 70%). For the second remeasurement period, the data from each Provider Center were analyzed separately.**



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**G. Activity VIIIb: Implement intervention and improvement strategies.** Real, sustained improvements in care result from a continuous cycle of measuring and analyzing performance, and developing and implementing systemwide improvements in care. Describe interventions designed to change behavior at an institutional, practitioner, or consumer level.

**Describe interventions:**

The intervention is to require that intake therapists ask permission from consumers to contact their Primary Care Physician or other healthcare providers. The intervention was implemented at Larimer and North Range on February 1, 2006, and required the therapist to obtain a signed release of information and send an MNPF and/or letter to the PCP. (February 2007) The first remeasurement ~~will begin~~ began March 1, 2006. (February 2007) While the Centennial Mental Health Center already had this requirement, the staff has and will continue to receive the same memos and information that have been and will be distributed at Larimer and North Range. As stated earlier, the data was tracked manually and proof of contact was determined by the presence of any one of the following criteria:

- The presence of a copy of the MNPF, release of information, and a copy of a letter to the PCP in the consumer's chart (indicating that the originals had been mailed).
- The presence of a copy of the MNPF and release of information in the consumer's chart (indicating the original had been mailed to the PCP).
- The presence of a copy of a letter and a release of information in the consumer's chart (indicating that the original had been mailed to the PCP).
- The presences of an original MNPF, a release of information, and a proof of the faxing of the MNPF in the consumer's chart.(February 2007)

**Remeasurement 1 to Remeasurement 2**

**The intervention for this PIP remained the same for the second remeasurement period. The intervention was implemented in February 2007 and the measurement cycle ran through September 2007.**

**(Please refer to Appendix J for a description of the causal/barrier analysis that was performed based upon the results of the second remeasurement period.)**

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

**Baseline Measurement**

A potential threat to validity is the confidence interval of +/- 9.5% as represented in the sample. Because the baseline rate of North Range and Larimer combined was 2%, the likelihood of exceeding the confidence interval declines. This would decrease the potential threat to validity posed by the confidence interval of +/- 9.5%. This effectively tightens the interval which increases the reliability of the indicator.

**Remeasurement 1**

The numerators and denominators were used to obtain the rates at which the Centers evidenced communication with the consumer's PCP. These rates increased significantly from the baseline measurement in 2005 to the first remeasurement period in 2006 (see page 16). The rates for Larimer and North Range increased to 66% (first remeasurement) from 2% (baseline), which represents a statistically significant increase ( $X^2$  (df=1,N=200)=91.27,  $p<.001$ ). Likewise, the rates for Centennial increased to 90.6% (first remeasurement) from 62.4% (baseline), which also represents a statistically significant increase ( $X^2$  (df=1,N=170)=18.83,  $p<.01$ ). As the sampling procedure for the first remeasurement period was identical to the baseline sampling procedure, the aforementioned potential validity issues relating to the confidence interval of +/- 9.5% should still be considered.

The data for both Larimer and North Range were parsed to look for within-Center differences. Post hoc comparisons using Bonferroni's correction for chi square (.05/3=.017) were conducted to determine if the differences between both Center's baseline and first remeasurement rates were significant. Analysis on Larimer's data indicated that the increase from 4.0% (baseline) to 62.0% is statistically significant ( $X^2$  (df=1,N=100)=38.04,  $p<.001$ ). North Range's data indicated similar results; the increase from 0% (baseline) to 70% (first remeasurement) is statistically significant (df=1,N=100)=53.85,  $p<.001$ )(February 2007)



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

**Remeasurement 2**

The numerators and denominators were used to obtain the rates at which each NBH Provider Center evidenced communication with a consumer's PCP (as measured by this study). Each Center's sample was parsed by ethnicity and sex/age and examined to see if there were any between group differences in the rate in which the consumer's PCP was not contacted.

- The rate for Centennial dropped from 90.6% (1<sup>st</sup> remeasurement) to 80.0% (2<sup>nd</sup> remeasurement); however, this 10.6% rate reduction was not statistically significant ( $X^2$  (df=1,N=150)=3.43,  $p>.05$ ) and was still over the 75% benchmark established after the baseline measurement. With regard to specific ethnic and sex/age differences:
  - 33.3% (5 of 15) of the Latino sample did not evidence sufficient proof that a PCP was contacted.
  - 71.4% (5 of 7) of the female adolescent (13-17 years old) sample did not evidence sufficient proof that a PCP was contacted.
- The rate for Larimer increased from 62% (1<sup>st</sup> remeasurement) to 85.6% (2<sup>nd</sup> remeasurement) and this difference was statistically significant with a small effect size ( $X^2$  (df=1,N=189)=12.52,  $p<.01$ ,  $\eta=.26$ ). Larimer has demonstrated sustained improvement by exceeding the 62.4% benchmark established after the baseline measurement. With regard to specific ethnic and sex/age differences:
  - 28.6% (2 of 7) of the adult male (22+ years old) sample did not evidence sufficient proof that a PCP was contacted.
- The rate for North Range increased from 70% (1<sup>st</sup> remeasurement) to 74% (2<sup>nd</sup> remeasurement) and this difference was not statistically significant ( $X^2$  (df=1,N=173)=.29,  $p>.05$ ). North Range has demonstrated sustained improvement by exceeding the 62.4% benchmark established after the baseline measurement. With regard to specific ethnic and sex/age differences:
  - 40.9% (9 of 22) of the female child (0-12 years old) sample did not evidence sufficient proof that a PCP was contacted



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

**Interpretation of study results:**

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

**Baseline Measurement**

**Remeasurement 1**

The first remeasurement methodology was the same as the baseline methodology and therefore was not a factor in the substantial changes noted between the measurement periods. This suggests that the statistically significant differences represent real change from baseline to the first remeasurement. The rate of communication between all three Centers and their consumers' primary care provider improved significantly from the baseline to the first remeasurement period. In addition, the results demonstrated that all Centers surpassed the benchmark of 62.4%. Centennial's rate of 90.6% represented a 28.2% increase beyond the benchmark and Larimer and North Range's combined rate of 66.0% surpassed the benchmark by 3.6%.

In addition, Larimer and North Range's results were examined separately post hoc and both demonstrated substantial improvement. Larimer's rate increase from 4% (n=2 at baseline) to 62% (n=31 at first remeasurement) was statistically significant, as was North Range's rate increase from 0% (n=0 at baseline) to 70% (n=35 at first measurement).

Possible threats to the validity of these results include the relative incompleteness of the records and the confidence interval related to the sampling procedure. With regard to the completeness of the records, it is likely that more communication occurred than what was credited because of lack of adequate documentation. This is expected to be corrected based on the discussions with each Center's deputy director, subsequent corrective actions taken by each Center to assure the completeness of the data. (February 2007)

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

**Remeasurement 2**

**The second remeasurement methodology was changed to improve the overall quality of the study and it is likely that this current sample is a more valid and reliable estimate of 1) the rate at which a consumer's PCP is contacted and 2) the rate at which change occurred from the first remeasurement. While Larimer was the only Center that evidenced a statistically significant increase from the first to second remeasurement, all three Provider Centers demonstrated sustained improvement from the baseline measurement. Nonetheless, there is room for improvement at all Centers with regard to specific subpopulations (e.g., Latino consumers at Centennial, female child consumers at North Range, adult male consumers at Larimer).**

**Another issue that may have negatively impacted the North Range and Centennial's rates is related to personnel changes at each of these Centers. Both Centers experienced staff turn-over in their multicultural teams and underwent other general staff changes (e.g., extended sick leave by a key Center administrator at the beginning of the second remeasurement period.)**

Remeasurement 3

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**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
<b>Centennial Mental Health Center</b>						
September 1, 2005 – December 15, 2005	<i>Baseline:</i>	53	85 <sup>^</sup>	62.4%	62.4%**	NA
March 1, 2006- December 31, 2006	<b>Remeasurement 1</b>	77	85 <sup>^</sup>	90.6%	62.4%**	X <sup>2</sup> (df=1,N=170)=18.83, p<.01
<b>February 1, 2007- September 30, 2007</b>	<b>Remeasurement 2</b>	<b>52</b>	<b>65<sup>^</sup></b>	<b>80.0%</b>	<b>75.0%**</b>	<b>(X<sup>2</sup> (df=1,N=150)=3.43, p&gt;.05</b>

**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
<b>—North Range and Larimer Mental Health Centers</b>						
September 1, 2005 – December 15, 2005	<i>Baseline:</i>	2	100 <sup>^</sup>	2.0%	62.4%**	NA
March 1, 2006- May 31, 2006	<b>Remeasurement 1</b>	66	100 <sup>^</sup>	66.0%	62.4%**	X <sup>2</sup> (df=1,N=200)=91.27, p<.01

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**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
<b>Larimer Center for Mental Health</b>						
<b>September 1, 2005 – Dec. 15, 2005</b>	<b>Baseline:</b>	<b>2</b>	<b>50</b>	<b>2.0%</b>	<b>62.4%**</b>	<b>NA</b>
<b>March 1, 2006-May 31, 2006</b>	<b>Remeasurement 1:</b>	<b>31</b>	<b>50</b>	<b>62.0%</b>	<b>62.4 %</b>	<b>X<sup>2</sup> (df=1,N=100)=38.04, p&lt;.001</b>
<b>February 1, 2007- September 30, 2007</b>	<b>Remeasurement 2:</b>	<b>119</b>	<b>139</b>	<b>85.6%</b>	<b>62.4%</b>	<b>X<sup>2</sup> (df=1,N=189)=12.52, p&lt;.01</b>

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

**#4 Quantifiable Measure:** The percentage of cases where a letter was mailed to a PCP/healthcare provider by the staff of North Range Behavioral Health.

Time Period Measurement Covers	Baseline Project Indicator Measurement	Numerator	Denominator	Rate or Results	Industry Benchmark	Statistical Test and Significance* Test statistic and p-value
<b>North Range Behavioral Health</b>						
<b>September 1, 2005 – December 15, 2005</b>	<b>Baseline:</b>	<b>0</b>	<b>50</b>	<b>0%</b>	<b>62.4%**</b>	<b>NA</b>
<b>March 1, 2006-May 31, 2006</b>	<b>Remeasurement 1:</b>	<b>35</b>	<b>50</b>	<b>70.0%</b>	<b>62.4%**</b>	<b>X<sup>2</sup>=(df=1,N=100)53.85, p&lt;.001</b>
<b>February 1, 2007-September 30, 2007</b>	<b>Remeasurement 2:</b>	<b>91</b>	<b>123</b>	<b>74.0%</b>	<b>62.4%</b>	<b>X<sup>2</sup> (df=1,N=173)=.29, p&gt;.05</b>

\*\*Not an industry benchmark, as stated in Step Three.

^ The denominator will remain at 85 for Centennial and 100 for the combination of North Range and Larimer throughout the remeasurement periods.

\* 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.

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**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:**

**Remeasurement 1**

It is highly likely that intervention, along with the corrective action, described in G, step 7 (page 13) are the reasons behind the statistically significant improvement between the measurement periods. Given that there was no substantial changes in the number of open cases between the measurement periods and that the sampling method was the same, it is unlikely that there are random population fluctuations accounting for the improvements. Likewise, issues related to sampling error are not likely to have caused variation, considering the adherence to the prescribed procedure and validity checks. Given these considerations, it is highly likely that this improvement can be sustained to the next measurement period, provided the methodology remains the same. (February 2007)

**Remeasurement 2**

**The intervention remained the same from the first to second remeasurement periods. However, key changes were made to the sample size and data analyses. Even though the intervention was static and there were methodological changes to improve the study design, the Provider Centers still demonstrated sustained improvement, as compared to their baseline data. While Centennial's rates went down 10.6% and North Range's increase was not statistically significant, in both cases their rates were over the specified benchmarks. There were a few key areas that are open for continued improvement. As stated earlier, Centennial's Latino and female adolescent populations would benefit from increased attention with coordination of care. Likewise, Larimer's adult male population and North Range's female child population would benefit from similar increases in attention. The results of the second remeasurement will be shared with the Provider Centers and will be discussed at NBH quality improvement meetings.**

**With the implementation of a new Colorado statewide PIP that targets coordination of care with consumers, it is likely that the current coordination of care rates will be improved upon. NBH is scheduled to begin the new statewide PIP in 2008. In addition to the statewide PIP, NBH has initiated a new PIP which targets increasing caregiver involvement in child/adolescent therapy. This new PIP is in the first remeasurement cycle and it is anticipated that by getting caregivers more involved in the therapy process, all aspects of care coordination (e.g., coordination with caregivers, coordination with schools, coordination with medical providers) will increase for both the male and female child/adolescent populations.**

**These new PIPs will carry forth the legacy of this current PIP by 1) stressing the importance of increasing care coordination between therapists and medical providers, and 2) focusing more clinical attention children/adolescents by encouraging caregiver involvement in the therapeutic process.**



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**Appendix A  
Data Collection Tool**

**Northeast Behavioral Health**

**Primary Care Physician Data Collection Form**

Center \_\_\_\_\_ Consumer Name \_\_\_\_\_

Admission Date \_\_\_\_\_ Gender \_\_\_\_ (M/F) DOB \_\_\_\_\_

Intake Clinician \_\_\_\_\_ Program \_\_\_\_\_

Ethnicity/Race (How does consumer identify himself/herself?) \_\_\_\_\_

Name of Primary Care Physician or healthcare provider (If none indicate none, or, if unclear, indicate that.) \_\_\_\_\_

Did consumer refused to give permission to contact Primary Healthcare Provider? \_\_\_\_\_ ( Yes, or No)

\_\_\_\_\_ (see instructions)

Was a letter sent to the Primary Care Physician or Other Health Provider? \_\_\_\_\_ ( Yes, or No)

Was there a signed and dated release by the consumer giving permission to contact the Primary Care Physician or other healthcare provider? \_\_\_\_\_ (Yes, or No)

November 5, 2005 nb

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**Appendix B.**

**Northeast Behavioral Health**

**Instructions for Chart Selection and Data Collection for Increasing Communication with Primary Care Physicians PIP**

1. Obtain an alphabetic listing of all Medicaid consumers currently receiving services (open cases).
2. Starting with the first consumer, select every fifth case. **A total of 50 Chart's need to be reviewed.**
3. Once a case has been selected, complete the initial sections (name, age, Center, Etc.) of the Primary Care Physicians recording form.
4. Go to the section in the chart that has the intake.
5. Examine the entire intake, or medical history (as appropriate by Center), to determine if there is an indication that the consumer has a Primary Care Physician or other persons providing ongoing health care, such as a health clinic, or a Physicians Assistant. Indicate this in the appropriate section on the form. If none found, or the consumer did not name a specific medical care personnel indicate so. If it is determined in the intake, or subsequent sections, that the consumer has refused permission for a letter to be sent to the primary care physician, or others providing medical care, then this case must be omitted from the study. For example, if it was #30, then select the next case and it becomes #30. (#31 becomes #30) if two people are doing this at a Center, they must work closely together to assure that the procedures regarding Selection and omission of records are carried out correctly
6. Go to the section of the chart that contains letters sent to other professionals, agencies, family members, and other persons.
7. Determine if a letter has been sent to the primary care physician or other person or agencies providing ongoing medical care. Indicate the finding in the appropriate section of the form. If a letter was sent six months later, please note this.
8. If a letter has been sent, determine if there has been a release of information that was completed indicating permission to send a letter to the doctor or health source. Indicate the finding in the appropriate section of the form.
9. Make a final review of the reporting form to assure the form is complete.
10. Oversampling. After the sample of 50 cases is reviewed, select an additional five cases. If two persons reviewed the records, each person should review all five of these records and compare findings. If only one person reviewed all 50 records, have other qualified medical records staff do the co-review of the oversampling. A report of the oversampling needs to be sent to the NBH Director of Quality Improvement.



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**Appendix C.**

**Northeast Behavioral Health**

**Minutes of Formal Training for Data Collection for the Primary Care Physician Performance Improvement Project  
for October 5, 2005 at 1:30 p.m.**

Present: Sandy Mitchell, Medical Records Coordinator for NRBH  
Lynn Coxon, QA Assistant of Medical Records for LCMH  
Chantell Christner, Office Manager for CMHC  
Laura Martinez, Assistant Director of Evaluation and Planning for NBH  
Neil Benson, Director of QI for NRBH and NBH

1. Neil Benson, Ph.D., Director of Quality Improvement thoroughly gave an overview of the importance of the Performance Improvement Project of Increasing Communications with Primary Care Physicians. He explained the instructions for Chart Selection and Data Collection for Increasing Communication with Primary Care Physicians PIP with the selected reviewers.
2. Neil Benson also explained the process of oversampling if the reviewers are supervising others who are reviewing the charts or if there are two reviewers.
3. The reviewers were instructed to send forms to Laura Martinez within the first week of December.
4. Neil Benson stated if there are any questions which require a change in the process, the reviewers will be notified by e-mail as soon as possible.
5. Neil Benson addressed any questions that were raised by the reviewers.

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**Appendix D**

**Northeast Behavioral Health  
Over sampling Procedure**

Each Center was required to conduct an over sampling of 5 to 10 clients after completing the sample.

1. North Range Behavioral Health had an over sampling of 5 charts. There was 100% interrater-reliability present with all 5 of these charts.
2. Larimer Center for Mental Health had an over sampling of 5 charts. There was 100% interrater-reliability present with all 5 of these charts.
3. Centennial Mental Health had an over sampling of 10 charts. There was 100% interrater-reliability present with all 10 of these charts.

In Summary: There was 100% interrater-reliability for all 20 charts. This is evidence of the instructions being clear and the form being easy to complete.



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**Appendix E**

**Northeast Behavioral Health  
Instructions for the Medical Provider Notification Form**

NBH conducts formal research projects called Performance Improvement Projects (PIP), to improve processes and outcomes of mental health care. One of the current projects is designed to increase the communication and coordination mental health providers have with primary health care providers.

The Primary Care Physician and Other Medical Provider Notification form is the mechanism that has been designed for increasing communication/coordination with PCP's and other Health Care Providers.

**ALL THE INFORMATION MUST BE COMPLETED.**

**To:** Write the name of the Primary Care Physician or other Medical Provider whom the consumer listed.

**DATE:** Write the date when this form was completed.

**ADDRESS:** Write the address of the Primary Care Physician or other Medical Provider to whom this form is being sent.

**PHONE #:** List the phone number of the Primary Care Physician or other Medical Provider to whom this form is being sent.

**FAX#:** Write the fax number if known of the Primary Care Physician or other Medical Provider to whom this form is being sent.

**PATIENT NAME:** Write the legal name of the consumer, or the name for which the Physician is familiar.

**MEDICAID#:** Write the consumer's current Medicaid number.

**DOB:** Write the consumers date of birth --/------

**DATE OF ADMISSION TO**\_\_\_\_\_. Write the date the consumer was admitted into your facility.

**DSM IV-TR ADMITTING DIAGNOSIS:** Provide the DSM IV-TR diagnosis that was given to the consumer upon admission to your agency.

**TREATMENT PROGRAM NAME:** Write the name of the agency or program in which the consumer was admitted to.



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**CLINICIAN:** Write the name of the clinician who will be treating the consumer.

**ADDRESS:** Write the address of the agency where the consumer will be receiving treatment.

**PHONE#:** List the phone number of the agency where the consumer will be receiving treatment for the purpose of enabling the Primary Care Physician or other Medical Provider to contact the treating clinician if necessary.

**FAX#:** Write the fax number of your agency where the consumer will be receiving treatment.

**THE FOLLOWING INITIAL/ONGOING SERVICES HAS BEEN RECOMMENDED TO THE PATIENT AND AUTHORIZED AS MEDICALLY NECESSARY:**  
Complete this section as it pertains to the services the consumer will be receiving while at your agency. For Group and Psychotropic Medications-referred for evaluation, be as specific as possible.

**PRINTED NAME OF CLINICAL CARE COORDINATOR:** The Clinical Care Coordinator who is completing this form must print his/her name in the space provided.

**SIGNATURE/DATE:** The Clinical Care Coordinator who is completing this form must sign his/her name and provide the date the form was completed in the space provided.

**COPY OF THE RELEASE OF INFORMATION HAS BEEN ATTACHED:** Always put a check mark by this statement and attach the Release of Information with this form prior to sending it to the Primary Care Physician or other Medical Provider. (If the consumer has given consent for a letter to be sent.)

**PLEASE PROVIDE US WITH A SUMMARY OF THIS PATIENT'S MEDICAL HISTORY AND ANY MEDICATIONS YOU ARE CURRENTLY PRESCRIBING:**  
Always put a check mark by this statement when completing this form.(If the consumer has given consent for a letter to be sent.)

**PLEASE CONTACT US IF YOU WOULD LIKE FRUTHER INFORMATION REGARDING THE MENTAL HEALTH TREATMENT OF THIS PATIENT:** Always put a check mark by this statement when completing this form.(If the consumer has given consent for a letter to be sent.)

**PHONE #:** Write the phone number of the agency/therapist of whom the Primary Care Physician or other Medical Provider can contact if needed.

**PLEASE CHECK ALL THAT APPLY:**

**I DO NOT HAVE A PRIMARY CARE PHYSICIAN OR OTHER PRIMARY MEDICAL PROVIDER:** It is imperative that this statement be checked if the consumer reports he/she does not have a Primary Care Physician or Other Primary Medical Provider.



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**A REFERRAL HAS BEEN MADE TO A PRIMARY CARE PHYSICIAN OR MEDICAL FACILITY:** If a consumer reports he/she does not have a Primary Care Physician or other Medical Provider and the consumer appears to be in need of medical attention, or the consumer request a referral, give the consumer the toll free phone number for medical Medicaid: 1-800- 221-3943. If a referral was provided put a check mark next to this statement.

**I DO NOT WANT YOU TO CONTACT MY PRIMARY CARE PHYSICIAN:**

If the consumer states he/she does not want you to contact the Primary Care Physician it is imperative that this statement be checked as it constitutes a refusal. **Even if the consumer refuses contact with the PCP, the Primary Care Physician and Other Medical Provider Notification, form MUST be placed in the consumer's chart.**

**PATIENT SIGNATURE:** Legal name of the consumer.

**DATE:** The date in which the consumer signed the form.

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**Appendix F  
Northeast Behavioral Health  
Minutes for QIAS**

<b>NORTHEAST BEHAVIORAL HEALTH COMMITTEE MINUTES</b>	
<b>NAME OF COMMITTEE :</b> QI Administrative Subcommittee	<b>DATE OF MEETING:</b> January 3, 2006
	<b>LOCATION OF MEETING OR TELECONFERENCE:</b> Main Conference Room

<b>MEMBER</b>	X	Neil Benson		Phyllis Sitzman
<b>ATTENDANCE:</b>	X	Karen Thompson	X	Laura Martinez
	X	Spencer Green	X	Larry Pottorff
	X	Vicki Grassman	X	Anne Mitchell
<b>RECORDER:</b> Libby Goode-Grasmick				

<b>Agenda</b>	<b>Discussion</b>	<b>Action Taken</b>
<b>Old Business</b>		
1. Update on status of PIPS.	All three Centers have submitted samples of 50 charts and an over sample of 5 charts for inter-rater reliability. Laura will input the data into SPSS for further evaluation.	Update at next meeting.
2. Update on PCP PIP. a. Discussion of form/letter to be sent to PCPs. b. Discussion of policies and procedures that need to be implemented. c. Discussion of over sampling methods and procedures.	2a. The Committee reviewed the form/letter to be sent to the PCP's. Neil will make the changes and e-mail today. 2b. Neil read the policies and procedures regarding the PCP letter that will be sent out to the intake therapist. Neil will make changes and e-mail today. 2c. See 1. above.	Update at the next meeting or before then via phone and e-mail if necessary.

**Appendix A: PIP Summary Form:**  
**Increase NBH Center Provider Communication/Coordination with**  
**Primary Care Physicians and Other Health Providers**  
*for* **Northeast Behavioral Health, LLC**

**Appendix G**

**Northeast Behavioral Health**  
**Minutes on Training Issues**

**NORTHEAST BEHAVIORAL HEALTH TRAINING MINUTES**

<b>NAME OF TRAINING :</b> Instructions for the first remeasurement period of the PCP/Medical Provider Communication/Coordination Performance Improvement Project for the clinician care coordinators.	<b>DATE OF TRAINING:</b> March 22, 2006
	<b>LOCATION OF MEETING OR TELECONFERENCE:</b> Main Conference Room

<b>MEMBER ATTENDANCE:</b>	X	Neil Benson	X	Jean Knopp
	X	Laura Martinez	X	Monica Schaeffer
	X	Tamara McCoy	X	Lynne Coxon
	X	Adrianne Ware		

**RECORDER:** Laura Martinez

Agenda	Discussion	Action Taken
1. Brief overview and purpose of the PIP	Neil provided a brief overview of the PIP and described its purpose to the clinician care coordinators.	None at this time.
2. Instructions for completing the forms for the remeasurement period	Neil reviewed the instructions for completing the forms for the remeasurement period. (See instructions attached).	None at this time.
3. Review of the tracking log.	Neil reviewed the tracking log. Laura will add an amendments section to the log and e-mail the log to the coordinators.	None at this time.
4. Review of oversampling process	Neil reviewed the oversampling process with the coordinators.	None at this time.

**Appendix A: PIP Summary Form:  
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5. Due date for the data	Neil discussed the due dates for the data. He stated all data is to be turned into Laura by the 15 <sup>th</sup> of each month. For this remeasurement period we are beginning with March's data which will be due April 15, 2006	None at this time.
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**Appendix H**

**Calculation of New Sample Size for Second Remeasurement**

1. The formulas utilized for the new sample size were standard formulas also utilized for HEDIS methodology. The formulas assumed an unknown degree of variability and used a finite population correction:
  - Sample size formula:  $n_0 = (z^2 * p * q) / e^2$ , where  $z$ =abscissa of the normal curve,  $p$ =observed degree of variability,  $q=1-p$ , and  $e$ =desired level of confidence.
  - With finite population correction:  $n = n_0 / (1 + ((n_0 - 1) / N))$ , where  $n_0$ =sample size without population correction, and  $N$ =number of new admissions during the FY 2006 minus a 19.9% refusal rate (e.g., the rate at which consumers did not allow their clinicians to contact their PCP during the first remeasurement period) =1590.
2. Here are the numeric workings of the sample size formulas for NBH:
  - $n_0 = (1.96^2 * 0.5 * 0.5) / .05^2 = 384.16$ 
    - However, during the June 13, 2007 telephone consultation with HSAG, Don Grostnic indicated that HEDIS utilized 411 for a statistical sample. As such, 411 was used for the following finite population correction.
  - $n = 411 / (1 + ((411 - 1) / 1590)) = 326.75$  (327 with rounding)
3. After the NBH sample size was calculated ( $n=327$ ), the sample size was stratified proportionally by Provider Center:
  - Centennial's new admissions for FY 2006 accounted for 20.0% of the total number; therefore Centennial's sample size for the second remeasurement was  $n = 327 * .20 = 65.4$ .
  - Larimer's new admissions for FY 2006 accounted for 42.6% of the total number; therefore, Larimer's sample size for the second remeasurement was  $n = 327 * .426 = 139.3$ .
  - North Range's new admissions for FY 2006 accounted for 37.4% of the total number; therefore, North Range's sample size for the second remeasurement was  $n = 327 * .374 = 122.3$ .
    - North Range was arbitrarily selected to have their sample size increased by one to account for rounding error.



**Appendix A: PIP Summary Form:  
Increase NBH Center Provider Communication/Coordination with  
Primary Care Physicians and Other Health Providers  
for Northeast Behavioral Health, LLC**

**Appendix I**

**Partial Instructions Regarding Sampling Method for the Current Performance Improvement Project (Dated February 2006)**

**INSTRUCTIONS FOR FIRST REMEASUREMENT PERIOD OF PRIMARY CARE PHYSICIAN/MEDICAL PROVIDER  
COMMUNICATION/COORDINATION PERFORMANCE IMPROVEMENT PROJECT**

Communication and coordination with Primary Care Physicians and other medical care providers is essential if mental health treatment and medical treatment are to be optimized. The purpose of this Performance Improvement Project is to increase communication and coordination between clinicians-care coordinators at the NBH Mental Health Centers and medical providers who service their consumers.

1. As soon as the March 2006 data is complete and ready for use, the medical records person will request a list of all Medicaid admissions that occurred during that month for their MIS department. This list should be sorted by the date of admission with the earliest admissions at the beginning of the list. The same procedure should be used once the April 2006 data is complete. It is understood that some March admissions may be included in the April data. Start the selection process with the earliest date of admission of each new month selected.
2. Select the first name on the list and then **every third name thereafter** until the end of the list of Medicaid admissions for the month of March is reached. Write the name and other pertinent information of the consumers selected on the monthly tracking log. The same procedure should be followed for April 2006 and every month thereafter until the sample is complete.

**Appendix J**

**New Causal/Barrier Analysis**

The results of the second remeasurement period did not demonstrate statistically significant improvement across all three of NBH's provider mental health centers. Though the results met the original goal of meeting or exceeding the stated benchmark, further investigation of the processes of this PIP were examined to see where improvement could occur.

1. What's the problem?
  - a. In terms of increasing communication with medical providers for newly admitted consumers (as measured by the presence of a faxed or mailed letter/Medical Provider Notification Form/ROI in the chart), there was not statistically significant improvement across all three of NBH's provider mental health centers between the first and second remeasurement period.

**Appendix A: PIP Summary Form:  
Increase NBH Center Provider Communication/Coordination with  
Primary Care Physicians and Other Health Providers  
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**2. Determine the significance of the problem.**

- a. While the initial intervention was initially very useful (as noted by the increase from baseline to the first remeasurement), the intervention has not been as useful during the second remeasurement period. This indicates that coordination of care between NBH mental health center providers is not improving, which may directly impact those consumers would benefit from coordination of care. As such, the current intervention does not adequately target the goal of the PIP.

**3. Identify the causes/barriers.**

- a. These issues were discussed at length during NBH's Quality Improvement Committee meetings. It was suggested that the Medical Provider Notification Form (MPNF) may not be very useful and that it may be more helpful to have psychiatric providers communicate with physical health care providers since they have a similar professional background. It was recommended that the NBH Quality Improvement Department meet with the provider centers quality improvement teams.
- b. The outcome at all meetings with the center's quality improvement committees was overwhelmingly positive in terms of wanting to improve communication and coordination of care between the mental health centers and medical providers. When asked about the difficulties of the current intervention, all of the mental health center committees indicated that that the MPNF was not helpful because it was too tedious and time consuming to fill out. Additionally, there was concern that front line staff did not have an opportunity to provide input in designing the form. Furthermore, many of the center's quality improvement committee's members stated that when the MPNF was faxed/mailed to the medical provider, typically the medical provider faxed medical records back to the mental health center. These medical records had limited utility for the front line staff. Similarly, it was also reported that front line staff had difficulty getting medical providers to return their telephone calls.
- c. Utilizing this feedback, the NBH Quality Improvement Department scheduled meetings with the mental health center's psychiatric teams. The result of these meeting was also very positive. The psychiatric teams at all three of NBH's mental health centers were open to working on a process that would enhance communication and coordination of care. However, most of the psychiatric providers also stated that they had limited free time and so the interventions would need to be relatively easy to implement and not be time consuming.

**4. Develop/implement interventions based on identified barriers.**

- a. Based upon the identified barriers, NBH will be working with the psychiatric teams and the center quality improvement departments to develop and implement an intervention to increase communication between the psychiatric providers and physical health care providers. Items currently being discussed include:
  - i. Refining the electronic medical record so that the psychiatric provider can easily document consultations with their patient's physical health care providers.
  - ii. Creating a standardized letter that the psychiatric providers can use to fax/mail to the physical health care provider that will succinctly detail the mental health issues.
- b. Tentative target date for implementation is September 1, 2008.

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

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

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

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

### **CMS Rationale**

#### ***Activity I. Appropriate Study Topic***

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

#### ***Activity II. Clearly Defined, Answerable Study Question***

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

#### ***Activity III. Clearly Defined Study Indicator(s)***

A study indicator is a quantitative or qualitative characteristic (variable) reflecting a discrete event (e.g., an older adult has/has not received an influenza vaccination in the last 12 months) or a status (e.g., a consumer's blood pressure is/is not below a specified level) that is to be measured.

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

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

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

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

#### ***Activity IV. Use a Representative and Generalizable Study Population***

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

#### ***Activity V. Valid Sampling Techniques***

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

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

### **Activity VI. Accurate/Complete Data Collection**

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

- ◆ Clear identification of the data to be collected.
- ◆ Identification of the data sources and how and when the baseline and repeat indicator data will be collected.
- ◆ Specification of who will collect the data.
- ◆ Identification of instruments used to collect the data.

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

1. The key to successful manual data collection is in the selection of the data collection staff. Appropriately qualified personnel with conceptual and organizational skills should be used to abstract the data. However, their specific skills should vary depending on the nature of the data collected and the degree of professional judgment required. For example, if data collection involves searching throughout the medical record to find and abstract information or judge whether clinical criteria were met, experienced clinical staff members, such as registered nurses, should collect the data. However, if the abstraction involves verifying the presence of a diagnostic test report, trained medical assistants or medical records clerks may be used.
2. Clear guidelines for obtaining and recording data should be established, especially if multiple reviewers are used to perform this activity. The BHO should determine the necessary qualifications of the data collection staff before finalizing the data collection instrument. An abstractor would need fewer clinical skills if the data elements within the data source are more clearly defined. Defining a glossary of terms for each project should be part of the training of abstractors to ensure consistent interpretation among project staff members.
3. The number of data collection staff members used for a given project affects the reliability of the data. A smaller number of staff members promote interrater reliability; however, it may also increase the amount of time it takes to complete this task. Intrarater reliability (i.e., reproducibility of judgments by the same abstractor at a different time) should also be considered (CMS PIP Protocol, page 12).

### **Activity VII. Appropriate Improvement Strategies**

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

An improvement strategy is defined as an intervention designed to change behavior at an institutional, practitioner, or consumer level. The effectiveness of the intervention activity or activities can be determined by measuring the BHO's change in performance according to predefined quality indicators. Interventions are key to an improvement project's ability to bring about improved health care outcomes. The BHO must identify and develop appropriate interventions for each PIP to ensure the likelihood of measurable change.

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

### ***Activity VIII. Sufficient Data Analysis and Interpretation***

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

### ***Activity IX. Real Improvement Achieved***

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

### ***Activity X. Sustained Improvement Achieved***

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

## Appendix C. Definitions and Explanations by Activity for Northeast Behavioral Health, LLC

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

Concepts	Definitions and Explanations
<b>Activity I. Appropriate Study Topic</b>	
<b>Broad spectrum of care</b>	<ul style="list-style-type: none"> <li>◆ 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).</li> <li>◆ 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).</li> </ul>
<b>Eligible population</b>	<ul style="list-style-type: none"> <li>◆ May be defined as consumers who meet the study population parameters.</li> </ul>
<b>Selected by the State</b>	<ul style="list-style-type: none"> <li>◆ 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.</li> </ul>
<b>Activity II. Clearly Defined, Answerable Study Question</b>	
<b>Study question</b>	<ul style="list-style-type: none"> <li>◆ 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.</li> <li>◆ Examples:               <ol style="list-style-type: none"> <li>1. Does educational outreach about immunizations increase the rates of immunizations for children 0–2 years of age?</li> <li>2. Does increasing flu immunizations for consumers with chronic asthma impact overall health status?</li> <li>3. Will increased planning and attention to follow-up after inpatient discharge improve the rate of mental health follow-up services?</li> </ol> </li> </ul>



Concepts	Definitions and Explanations
<b>Activity III. Clearly Defined Study Indicator(s)</b>	
<b>Study indicator</b>	<ul style="list-style-type: none"> <li>◆ 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.</li> <li>◆ 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.</li> </ul>
<b>Sources identified</b>	<ul style="list-style-type: none"> <li>◆ Documentation/background information that supports the rationale for the study topic, study question, and indicators.</li> <li>◆ Examples: HEDIS<sup>®1</sup> measures, medical community practice guidelines, evidence-based practices, or provider agreements.</li> <li>◆ Practice guideline examples: American Academy of Pediatrics and American Diabetes Association.</li> </ul>
<b>Activity IV. Use a Representative and Generalizable Study Population</b>	
<b>Eligible population</b>	<ul style="list-style-type: none"> <li>◆ Refers to consumers who are included in the study.</li> <li>◆ Includes age, conditions, enrollment criteria, and measurement periods.</li> <li>◆ 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.</li> </ul>
<b>Activity V. Valid Sampling Techniques</b>	
<b>True or estimated frequency of occurrence</b>	<ul style="list-style-type: none"> <li>◆ 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.</li> </ul>
<b>Sample size</b>	<ul style="list-style-type: none"> <li>◆ Indicates the size of the sample to be used.</li> </ul>
<b>Representative sample</b>	<ul style="list-style-type: none"> <li>◆ Refers to the sample reflecting the entire population.</li> </ul>
<b>Confidence level</b>	<ul style="list-style-type: none"> <li>◆ 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).</li> </ul>

<sup>1</sup> HEDIS<sup>®</sup> is a registered trademark of the National Committee for Quality Assurance (NCQA).



Concepts	Definitions and Explanations
<b>Activity VI. Accurate/Complete Data Collection</b>	
<b>Data elements</b>	<ul style="list-style-type: none"> <li>◆ Identification of data elements includes unambiguous definitions of data that will be collected (e.g., the numerator/denominator, laboratory values).</li> </ul>
<b>Interrater reliability (IRR)</b>	<ul style="list-style-type: none"> <li>◆ 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?</li> <li>◆ Examples: A policy that includes how IRR is tested, documentation of training, and instruments and tools used.</li> </ul>
<b>Algorithms</b>	<ul style="list-style-type: none"> <li>◆ The development of any systematic process that consists of an ordered sequence of steps. Each step depends on the outcome of the previous step.</li> <li>◆ 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)?</li> </ul>
<b>Data completeness</b>	<ul style="list-style-type: none"> <li>◆ 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.</li> <li>◆ 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.</li> </ul>

Concepts	Definitions and Explanations
<b>Activity VII. Appropriate Improvement Strategies</b>	
<b>Causes and barriers</b>	<ul style="list-style-type: none"> <li>◆ 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?</li> <li>◆ It is expected that interventions associated with improvement of quality indicators will be system interventions.</li> </ul>
<b>Standardized</b>	<ul style="list-style-type: none"> <li>◆ If the interventions result in successful outcomes, the interventions should continue and the BHO should monitor them to ensure that the outcomes remain.</li> <li>◆ 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.</li> </ul>
<b>Activity VIII. Sufficient Data Analysis and Interpretation</b>	
<b>Analysis plan</b>	<ul style="list-style-type: none"> <li>◆ Each study should have a plan for how data analysis will occur.</li> <li>◆ The HSAG review team will ensure that this plan was followed.</li> </ul>
<b>Generalization to the study population</b>	<ul style="list-style-type: none"> <li>◆ Study results can be applied to the general population with the premise that comparable results will occur.</li> </ul>
<b>Factors that threaten internal and external validity</b>	<ul style="list-style-type: none"> <li>◆ Did the analysis identify any factors (internal or external) that would threaten the validity of study results?</li> <li>◆ Example: There was a change in record extraction (e.g., a vendor was hired or there were changes in HEDIS methodology).</li> </ul>
<b>Presentation of the data analysis</b>	<ul style="list-style-type: none"> <li>◆ Results should be presented in tables or graphs with measurement periods, results, and benchmarks clearly identified.</li> </ul>
<b>Identification of initial measurement and remeasurement of study indicators</b>	<ul style="list-style-type: none"> <li>◆ Clearly identify in the report which measurement period the indicator results reflect.</li> </ul>
<b>Statistical differences between initial measurement and remeasurement periods</b>	<ul style="list-style-type: none"> <li>◆ The HSAG review team looks for evidence of a statistical test (e.g., a <i>t</i> test or Chi-square test).</li> </ul>
<b>Identification of the extent to which the study was successful</b>	<ul style="list-style-type: none"> <li>◆ The HSAG review team looks for improvement over several measurement periods.</li> <li>◆ 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.</li> </ul>

Concepts	Definitions and Explanations
<b>Activity IX. Real Improvement Achieved</b>	
<b>Remeasurement methodology is the same as baseline</b>	<ul style="list-style-type: none"> <li>◆ The HSAG review team looks to see that the study methodology remains the same for the entire study.</li> </ul>
<b>Documented improvement in processes or outcomes of care</b>	<ul style="list-style-type: none"> <li>◆ The study should document how interventions were successful in impacting system processes or outcomes.</li> <li>◆ Examples: There was a change in data collection or a rate increase or decrease demonstrated in graphs/tables.</li> </ul>
<b>Activity X. Sustained Improvement Achieved</b>	
<b>Sustained improvement</b>	<ul style="list-style-type: none"> <li>◆ 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.</li> </ul>