



Improving Healthcare  
for the Common Good

**Commonwealth of Pennsylvania  
Department of Public Welfare  
Office of Mental Health and Substance  
Abuse Services**

**Readmission within 30 Days of Inpatient  
Psychiatric Discharge  
External Quality Review Project  
Measurement Year 2009  
FINAL REPORT**

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## GLOSSARY OF TERMS

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<b>Average</b> (i.e., arithmetic mean or mean)	The sum of all items divided by the number of items in the list. All items have an equal contribution to the calculation; therefore this is un-weighted.
<b>Confidence Interval</b>	Confidence intervals (CIs) are ranges of values that can be used to illustrate the variability associated with a given calculation. For any rate, a 95% CI indicates that there is a 95% probability that the calculated rate, if it were measured repeatedly, would be within the range of values presented for that rate. All other things being equal, if any given rate were calculated 100 times, the calculated rate would fall within the CI 95 times, or 95% of the time.
<b>HealthChoices Aggregate Rate</b>	The sum of the total (i.e., all behavioral health (BH) managed care organization (MCO)) numerators divided by the total (i.e., sum of all BH MCOs) denominators.
<b>HealthChoices BH MCO Average</b>	The sum of the individual BH MCO rates divided by the total number of BH MCOs (five BH MCOs). Each BH MCO has an equal contribution to the HealthChoices BH MCO Average value.
<b>HealthChoices County Average</b>	The sum of the individual County rates divided by the total number of Counties (67 Counties). Each County has an equal contribution to the HealthChoices County Average value.
<b>Rate</b>	A proportion indicated as a percentage.
<b>Percentage Point Difference</b>	The arithmetic difference between two rates.
<b>Weighted Average</b>	Similar to an arithmetic mean (the most common type of average), where instead of each of the data points contributing equally to the final average, some data points contribute more than others.
<b>Statistical Significance</b>	In statistics, a result is described as statistically significant if it is unlikely to have occurred by chance. The use of the word significance in statistics is different from the standard one, which suggests that something is important or meaningful.
<b>Z-ratio</b>	The z-ratio expresses how far and in what direction the calculated rate diverged from the most probable result (i.e., the distribution's mean). Statistically significant differences (SSD) at the .05 level between groups are noted, as well as the percentage point difference (PPD) between the rates.

## BACKGROUND

This performance measure assessed the percentage of enrollees that were discharged from inpatient acute psychiatric care and subsequently readmitted to inpatient acute psychiatric care within 30 days of the initial discharge. This study examines behavioral health services provided to members participating in the HealthChoices (HC) Mandatory Medicaid Managed Care (MMC) behavioral health program in all 67 Counties of the Commonwealth. Five BH MCOs are subcontracted among the 67 Counties: Community Behavioral Health (CBH), Community Behavioral HealthCare Network of Pennsylvania (CBHNP), Community Care Behavioral Health (CCBH), Magellan Behavioral Health (MBH), and Value Behavioral Health of Pennsylvania (VBH). The participating Counties, grouped by BH MCO, are presented in Table 1.

**Table 1: BH MCOs and Participating Counties**

BH MCO	County				
CBH	Philadelphia				
CBHNP	Bedford	Cumberland	Fulton	Lycoming	
	Blair	Dauphin	Lancaster	Perry	
	Clinton	Franklin	Lebanon	Somerset	
CCBH	Adams	Clearfield	McKean	Sullivan	
	Allegheny	Columbia	Mifflin	Susquehanna	
	Berks	Elk	Monroe	Tioga	
	Bradford	Forest	Montour	Union	
	Cameron	Huntingdon	Northumberland	Warren	
	Carbon	Jefferson	Pike	Wayne	
	Centre	Juniata	Potter	Wyoming	
	Chester	Lackawanna	Schuylkill	York	
	Clarion	Luzerne	Snyder		
MBH	Bucks	Lehigh	Northampton		
	Delaware	Montgomery			
VBH	Armstrong	Crawford	Indiana	Washington	
	Beaver	Erie	Lawrence	Westmoreland	
	Butler	Fayette	Mercer		
	Cambria	Greene	Venango		

### Indicator Development

As directed by OMHSAS, IPRO developed the Readmission within 30 Days of Inpatient Psychiatric Discharge performance measure for implementation in 2008. Although first initiated in 2008, OMHSAS requested that the initial IPRO study in this area be a retrospective review of MY 2006 data. OMHSAS required the BH MCOs to perform another data collection and re-measurement of the performance measure soon thereafter in 2008 for MY 2007 data. The second re-measurement was conducted in 2009 based on MY 2008 data. This measure continues to be of interest to OMHSAS for the purposes of comparing current County and BH MCO rates to the OMHSAS performance goal and to prior years' rates.

The MY 2009 study is the third re-measurement of this indicator. In June 2010, the Counties and BH MCOs received draft indicator specifications, data file layouts, and flowcharts for the project. The MY 2009 re-measure had no significant changes as compared to MY 2008 in that the measure specifications were updated to reflect the current period of interest. Before the indicators were finalized, feedback was solicited from County and BH MCO staff. All comments and questions were taken into consideration. The final indicator specifications, data file layouts, and flowcharts were distributed in July 2010.

## METHODOLOGY

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A cross-sectional quality improvement study design was employed. The source for all information was administrative data provided to IPRO by the BH MCOs for each County evaluated in the current study. The source for all administrative data was the BH MCOs' transactional claims systems. A summary of the indicator is provided in Table 2.

**Table 2: Quality Indicator Summary**

Eligible Population	<p><u>Inclusion:</u> All members with one (or more) hospital discharge from any inpatient acute psychiatric care facility with a discharge date occurring between January 1 and December 1, 2009.</p> <p><u>Exclusion:</u> Members with discharges from non-acute mental health facilities (e.g., Residential Treatment or Rehabilitation Stays); members discharged from an acute hospitalization followed by a readmission or a direct transfer to a non-acute mental health facility.</p>
Denominator	All inpatient psychiatric discharges between January 1, 2009 and December 31, 2009. The denominator is based on the total number of discharges not enrollees. The claim must clearly indicate a qualifying discharge.
Numerator	Members who were readmitted to inpatient acute psychiatric care within 30 days of the previous inpatient psychiatric discharge.

### Validation Process

IPRO received data files and source code from the BH MCOs for validation. Each of the five BH MCOs submitted data on behalf of their respective County contractors. During this process, IPRO provided technical assistance and other support, as necessary. Any comments/questions regarding the source code and/or data were provided via detailed validation tools prepared by IPRO. The BH MCOs were given the opportunity to revise and resubmit both source code and/or data until the validation was finalized. Final review results were provided to each of the BH MCOs in writing, along with final BH MCO and applicable County rates. The BH MCOs were required to "sign off" on the rates as part of the final validation process. The finalized data files and rates were used by IPRO in the analysis and reporting phase of the study.

### Performance Goal

This is the fourth assessment of inpatient acute psychiatric readmission conducted by IPRO on the behalf of OMHSAS. OMHSAS designated the performance measure goal for the MY 2009 study as less than or equal to 10.0% for the participating BH MCOs and Counties.

## FINDINGS

This section represents MY 2009 performance measure rates for the HealthChoices program. In this analysis, the demographics of the study population are presented, followed by a breakdown of rates by BH MCO, County, race, age, gender, and ethnicity.

**\*\* This measure is an inverted rate, in that lower rates are preferable. \*\***

Year-to-year comparisons to MY 2008 and prior years' data are provided, where applicable. Additionally, as appropriate, disparate rates were calculated for various categories in the current study. The significance of the difference between two independent proportions was determined by calculating the z-ratio. Statistically significant differences (SSD) at the .05 level between groups are noted, as well as the percentage point difference (PPD) or absolute difference (AD) between rates.

Individual rates are also compared to the HealthChoices average for the applicable category. Rates statistically significantly greater than or less than the HealthChoices average are indicated. Each HealthChoices average takes the sum of the individual rates and divides the sum by the total number of sub-groups within the category. Therefore, all HealthChoices averages presented in this study are *not* weighted. Whether or not an individual rate performed statistically significantly below or above the HealthChoices average was determined by whether or not that rate's 95% confidence interval included the HealthChoices average for the category.

Lastly, aggregate rates are compared to the OMHSAS-designated performance measure goal of 10.0%. Individual BH MCO and County rates are *not* required to be statistically significantly below 10.0% in order to meet the performance measure goal.

### Overall Population Demographics

The demographic characteristics of the 48,019 discharges included in the MY 2009 study were examined. The overall number of discharges increased in MY 2009 from the 45,805 discharges included in the MY 2008 study, but the eligible study population maintained similar demographic characteristics as the MY 2008 data. The increase in discharges appears to be similar to the increase in HealthChoices members accessing behavioral health services in 2009 as compared to 2008. The distribution across the participating BH MCOs and Counties is presented in Table 3. The study population characteristics by race, age, gender, ethnic categories are displayed in Table 4.

**Table 3: Study Population Characteristics – Distribution by BH MCO and County**

Category	Frequency	% of Eligible Population	Category	Frequency	% of Eligible Population
<b>BH MCO</b>			<b>County</b>		
CBH	11,618	24.2%	Philadelphia	11,618	24.2%
			Bedford	137	0.3%
			Blair	389	0.8%
			Clinton	114	0.2%
			Cumberland	319	0.7%
			Dauphin	985	2.1%
CBHNP	4,801	10.0%	Franklin	335	0.7%
			Fulton	31	0.1%
			Lancaster	1,353	2.8%
			Lebanon	394	0.8%
			Lycoming	412	0.9%
			Perry	97	0.2%

Category	Frequency	% of Eligible Population	Category	Frequency	% of Eligible Population
<b>BH MCO</b>			<b>County</b>		
CCBH	15,241	31.7%	Somerset	235	0.5%
			Adams	146	0.3%
			Allegheny	5,158	10.7%
			Berks	1,165	2.4%
			Bradford	214	0.4%
			Cameron	27	0.1%
			Carbon	217	0.5%
			Centre	262	0.5%
			Chester	800	1.7%
			Clarion	155	0.3%
			Clearfield	472	1.0%
			Columbia	232	0.5%
			Elk	146	0.3%
			Forest	10	0.0%
			Huntingdon	170	0.4%
			Jefferson	276	0.6%
			Juniata	60	0.1%
			Lackawanna	810	1.7%
			Luzerne	1,241	2.6%
			McKean	217	0.5%
			Mifflin	229	0.5%
			Monroe	368	0.8%
			Montour	65	0.1%
			Northumberland	326	0.7%
			Pike	87	0.2%
			Potter	55	0.1%
			Schuylkill	607	1.3%
			Snyder	74	0.2%
			Sullivan	16	0.0%
			Susquehanna	82	0.2%
			Tioga	157	0.3%
			Union	69	0.1%
Warren	167	0.3%			
Wayne	121	0.3%			
Wyoming	55	0.1%			
York	985	2.1%			
MBH	7,996	16.7%	Bucks	1,329	2.8%
			Delaware	1,749	3.6%
			Lehigh	1,681	3.5%
			Montgomery	2,091	4.4%
			Northampton	1,146	2.4%
VBH	8,363	17.4%	Armstrong	265	0.6%
			Beaver	757	1.6%
			Butler	472	1.0%
			Cambria	622	1.3%
			Crawford	383	0.8%
			Erie	1,364	2.8%
Fayette	757	1.6%			

Category	Frequency	% of Eligible Population	Category	Frequency	% of Eligible Population
<b>BH MCO</b>			<b>County</b>		
			Greene	227	0.5%
			Indiana	272	0.6%
			Lawrence	377	0.8%
			Mercer	631	1.3%
			Venango	266	0.6%
			Washington	721	1.5%
			Westmoreland	1,249	2.6%

- The largest proportions of discharges in the current study were from Philadelphia and Allegheny Counties, which accounted for 24.2% and 10.7% of the study population, respectively.
- The smallest percentages of discharges in the study were from Forest and Sullivan Counties, which accounted for 0.02% and 0.03% of the study population, respectively.
- Among the five BH MCOs, CCBH had the largest population of discharges represented (31.7%), whereas CBHNP had the smallest proportion (10.0%).

**Table 4: Study Population Characteristics – Distribution by Race, Age, Gender, and Ethnicity**

Category	Frequency	% of Eligible Population
<b>Race</b>		
Black/African American	12,938	26.9%
American Indian/Alaskan Native	93	0.2%
Asian	304	0.6%
White	31,070	64.7%
Other/Chose Not to Respond	3,614	7.5%
Hawaiian/Pacific Islander	0	0.0%
<b>Age</b>		
Ages 0-20 years	12,957	27.0%
Ages 21-64 years	34,390	71.6%
Ages 65 years and Over	672	1.4%
Ages 21 and Over (Combined)	35,062	73.0%
<b>Gender</b>		
Female	24,236	50.5%
Male	23,783	49.5%
<b>Ethnicity</b>		
Hispanic	2,500	5.2%
Non-Hispanic	45,468	94.7%
Missing or Not Available	51	0.1%

- There was a similar proportion of discharges for females as for males (50.5% and 49.5%).
- The largest percentage of discharges, 71.6%, was for enrollees between 21-64 years of age at the time of hospital discharge.
- The majority of discharges, 64.7%, were for White enrollees, with Black/African Americans being the next largest racial group represented at 26.9%.
- Approximately 95% of the study population discharges were for Non-Hispanic enrollees.

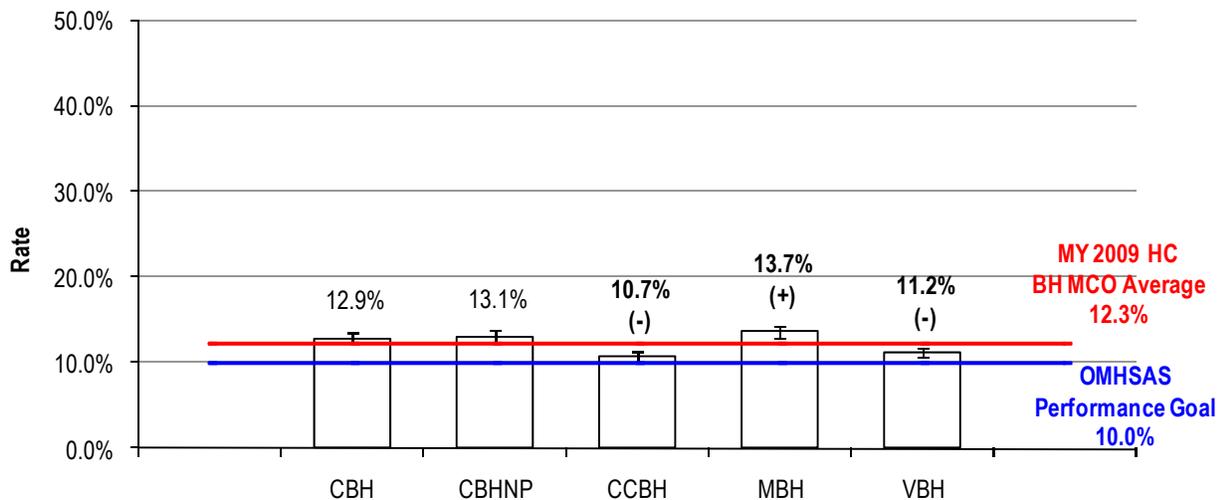
## Overall Indicator Rate

In MY 2009, 5,797 of the 48,019 discharges had a qualifying readmission, indicating an inpatient acute readmission rate of 12.1% (95% CI 11.8%, 12.4%) for the HealthChoices population. This is a statistically significant improvement of 0.7 percentage points as compared to the MY 2008 rate of 12.8%. The overall HealthChoices readmission rate for MY 2009 did not meet the OMHSAS performance goal of 10.0%. This measure is an inverted rate, in that lower rates are preferable.

## Readmission Rates by BH MCO

Figure 1 displays the MY 2009 readmission rates by BH MCO. BH MCO rates statistically significantly greater than or less than the MY 2009 HealthChoices BH MCO average of 12.3% are indicated. Figure 2 displays the year-to-year comparison of readmission rates by BH MCO. The OMHSAS performance goal of 10.0% is presented in both figures. BH MCO specific performance rates for MY 2009 with comparisons to MY 2008 data are presented in Table 5.

**Figure 1: MY 2009 Readmission Rates by BH MCO**

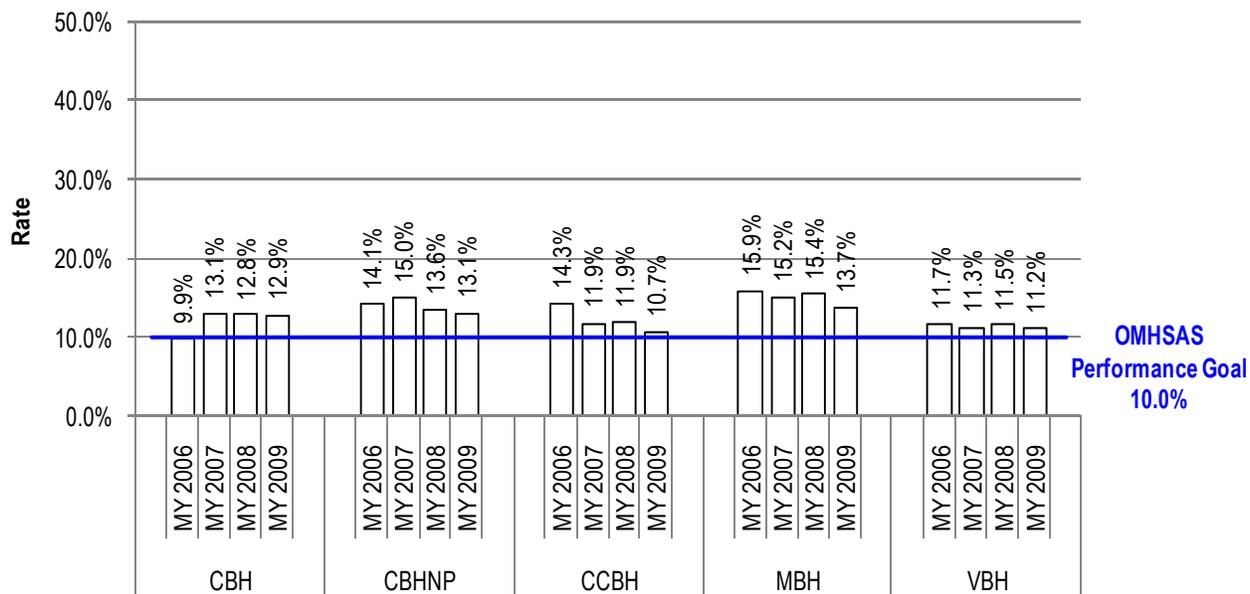


Note: Rates statistically significantly above and below the HC BH MCO Average are indicated in bold and (+) or (-), respectively.

**Table 5: MY 2009 Readmissions Rates and Year-to-Year Comparison by BH MCO**

Category	MY 2008			MY 2009			Rate Comparison (MY 2008 to MY 2009)	
	N	D	%	N	D	%	PPD	SSD
<b>BH MCO</b>								
CBH	1,485	11,584	12.8%	1,499	11,618	12.9%	0.1	No
CBHNP	609	4,491	13.6%	629	4,801	13.1%	-0.5	No
CCBH	1,721	14,518	11.9%	1,636	15,241	10.7%	-1.2	Yes
MBH	1,125	7,308	15.4%	1,098	7,996	13.7%	-1.7	Yes
VBH	911	7,904	11.5%	935	8,363	11.2%	-0.3	No

**Figure 2: Year-to-Year Readmission Rates by BH MCO**



- The MY 2009 HealthChoices BH MCO average was 12.3%. This is a decrease of 0.7 percentage points from the MY 2008 HealthChoices BH MCO average of 13.0%.
- The MY 2009 readmission rate for CCBH was the lowest at 10.7%.
- The MY 2009 readmission rates decreased for four of the five BH MCOs. The decrease was statistically significant for two BH MCOs (CCBH and MBH).
- None of the BH MCOs met the performance measure goal of 10.0% in MY 2009.
- The MY 2009 readmission rate for MBH was the highest at 13.7%. This is consistent with MY 2008, MY 2007, and MY 2006 findings, for which the readmission rates for MBH were the highest at 15.4%, 15.2%, and 15.9%, respectively.
- The MY 2009 rate for MBH was statistically significantly greater than the HealthChoices BH MCO average, while the rates for CCBH and VBH were statistically significantly less than the HealthChoices BH MCO average.

**Readmission Rates by County**

As indicated previously, all 67 Counties in Pennsylvania were evaluated in this study. Individual County rates are presented in Figure 3, and the rates are grouped into four categories as follows:

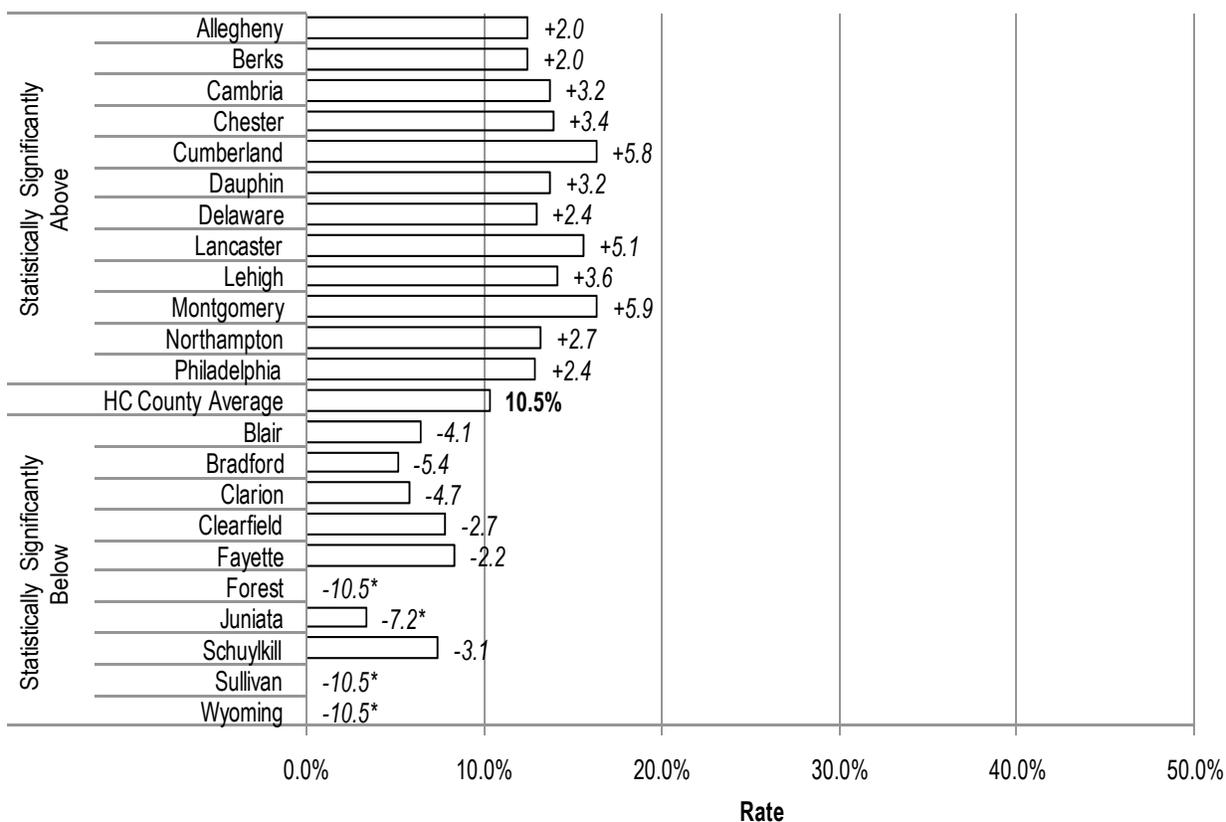
- Readmission rate less than 10.0% (Below performance goal)
- Readmission rate between 15.0% and 19.9%
- Readmission rate between 10.0% and 14.9%
- Less than 100 eligible discharges

Participating Counties with fewer than 100 eligible discharges are indicated in white due to the increased chance of variability in rates. Caution should be exercised when interpreting results for small denominators, as they produce rates that are less stable. Rates produced from small denominators are subject to greater variability, or greater margin of error.



Individual County rates were compared to the MY 2009 HealthChoices County average, and Counties that performed statistically significantly above or below the HealthChoices County average, are presented in Figure 4, along with the percentage point difference between the individual County rate and the HealthChoices County average.

**Figure 4: County Readmission Rates Compared to HealthChoices County Average**



Note: County rates represented by an asterisk (\*) are determined by less than 100 eligible discharges.

The individual County rates were also compared to MY 2008 rates to identify year-to-year differences when available. Those Counties with statistically significant differences noted from MY 2008 are presented in Table 6.

**Table 6: Year-to-Year Comparison by County**

Rate Statistically Significantly Increased Between MY 2008 and MY 2009	Rate Statistically Significantly Decreased Between MY 2008 and MY 2009	
Warren	Allegheny Beaver Butler	Dauphin Lebanon Washington

- The MY 2009 HealthChoices County average was 10.5%. This is a 0.2 percentage point increase from the MY 2008 HealthChoices County average of 10.3%.
- In MY 2009, rates for 20 Counties met the 10.0% performance goal. These Counties are Adams (8.9%), Beaver (9.0%), Blair (6.4%), Bradford (5.1%), Carbon (9.7%), Centre (8.8%), Clarion

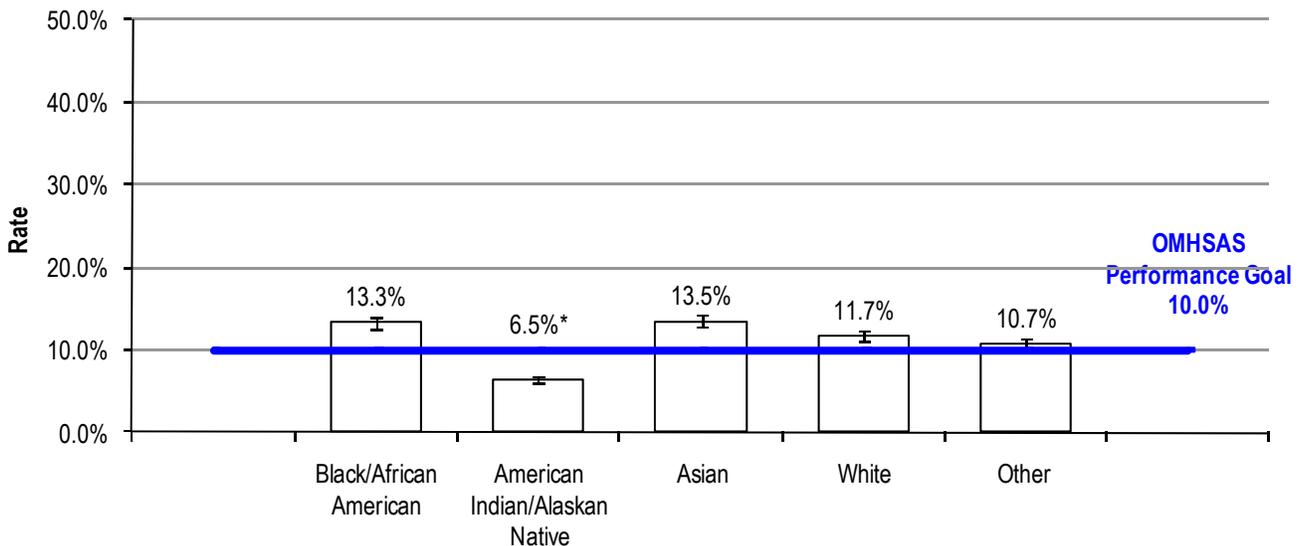
(5.8%), Clearfield (7.8%), Clinton (7.9%), Elk (6.9%), Fayette (8.3%), Jefferson (7.3%), Lackawanna (8.6%), Luzerne (9.1%), Mercer (9.2%), Mifflin (7.0%), Monroe (8.7%), Schuylkill (7.4%), Wayne (9.9%), and York (9.6%).

- The rates for Forest (0.0%), Juniata (3.3%), Pike (5.8%), Potter (9.1%), Snyder (5.4%), Sullivan (0.0%), Susquehanna (7.3%), and Wyoming (0.0%) Counties were also below the 10.0% performance goal. However, the rates were determined by less than 100 eligible discharges for each of these respective Counties. Caution should be exercised when interpreting results for small denominators, as they produce rates that are less stable.
- Rates for 10 Counties – Blair (6.4%), Bradford (5.1%), Clarion (5.8%), Clearfield (7.8%), Fayette (8.3%), Forest (0.0%), Juniata (3.3%), Schuylkill (7.4%), Sullivan (0.0%), and Wyoming (0.0%) – were statistically significantly less than the HealthChoices County average. It should be noted that the rates for Forest, Sullivan, and Wyoming Counties were determined by less than 100 eligible discharges for each respective County.
- Rates for 12 Counties – Allegheny (12.5%), Berks (12.5%), Cambria (13.7%), Chester (13.9%), Cumberland (16.3%), Dauphin (13.7%), Delaware (12.9%), Lancaster (15.6%), Lehigh (14.1%), Montgomery (16.4%), Northampton (13.2%), and Philadelphia (12.9%) – were statistically significantly greater than the HealthChoices County average.
- The rates for Allegheny, Beaver, Butler, Dauphin, Lebanon, and Washington Counties statistically significantly decreased, while the rate for Warren County statistically significantly increased in MY 2009 as compared to MY 2008.

### Readmission Rates by Race

Figure 5 shows the MY 2009 readmission rates for the HealthChoices population by race. The races include the following: Black/African American, American Indian/Alaskan Native, Asian, White, and Other or Chose Not to Respond. None of the discharges were indicated as Hawaiian/Pacific Islander for race. Year-to-year comparisons are provided in Table 7.

**Figure 5: MY 2009 Readmission Rates by Race**



Note: Rates determine by fewer than 100 eligible discharges are indicated with an asterisk (\*).

**Table 7: MY 2009 Readmissions Rates and Year-to-Year Comparison by Race**

Category	MY 2008			MY 2009			Rate Comparison (MY 2008 to MY 2009)	
	N	D	%	N	D	%	PPD	SSD
<b>Race</b>								
Black/African American	1,858	12,993	14.3%	1,722	12,938	13.3%	-1.0	Yes
American Indian/Alaskan Native	12	97	12.4%*	6	93	6.5%*	-5.9	No*
Asian	52	296	17.6%	41	304	13.5%	-4.1	No
White	3,549	29,141	12.2%	3,640	31,070	11.7%	-0.5	No
Other/Chose Not to Respond	380	3,278	11.6%	388	3,614	10.7%	-0.9	No
Hawaiian/Pacific Islander	0	0	NA	0	0	N/A	NA	NA

*\*Rate or comparison determined by less than 100 eligible discharges*

- The Asian population had the highest readmission rate of 13.5%, followed by the Black/African American population with a rate of 13.3%. This is consistent with MY 2008 findings.
- The lowest readmission rate was for the American Indian/Alaskan Native population (6.5%), although the rate was determined by less than 100 eligible discharges.
- The MY 2009 rate for the Black/African American population statistically significantly decreased as compared to MY 2008. Rates for all other race categories were comparable to MY 2008, in that changes were not statistically significant.

Table 8 shows a comparison of readmission rates between the Black/African American and White populations by BH MCO.

**Table 8: MY 2009 Readmissions Rates Race Comparison by BH MCO**

Category	Black	White	Rate Comparison	
	%	%	AD	SSD
<b>Overall</b>	13.3%	11.7%	1.6	No
<b>BH MCO</b>				
CBH	13.2%	12.8%	0.4	No
CBHNP	14.5%	13.2%	1.3	No
CCBH	12.6%	10.3%	2.3	Yes
MBH	14.6%	13.9%	0.7	No
VBH	13.5%	11.0%	2.5	Yes

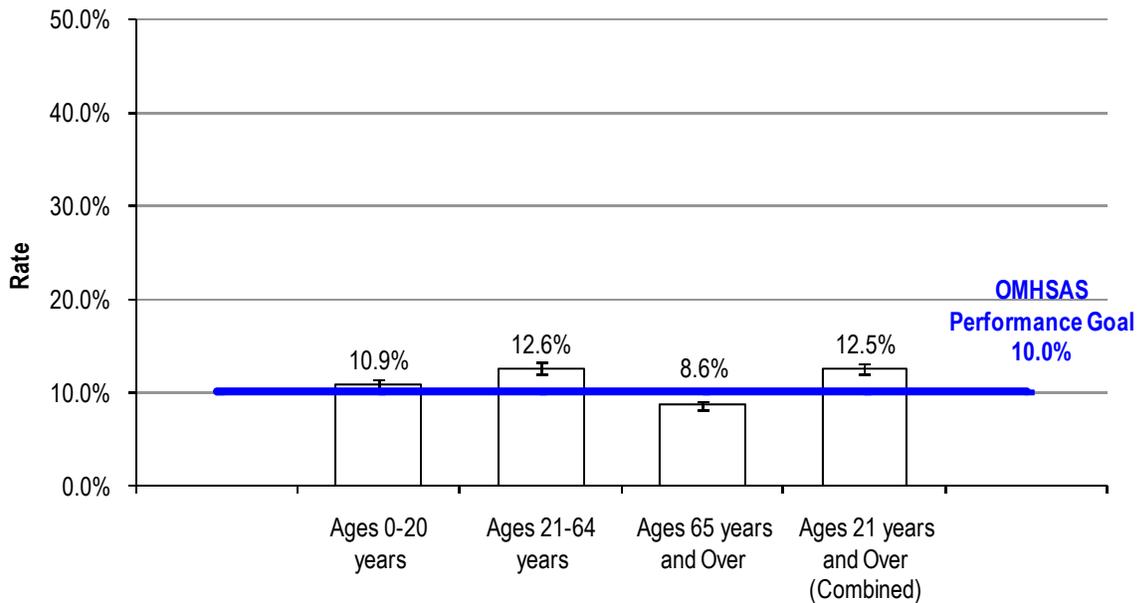
- In MY 2009, the readmission rate for the overall Black/African American population was *not* statistically significantly different from that for the White population. This is a notable improvement from prior measurement years, where rate disparity between the Black/African American and White racial groups as noted in the MY 2006, MY 2007, and MY 2008 studies.
- The highest Black/African American and White readmission rates were both noted for MBH, at 14.6% and 13.9%, respectively.
- The lowest Black/African American and White readmission rates were both noted for CCBH, at 12.6% and 10.3%, respectively.
- The readmission rate for the Black/African American population was statistically significantly higher than that of the White population for CCBH and VBH. Statistically significant differences were not indicated between these race categories for CBH, CBHNP, and MBH. In MY 2008, the rates for

Black/African Americans and Whites for CBH, CBHNP, and CCBH had been statistically significantly different.

### Readmission Rates by Age

Figure 6 represents the MY 2009 readmission rates for the participating HealthChoices population by age groups. Enrollee discharges were grouped into the following age cohorts: Ages 0-20 years, Ages 21-64 years, Ages 65 years and over, and a combined population of Ages 21 years and over. Year-to-year findings and a comparison of rates between the Ages 0-20 years and combined Ages 21 years and over groups are provided in Tables 9 and 10, respectively.

**Figure 6: MY 2009 Readmission Rates by Age**



**Table 9: MY 2009 Readmissions Rates and Year-to-Year Comparison by Age**

Category	MY 2008			MY 2009			Rate Comparison (MY 2008 to MY 2009)	
	N	D	%	N	D	%	PPD	SSD
<b>Age</b>								
Ages 0-20	1,304	11,985	10.9%	1,406	12,957	10.9%	0.0	No
Ages 21-64	4,507	33,216	13.6%	4,333	34,390	12.6%	-1.0	Yes
Ages 65 and over	40	604	6.6%	58	672	8.6%	2.0	No
Ages 21 and over (Combined)	4,547	33,820	13.4%	4,391	35,062	12.5%	-0.9	Yes

**Table 10: MY 2009 Readmissions Rates Age Comparison by BH MCO**

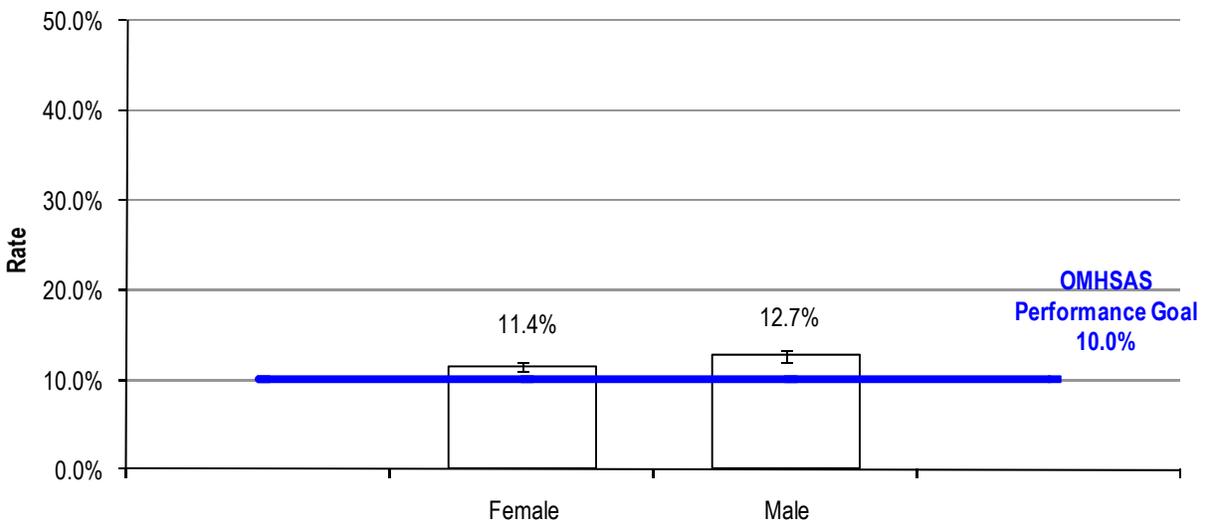
Category	Ages 0-20 years	Ages 21 years & Over	Rate Comparison	
	%	%	AD	SSD
<b>Overall</b>	10.9%	12.5%	1.6	Yes
<b>BH MCO</b>				
CBH	11.8%	13.2%	1.4	No
CBHNP	12.9%	13.2%	0.3	No
CCBH	8.9%	11.5%	2.6	Yes
MBH	12.5%	14.2%	1.7	No
VBH	10.4%	11.5%	1.1	No

- In MY 2009, Adults ages 21-64 years had the highest readmission rate at 12.6%, where as Adults ages 65 years and over had the lowest readmission rate at 8.6%.
- A statistically significant rate decrease was noted for the Ages 21-64 years group from MY 2008 to MY 2009.
- The readmission rate for the Ages 0-20 years population (10.9%) was statistically significantly lower than that for the combined Ages 21 years and over group (12.5%) by 1.6 percentage points. This disparity was consistent with findings from prior studies.
- The rate for the Ages 0-20 years cohort was not statistically significantly different than that for the Ages 21 years and over combined group for four of the five BH MCOs, the exception being CCBH.

**Readmission Rates by Gender**

Figure 7 displays the MY 2009 rates for the readmission indicator by gender. Additionally, Table 11 identifies year-to-year differences and Table 12 identifies comparison results between the two genders by BH MCO.

**Figure 7: MY 2009 Readmission Rates by Gender**



**Table 11: MY 2009 Readmissions Rates and Year-to-Year Comparison by Gender**

Category	MY 2008			MY 2009			Rate Comparison (MY 2008 to MY 2009)	
	N	D	%	N	D	%	PPD	SSD
<b>Gender</b>								
Female	2,781	23,276	12.0%	2,766	24,236	11.4%	-0.6	No
Male	3,070	22,529	13.6%	3,031	23,783	12.7%	-0.9	Yes

**Table 12: MY 2009 Readmissions Rates Gender Comparison by BH MCO**

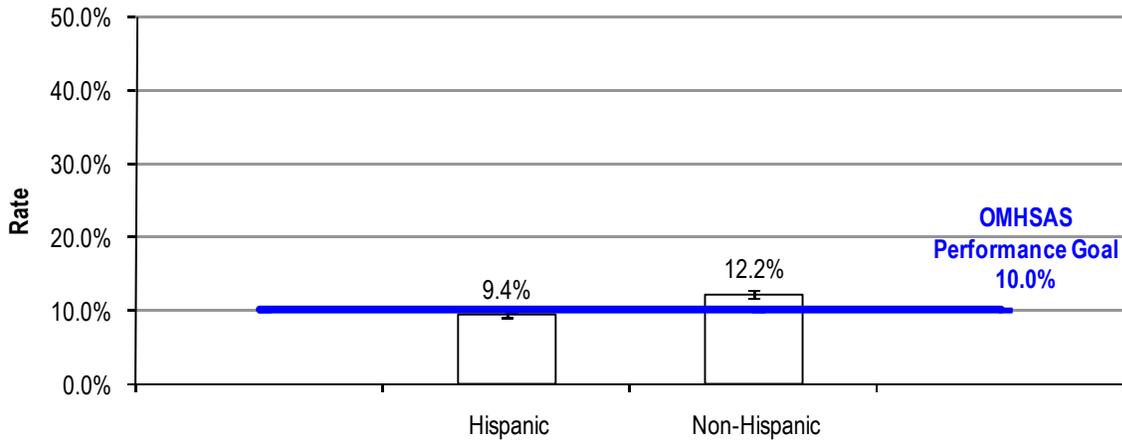
Category	Female	Male	Rate Comparison	
	%	%	AD	SSD
<b>Overall</b>	11.4%	12.7%	1.3	Yes
<b>BH MCO</b>				
CBH	11.8%	14.0%	2.2	Yes
CBHNP	13.3%	12.9%	0.4	No
CCBH	10.3%	11.2%	0.9	No
MBH	13.1%	14.4%	1.3	No
VBH	10.3%	12.0%	1.7	Yes

- The readmission rate for the female population was statistically significantly lower than that for the male population by 1.3 percentage points. This is consistent with findings from MY 2008 and MY 2007.
- The readmission rate for males statistically significantly decreased from MY 2008 to MY 2009.
- Among the five BH MCOs, CCBH had the lowest rates for both females (10.3%) and males (11.2%). CBHNP had the highest rate for females (13.3%), and MBH had the highest rate for males (14.4%).
- The readmission rate for the female population was statistically significantly lower than that of the male population for CBH and VBH.

### Readmission Rates by Ethnicity

Rates were assessed to determine if differences were noted between Hispanics and Non-Hispanics. These rates are shown in Figure 8. Year-to-year rate comparisons and rates by ethnicity for each BH MCO are provided in Tables 13 and 14, respectively, along with a comparison of rates denoting statistically significant differences.

**Figure 8: MY 2009 Readmission Rates by Ethnicity**



**Table 13: MY 2009 Readmissions Rates and Year-to-Year Comparison by Ethnicity**

Category	MY 2008			MY 2009			Rate Comparison (MY 2008 to MY 2009)	
	N	D	%	N	D	%	PPD	SSD
<b>Ethnicity</b>								
Hispanic	244	2,271	10.7%	234	2,500	9.4%	-1.3	No
Non-Hispanic	5,604	43,508	12.9%	5,551	45,468	12.2%	-0.7	Yes

**Table 14: MY 2009 Readmissions Rates Ethnicity Comparison by BH MCO**

Category	Hispanic	Non-Hispanic	Rate Comparison	
	%	%	AD	SSD
<b>Overall</b>	9.4%	12.2%	2.8	Yes
<b>BH MCO</b>				
CBH	10.1%	13.3%	3.2	Yes
CBHNP	9.7%	13.4%	3.7	Yes
CCBH	6.6%	10.9%	4.3	Yes
MBH	7.7%*	13.7%	6.0*	No*
VBH	8.6%	11.2%	2.6	No

*\*Rate or comparison determined by less than 100 eligible discharges*

- The overall readmission rate for the Hispanic population was statistically significantly lower than that for the Non-Hispanic group by 2.8 percentage points.
- The MY 2009 rate for Non-Hispanics statistically significantly decreased by 0.7 percentage points from MY 2008.
- The highest rate for Hispanic enrollees was noted for CBH (10.1%) and the lowest for CCBH (6.6%).
- MBH had the highest rate for Non-Hispanics (13.7%), and CCBH had the lowest (10.9%).
- The MY 2009 rates for Non-Hispanics were statistically significantly higher than those for Hispanics for CBH, CBHNP, and CCBH.

## CONCLUSIONS AND RECOMMENDATIONS

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### Conclusion

Overall, none of the BH MCOs met the OMHSAS designated performance goal of 10.0% for MY 2009. Of the 67 Counties that participated in the study, 20 Counties (30%) with greater than or equal to 100 eligible discharges met the performance goal. An additional 10 Counties (15%) with fewer than 100 eligible discharges also met the performance goal. Several observations were noted, as well as opportunities for improvement identified.

### By BH MCO

- Among the five BH MCOs evaluated, the lowest (i.e., best) readmission rate was observed for CCBH. The MY 2009 rates for CCBH and VBH were statistically significantly below the HealthChoices BH MCO average. The MY 2009 rates for CCBH and MBH statistically significantly decreased (i.e., improved) as compared to MY 2008. Note that this measure is inverted, in that lower rates are preferable.
- The readmission rate for MBH was the highest (i.e., poorest) among the five BH MCOs. The rate was also statistically significantly above the HealthChoices BH MCO average.
- Although, improvements were noted, none of the BH MCOs met the performance goal of less than 10.0%.

### By County

- Rates for 10 Counties – Blair, Bradford, Clarion, Clearfield, Fayette, Forest, Juniata, Schuylkill, Sullivan, and Wyoming – were statistically significantly less (i.e., better) than the HealthChoices County average. It should be noted that rates for Forest, Sullivan, and Wyoming Counties were determined by less than 100 eligible discharges for each respective County.
- Rates for 20 Counties met the 10.0% performance goal. These Counties are Adams, Beaver, Blair, Bradford, Carbon, Centre, Clarion, Clearfield, Clinton, Elk, Fayette, Jefferson, Lackawanna, Luzerne, Mercer, Mifflin, Monroe, Schuylkill, Wayne, and York.
- The rates for Forest, Juniata, Pike, Potter, Snyder, Sullivan, Susquehanna, and Wyoming Counties were also below the 10.0% performance goal. However, the rates were determined by less than 100 eligible discharges for each of these respective Counties. Caution should be exercised when interpreting results for small denominators.
- The rates for Allegheny, Beaver, Butler, Dauphin, Lebanon, and Washington Counties statistically significantly decreased (i.e., improved), while the rate for Warren County statistically significantly increased (i.e. worsened) in MY 2009 as compared to MY 2008.
- Rates for 12 Counties – Allegheny, Berks, Cambria, Chester, Cumberland, Dauphin, Delaware, Lancaster, Lehigh, Montgomery, Northampton, and Philadelphia – were statistically significantly greater than the HealthChoices County average.

### By Race

- Among the five races evaluated, the American Indian/Alaskan Native population had the lowest readmission rate, although the rate was determined by less than 100 eligible discharges.
- The MY 2009 rate for the Black/African American population statistically significantly decreased (i.e., improved) as compared to MY 2008.
- There was no statistically significant disparity noted between the rates for the Black/African American and White populations in MY 2009.
- The Asian population had the highest (i.e., worse) readmission rate, followed by the Black/African American population.

### By Age

- The readmission rate for the Age 65 years and over population is the lowest (i.e., best) among the three age cohorts studied.

- The readmission rate for the Ages 0-20 years population was statistically significantly lower (i.e., better) than that of the combined Ages 21 years and over group.
- The rate for the Age 21-64 years cohort was the highest (i.e., poorest), but was a statistically significant decrease (i.e., improvement) from MY 2008.

#### By Gender

- A statistically significantly lower (i.e., better) readmission rate was indicated for females as compared to males.
- The rate for males statistically significantly decreased (i.e., improved) in MY 2009 as compared to MY 2008.

#### By Ethnicity

- The readmission rate for Hispanics was statistically significantly lower (i.e., better) than that for the Non-Hispanics.
- The MY 2009 rate for Non-Hispanics statistically significantly decreased (i.e., improved) from MY 2008.

#### Recommendations

- IPRO recommends **continued annual evaluation** of Inpatient Readmission after Psychiatric Discharge rates for OMHSAS contracted Counties and their subcontracted BH MCOs. **Ongoing comparison of current year rates to prior years' performance** should also be assessed to determine the extent to which BH MCOs and Counties are able to improve their readmission rates and meet or exceed the OMHSAS set performance measure goal.
- The Counties and BH MCOs participating in this study should **evaluate the current interventions in place** to assess how these interventions affected change in readmission rates from MY 2008 and MY 2007. Additionally, current interventions should be assessed to determine whether they should be continued, abandoned and/or expanded in order to have a greater impact on their respective inpatient acute readmission rates when re-measured for MY 2010.
- Given that none of the BH MCOs met the performance goal for MY 2009, BH MCOs are encouraged to **make Inpatient Readmission After Psychiatric Discharge a focus for ongoing quality improvement activity.**
- The BH MCOs and Counties are encouraged to **conduct root cause analyses** to help determine what factors are negatively impacting readmission rates.
- BH MCO and County **case review of those individuals** that had an inpatient psychiatric readmission in less than 30 days is recommended. The additional review should among other things determine the extent to which those individuals had evidence of ambulatory follow-up/aftercare visit(s) during the interim period.
- **Each BH MCO should conduct additional analyses of the data** in order to determine if any other trends are noted. For example, higher readmission rates may be associated with those individuals with particular diagnoses or co-occurring conditions such as substance abuse and/or addiction. Targeted analyses such as these should be evaluated as part of any root cause analysis. In addition, BH MCO and Counties are encouraged to **review the findings of the readmission study in conjunction with follow-up after hospitalization rates.**
- **Case management consideration should be given to those individuals who appear to be the highest utilizers** of inpatient acute psychiatric care and have shown to be at risk for frequent readmission.
- BH MCOs and Counties that have demonstrated a statistically significant decline in readmission for MY 2009 should be asked to **share best practices** with other entities with the hope of identifying interventions that result in performance improvement.
- BH MCOs, especially those that operate in or represent Counties in close proximity, are encouraged to **work on this issue collaboratively.**
- Disparities in rates between demographic populations continue to persist. It is important for each BH MCO to continue to **target interventions to the demographic populations that do not**

**perform as well as their counterparts.** Furthermore, it is essential to ensure that **improvements are consistent, sustained across measurement years, and applicable to all groups.**