

Readmission within 30 Days of Inpatient Psychiatric Discharge

Commonwealth of Pennsylvania Department of Public Welfare (DPW)

Office of Mental Health and Substance Abuse Services (OMHSAS)

Measurement Year (MY) 2008 Behavioral Health Performance Measure

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. This includes the Lehigh/Capital, North/Central County Option, North/Central State Option, Northeast, Southeast, and Southwest regions of the Commonwealth of Pennsylvania. The North/Central County Option region and its 15 accompanying Counties are new additions to the 52 Counties studied in MY 2007. 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). Table 1 below summarizes the participating regions by measurement year. The participating Counties, grouped by BH MCO, are presented in Table 2.

Table 1 Region Participation by Measurement Year			
Region	MY 2006 Study	MY 2007 Study	MY 2008 Study
Lehigh/Capital	✓	✓	✓
North/Central County Option			✓
North/Central State Option		✓	✓
Northeast		✓	✓
Southeast	✓	✓	✓
Southwest	✓	✓	✓

✓ Indicates participation in study

Table 2 BH MCOs and Participating Counties			
CBH	Philadelphia		
CBHNP	Bedford	Dauphin	Lebanon
	Blair	Franklin	Lycoming
	Clinton	Fulton	Perry
	Cumberland	Lancaster	Somerset
CCBH	Adams	Forest	Potter
	Allegheny	Huntingdon	Schuylkill
	Berks	Jefferson	Snyder
	Bradford	Juniata	Sullivan
	Cameron	Lackawanna	Susquehanna
	Carbon	Luzerne	Tioga
	Centre	McKean	Union
	Chester	Mifflin	Warren
	Clarion	Monroe	Wayne
	Clearfield	Montour	Wyoming

Table 2 BH MCOs and Participating Counties			
	Columbia Elk	Northumberland Pike	York
MBH	Bucks Delaware	Lehigh Montgomery	Northampton
VBH	Armstrong Beaver Butler Cambria Crawford	Erie Fayette Greene Indiana Lawrence	Mercer Venango Washington Westmoreland

Indicator Development and Validation Process

As directed by OMHSAS, IPRO developed the Readmission within 30 Days of Inpatient Psychiatric Discharge performance measure for implementation in 2008. Although initiated in 2008, OMHSAS requested that the first IPRO study in this area be focused on 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. 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 the prior years' rates.

The MY 2008 study is the second re-measurement of this indicator. In July 2009, the participating Counties and BH MCOs received draft indicator specifications and flowcharts for the project. The MY 2008 re-measure had no significant changes as compared to MY 2007. The measure specifications were only 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 and flowcharts were distributed in August 2009.

As with prior studies, 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 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.

Methodology

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 participating 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 3.

Table 3 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, 2008.</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, 2008 and December 31, 2008. 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.

Performance Goal

This is the third assessment of acute inpatient psychiatric readmission conducted by IPRO on the behalf of OMHSAS. The baseline measurement year for the indicator is MY 2006. As with MY 2006 and MY 2007, OMHSAS designated the performance measure goal for the MY 2008 study as less than or equal to 10.0% for the participating BH MCOs and Counties.

Analysis and Major Findings

This section represents MY 2008 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, region, race, age, gender, and ethnicity.

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

Year-to-year comparisons to MY 2007 and MY 2006 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 above and below the HealthChoices average are indicated. The 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, County, and region 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 45,805 discharges included in the MY 2008 study were examined. The overall number of discharges increased in MY 2008 from the 39,922 discharges included in the MY 2007 study, but the eligible study population maintained similar demographic characteristics as the MY 2007 data. The distribution across the participating BH MCOs, Counties, and regions is presented in Tables 4 and 5. The study population characteristics by race, age, gender, and ethnic categories are displayed in Table 6.

Table 4 Study Population Characteristics – Distribution by BH MCO and County					
Category	Frequency	% of Eligible Population	Category	Frequency	% of Eligible Population
BH MCO			County		
CBH	11,584	25.3%	Philadelphia	11,584	25.3%
CBHNP	4,491	9.8%	Bedford	119	0.3%
			Blair	473	1.0%
			Clinton	105	0.2%
			Cumberland	308	0.7%
			Dauphin	881	1.9%
			Franklin	320	0.7%
			Fulton	32	0.1%
			Lancaster	1,231	2.7%
			Lebanon	379	0.8%
			Lycoming	356	0.8%
			Perry	70	0.2%
			Somerset	217	0.5%
CCBH	14,518	31.7%	Adams	109	0.2%
			Allegheny	5,296	11.6%
			Berks	892	1.9%
			Bradford	236	0.5%
			Cameron	29	0.1%
			Carbon	162	0.4%
			Centre	259	0.6%
			Chester	751	1.6%
			Clarion	133	0.3%
			Clearfield	498	1.1%
			Columbia	205	0.4%
			Elk	146	0.3%
			Forest	6	0.0%
			Huntingdon	127	0.3%
			Jefferson	240	0.5%
			Juniata	63	0.1%
			Lackawanna	809	1.8%
			Luzerne	1,200	2.6%
			McKean	207	0.5%
			Mifflin	248	0.5%
			Monroe	270	0.6%
			Montour	78	0.2%

Table 4 Study Population Characteristics – Distribution by BH MCO and County

Category	Frequency	% of Eligible Population	Category	Frequency	% of Eligible Population
BH MCO			County		
			Northumberland	321	0.7%
			Pike	61	0.1%
			Potter	64	0.1%
			Schuylkill	603	1.3%
			Snyder	67	0.1%
			Sullivan	11	0.0%
			Susquehanna	63	0.1%
			Tioga	120	0.3%
			Union	60	0.1%
			Warren	160	0.3%
			Wayne	101	0.2%
			Wyoming	52	0.1%
			York	871	1.9%
MBH	7,308	16.0%	Bucks	1,042	2.3%
			Delaware	1,704	3.7%
			Lehigh	1,663	3.6%
			Montgomery	1,865	4.1%
			Northampton	1,034	2.3%
VBH	7,904	17.3%	Armstrong	282	0.6%
			Beaver	647	1.4%
			Butler	512	1.1%
			Cambria	631	1.4%
			Crawford	395	0.9%
			Erie	1,076	2.3%
			Fayette	723	1.6%
			Greene	234	0.5%
			Indiana	278	0.6%
			Lawrence	399	0.9%
			Mercer	545	1.2%
			Venango	254	0.6%
			Washington	783	1.7%
			Westmoreland	1,145	2.5%

- The largest proportions of discharges in the current study were from Philadelphia and Allegheny Counties, which accounted for 25.3% and 11.6% of the study population, respectively.
- The smallest percentages of discharges in the study were from Forest and Sullivan Counties, which accounted for 0.01% and 0.02% of the study population, respectively.
- Among the five BH MCOs, CCBH had the largest population of discharges represented (31.7%), whereas CBHNP had smallest (9.8%).

Table 5 Study Population Characteristics – Distribution by Region

Category	Frequency	% of Eligible Population
Region		
Lehigh/Capital	7,438	16.2%
North/Central County Option	5,016	11.0%
North/Central State Option	3,982	8.7%
Northeast	2,124	4.6%
Southeast	16,946	37.0%
Southwest	10,299	22.5%

- The largest percentage of discharges in the study population was from the Southeast region, at 37.0%, while the lowest percentage of discharges was observed in the Northeast at 4.6%.

Table 6 Study Population Characteristics – Distribution by Race, Age, Gender, and Ethnicity

Category	Frequency	% of Eligible Population
Race		
Black/African American	12,993	28.4%
American Indian/Alaskan Native	97	0.2%
Asian	296	0.6%
White	29,141	63.6%
Other/Chose Not to Respond	3,278	7.2%
Hawaiian/Pacific Islander	0	0.0%
Age		
Ages 0-20 years	11,985	26.2%
Ages 21-64 years	33,216	72.5%
Ages 65 years and Over	604	1.3%
Ages 21 and Over (Combined)	33,820	73.8%
Gender		
Female	23,276	50.8%
Male	22,529	49.2%
Ethnicity		
Hispanic	2,271	5.0%
Non-Hispanic	43,508	95.0%
Missing or Not Available	26	0.0%

- A higher proportion of discharges for females (50.8%) than males (49.2%) were represented in the study population.
- The largest percentage of discharges, 72.5%, was for enrollees between 21-64 years of age, at the time of their hospital discharge.
- The majority of discharges, 63.6%, were for White enrollees, with Black/African Americans being the next largest racial group represented at 28.4%.
- Approximately 95% of the study population discharges were for Non-Hispanic enrollees with regard to ethnicity.

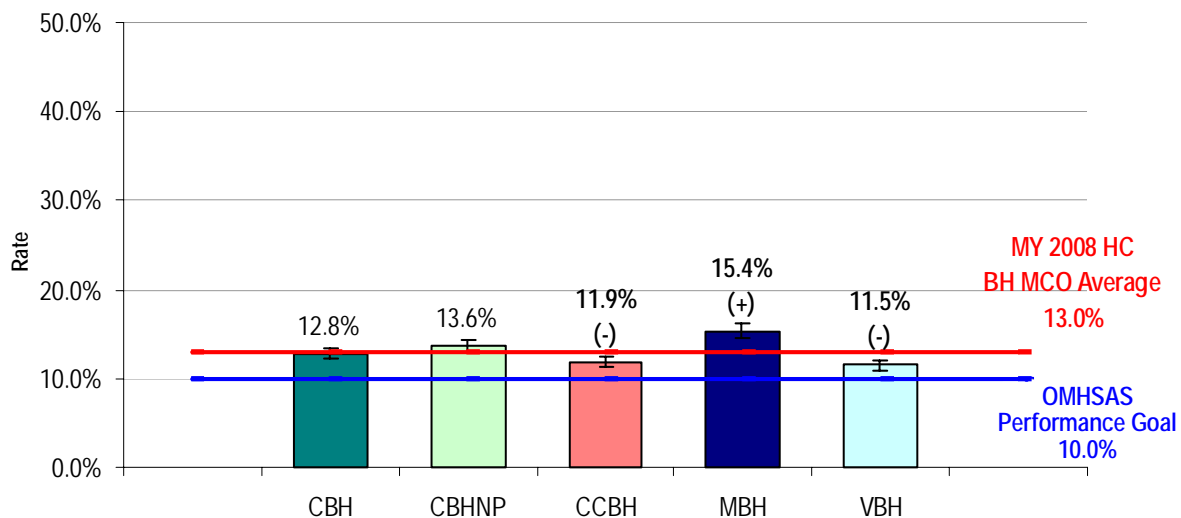
Overall Indicator Rate

In MY 2008, 5,851 of the 45,805 discharges had a qualifying readmission, indicating an inpatient acute readmission rate of 12.8% (95% CI 12.5%, 13.1%) for the HealthChoices population. This is a decline in the readmission rate by less than one percentage point as compared to the MY 2007 rate of 12.9%, and MY 2006 rate of 13.1%. The change as compared to MY 2007 was *not* statistically significant. As with the prior year, the overall HealthChoices readmission rate for MY 2008 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 2008 readmission rates by BH MCO. BH MCO rates statistically significantly above or below the HealthChoices BH MCO average 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 2008 with comparisons to MY 2007 data are presented in Table 7.

Figure 1: MY 2008 Readmission Rates by BH MCO



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

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

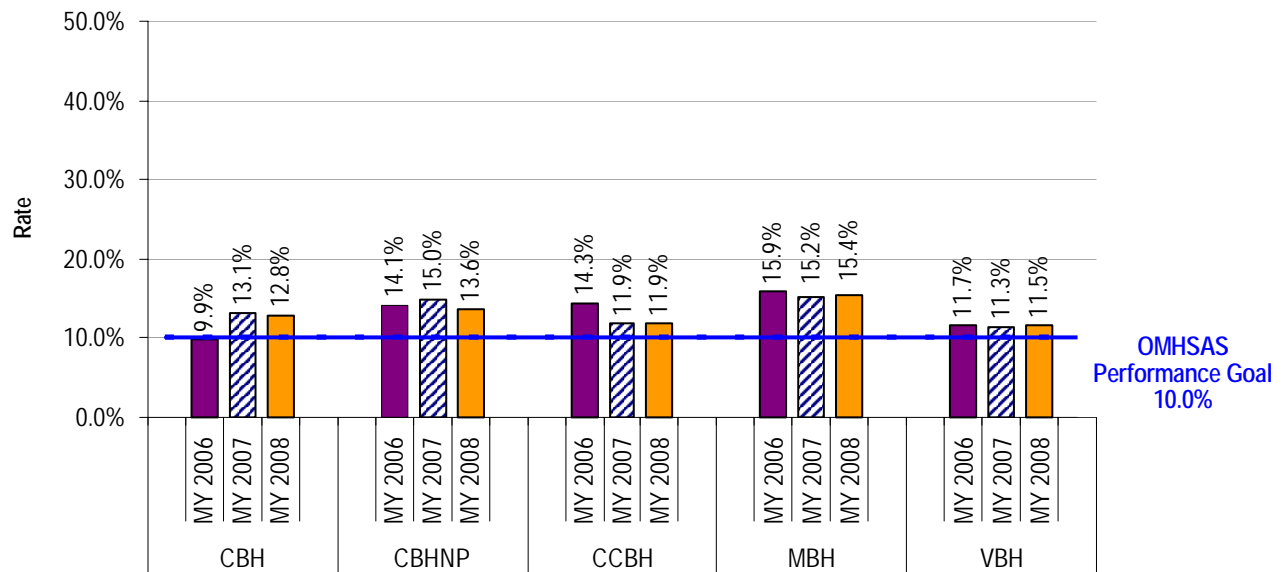






Table 7 MY 2008 Readmissions Rates and Year-to-Year Comparison by BH MCO

Category	MY 2007			MY 2008			Rate Comparison (MY 2007 to MY 2008)	
	N	D	%	N	D	%	PPD	SSD
BH MCO								
CBH	1,429	10,949	13.1%	1,485	11,584	12.8%	-0.3	No
CBHNP	408	2,719	15.0%	609	4,491	13.6%	-1.4	No
CCBH	1,643	13,863	11.9%	1,721	14,518	11.9%	0.0	No
MBH	1,091	7,198	15.2%	1,125	7,308	15.4%	0.2	No
VBH	588	5,193	11.3%	911	7,904	11.5%	0.2	No

- This measure is an inverted rate, in that lower rates are preferable.
- The HealthChoices BH MCO average was 13.0% in MY 2008. This is a decrease of 0.3 percentage point from the HealthChoices BH MCO average of 13.3% in MY 2007.
- The MY 2008 readmission rate for MBH was the highest at 15.4%. This is consistent with both the MY 2007 and MY 2006 findings, for which the readmission rates for MBH were the highest at 15.2% and 15.9%, respectively.
- The MY 2008 readmission rate for VBH was the lowest at 11.5%. This is consistent with MY 2007 findings, where the readmission rate for VBH was the lowest at 11.3%.
- The MY 2008 rate for MBH was statistically significantly above the HealthChoices BH MCO average.
- The MY 2008 rates for CCBH and VBH were statistically significantly below the HealthChoices BH MCO average.
- None of the BH MCOs met the performance measure goal of 10.0% in MY 2008.
- The rate changes between MY 2007 and MY 2008 were not statistically significant for any of the BH MCOs.

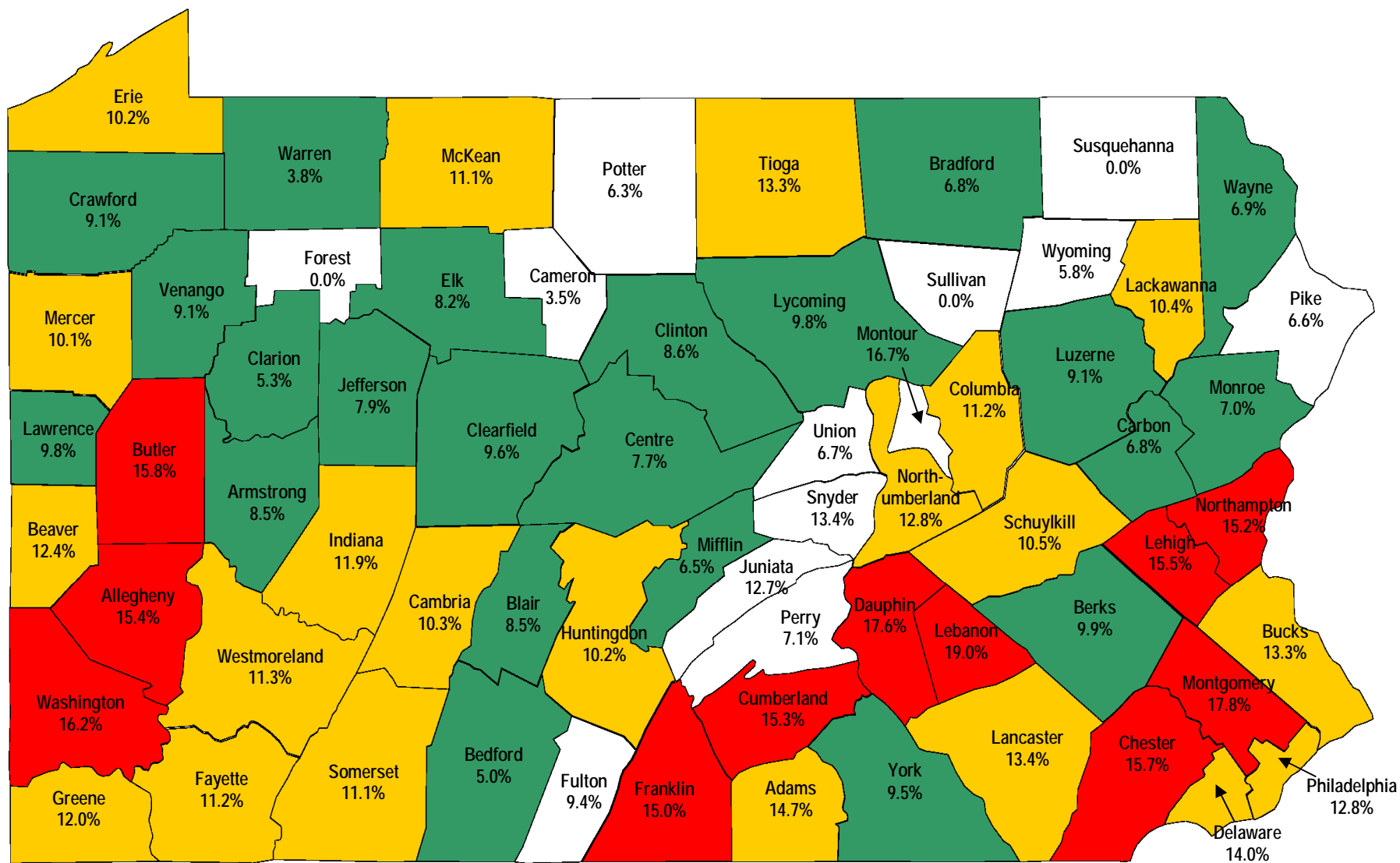
Readmission Rates by County

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 |

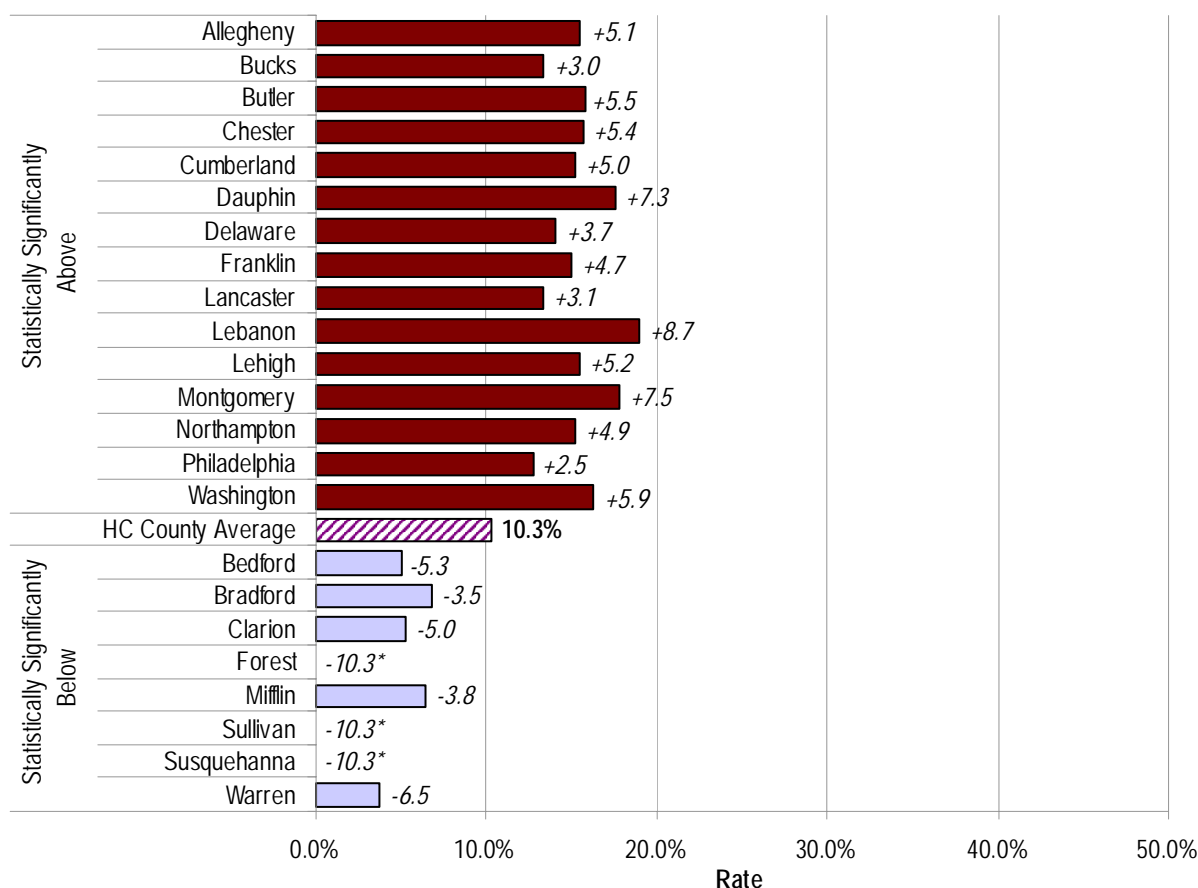
Participating Counties with fewer than 100 eligible discharges are indicated in white due to the increased chance of variability in rates. Caution should be exercised when interpreting results for small denominators, as they produce rates that are less stable. Rates produced from small denominators are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

Figure 3: MY 2008 Readmission Rates by County



Individual County rates were compared to the MY 2008 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

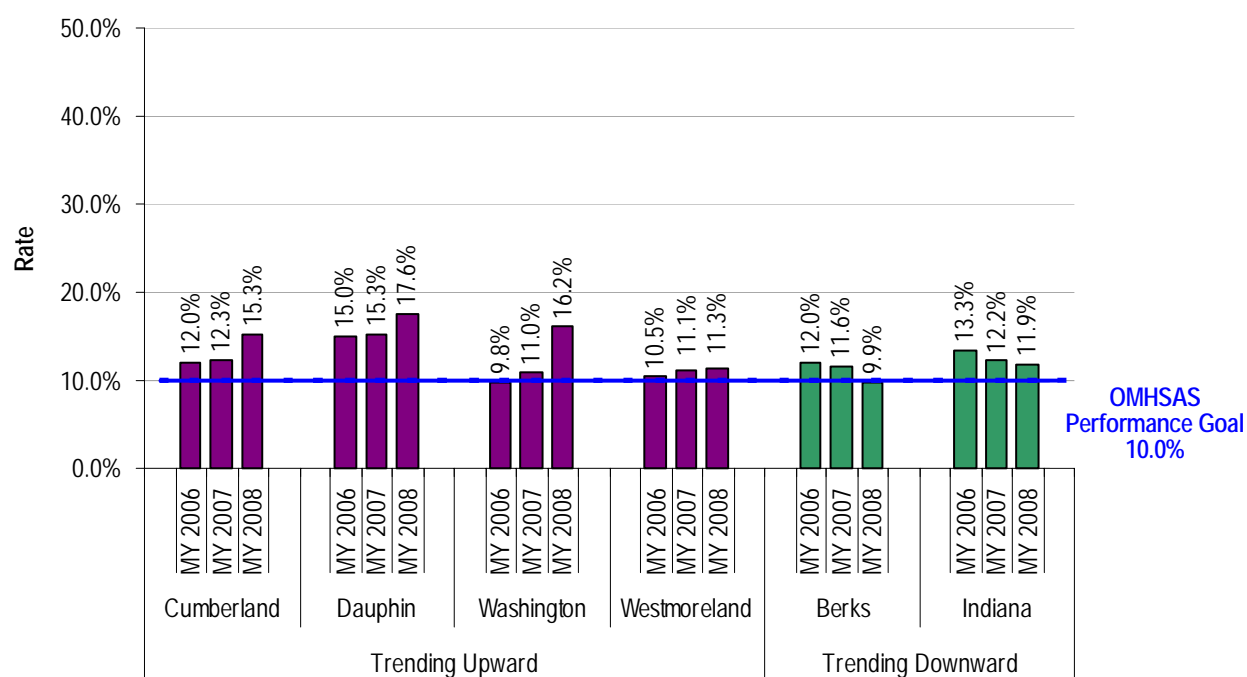


Note: Counties with fewer than 100 eligible discharges are indicated with an asterisk (*).

The individual County rates were also compared to MY 2007 rates to identify year-to-year differences when available. Statistically significant differences are presented in Table 8. Counties that participated in all three studies (MY 2006, MY 2007, and MY 2008) are further evaluated on the year-to-year direction of their rates. County rates that show notable upward or downward trends within the three-year timeframe are displayed in Figure 5. Respectively, an upward or downward trend is characterized by rate increases or decreases between the MY 2006 and MY 2007 measurements, as well as between the MY 2007 and MY 2008 measurements. Year-to-year changes are *not* required to be statistically significant to be considered as a notable trend.

Table 8 Year-to-Year Comparison by County	
Rate Statistically Significantly <i>Increased</i> Between MY 2007 and MY 2008	Rate Statistically Significantly <i>Decreased</i> Between MY 2007 and MY 2008
Allegheny Butler Washington	Centre Delaware Lawrence Warren

Figure 5: Year-to-Year Trends by County



Note: Year-to-year rate differences are *not* required to be statistically significant to be considered a notable trend.

- This measure is an inverted rate, in that lower rates are preferable.
- The HealthChoices County average was 10.3% in MY 2008. This is a 0.8 percentage point decrease from the MY 2007 HealthChoices County average of 11.1%.
- In MY 2008, rates for 22 Counties met the 10.0% performance goal. These Counties are Armstrong (8.5%), Bedford (5.0%), Berks (9.9%), Blair (8.5%), Bradford (6.8%), Carbon (6.8%), Centre (7.7%), Clarion (5.3%), Clearfield (9.6%), Clinton (8.6%), Crawford (9.1%), Elk (8.2%), Jefferson (7.9%), Lawrence (9.8%), Luzerne (9.1%), Lycoming (9.8%), Mifflin (6.5%), Monroe (7.0%), Venango (9.1%), Warren (3.8%), Wayne (6.9%), and York (9.5%).
- The rates for Cameron (3.5%), Forest (0.0%), Fulton (9.4%), Perry (7.1%), Pike (6.6%), Potter (6.3%), Sullivan (0.0%), Susquehanna (0.0%), Union (6.7%), and Wyoming (5.8%) 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 eight Counties – Bedford (5.0%), Bradford (6.8%), Clarion (5.3%), Forest (0.0%), Mifflin (6.5%), Sullivan (0.0%), Susquehanna (0.0%), and Wayne (6.9%) – were statistically significantly below the HealthChoices County average, although rates for Forest, Sullivan, and Susquehanna Counties were determined by less than 100 eligible discharges for each respective County.
- Rates for 15 Counties – Allegheny (15.4%), Bucks (13.3%), Butler (15.8%), Chester (15.7%), Cumberland (15.3%), Dauphin (17.6%), Franklin (15.0%), Lancaster (13.4%), Lebanon (19.0%), Lehigh (15.5%), Montgomery (17.8%), Northampton (15.2%), Philadelphia (12.8%), and Washington (16.2%) – were statistically significantly above the HealthChoices County average.
- For those Counties that could be compared to MY 2007, the rates for Centre, Delaware, Lawrence, and Warren Counties statistically significantly decreased, while the rates for Allegheny, Butler, and Washington Counties statistically significantly increased in MY 2008.
- Within the three-year timeframe from MY 2006 to MY 2008, the rates for Cumberland, Dauphin, Washington, and Westmoreland Counties trended upwards (i.e., increased). The rates for Berks and Indiana Counties trended downwards (i.e., decreased).

Readmission Rates by Region

Regional indicator performance was also evaluated. Figure 6 displays the overall rates by the Lehigh/Capital, North/Central County Option, North/Central State Option, Northeast, Southeast, and Southwest regions. Year-to-year comparisons are provided in Table 9 and Figure 7.

Figure 6: MY 2008 Readmission Rates by Region

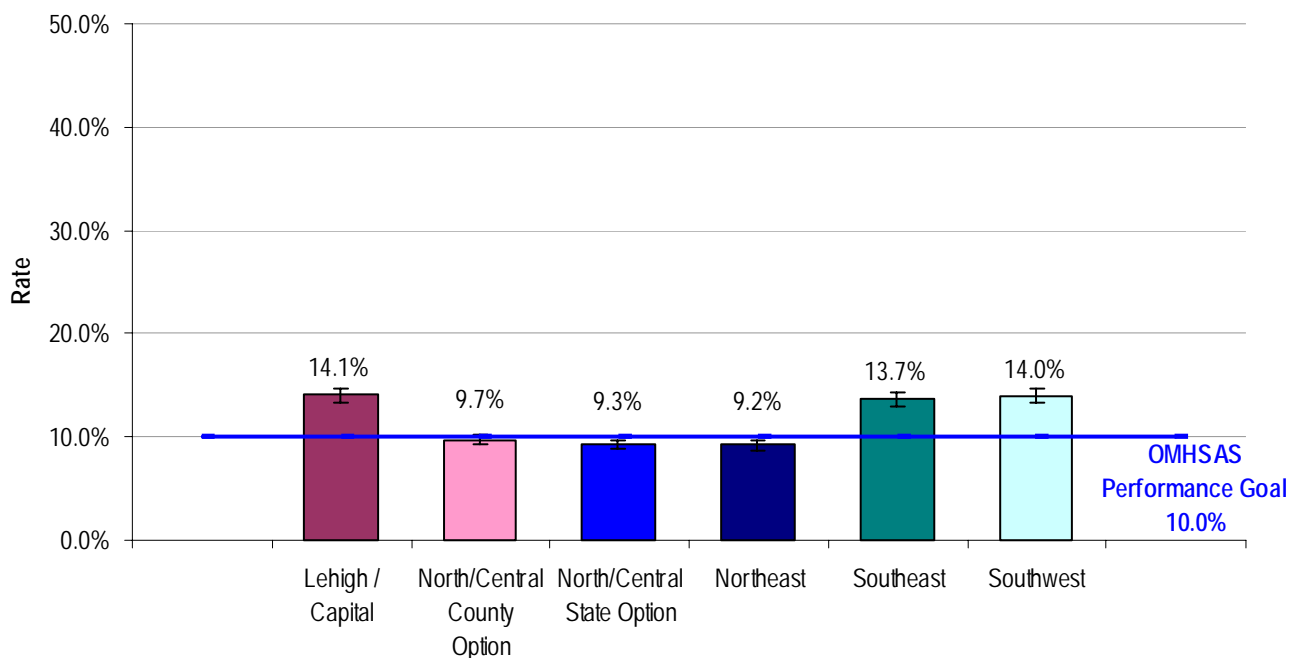
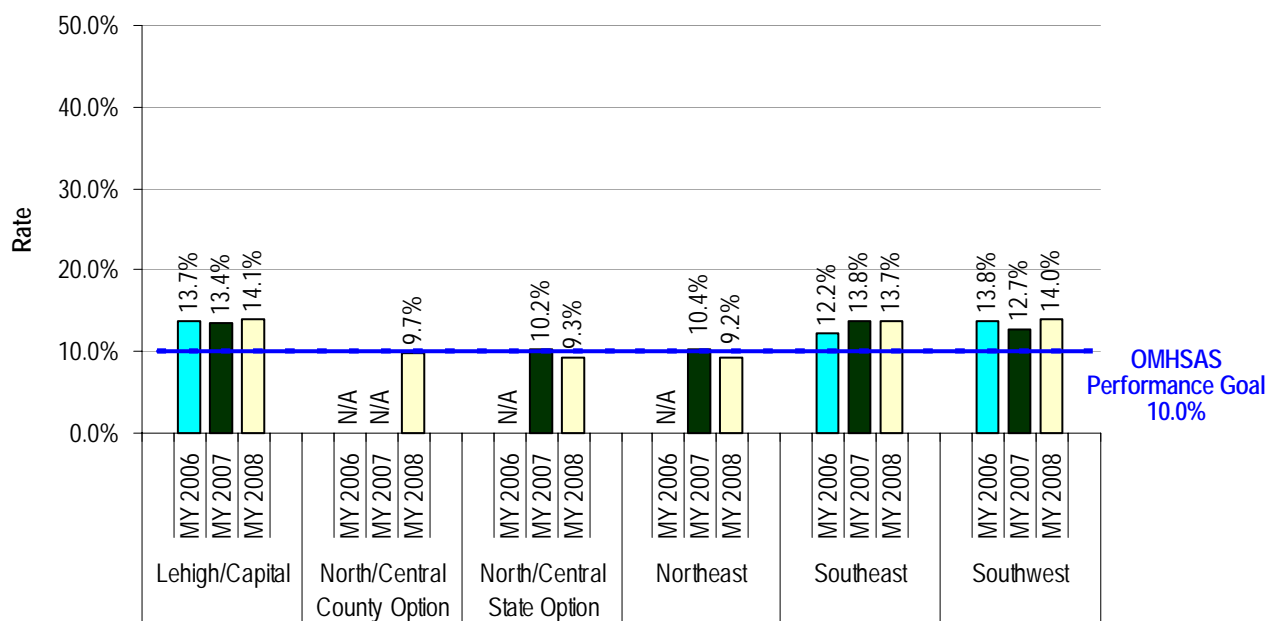


Table 9 MY 2008 Readmissions Rates and Year-to-Year Comparison by Region

Category	MY 2007			MY 2008			Rate Comparison (MY 2007 to MY 2008)	
	N	D	%	N	D	%	PPD	SSD
Region								
Lehigh / Capital	961	7,177	13.4%	1,046	7,438	14.1%	0.7	No
North/Central County Option	NA	NA	NA	488	5,016	9.7%	NA	NA
North/Central State Option	397	3,874	10.2%	369	3,982	9.3%	-1.0	No
Northeast	201	1,933	10.4%	196	2,124	9.2%	-1.2	No
Southeast	2,236	16,209	13.8%	2,313	16,946	13.7%	-0.1	No
Southwest	1,364	10,729	12.7%	1,439	10,299	14.0%	1.3	Yes

Figure 7: Year-to-Year Readmission Rates by Region



- This measure is an inverted rate, in that lower rates are preferable.
- Among the six regions studied, the lowest readmission rate was observed for the Northeast region at 9.2%. The highest readmission rate was observed for the Lehigh/Capital region at 14.1%. This is different from MY 2007 findings, where the rate for the North/Central State Option region was the lowest.
- In MY 2008, three regions – North/Central County Option, North/Central State Option, and Northeast – met the performance goal of 10.0%. This is an improvement from MY 2007 findings, where none of the regions met the performance goal.
- Compared to MY 2007, the rate for the Southwest region statistically significantly increased, while the rate changes for the remaining regions were not statistically significant.

Readmission Rates by Race Category

Figure 8 shows the MY 2008 readmission rates for the HealthChoices population by race category. The race categories 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 10.

Figure 8: MY 2008 Readmission Rates by Race Category

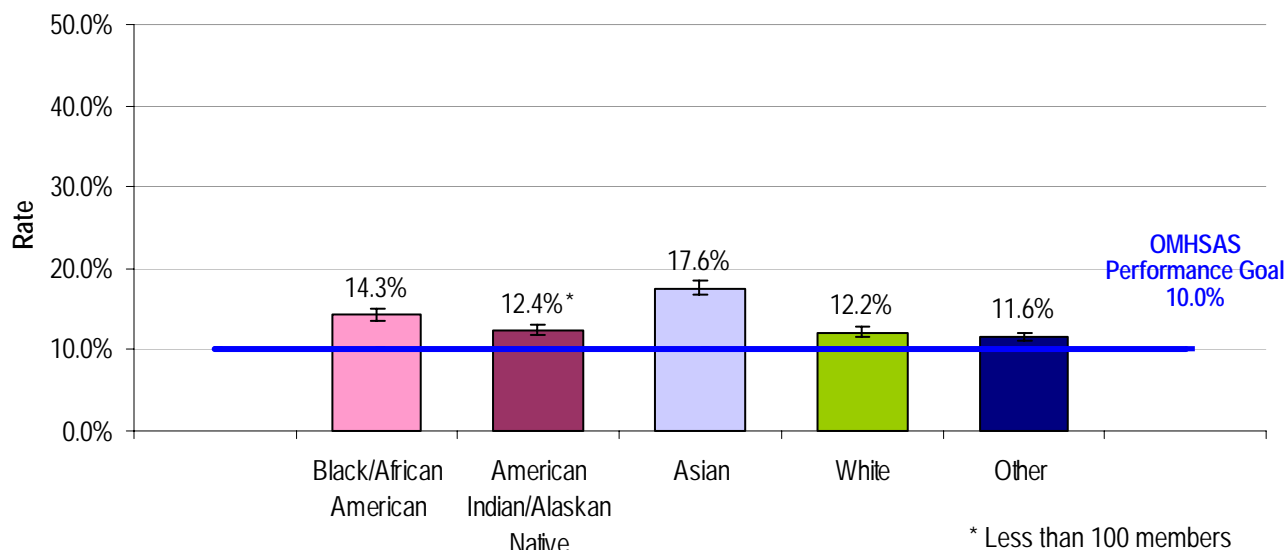


Table 10 MY 2008 Readmissions Rates and Year-to-Year Comparison by Race

Category	MY 2007			MY 2008			Rate Comparison (MY 2007 to MY 2008)	
	N	D	%	N	D	%	PPD	SSD
Race								
Black/African American	1,766	12,325	14.3%	1,858	12,993	14.3%	0.0	No
American Indian/Alaskan Native*	10	75	13.3%	12	97	12.4%	-0.9	No
Asian	37	307	12.1%	52	296	17.6%	5.5	No
White	3,050	24,397	12.5%	3,549	29,141	12.2%	-0.3	No
Other/Chose Not to Respond	296	2,818	10.5%	380	3,278	11.6%	1.1	No
Hawaiian/Pacific Islander	0	0	NA	0	0	NA	NA	NA

*Rate or comparison determined by less than 100 eligible discharges

- This measure is an inverted rate, in that lower rates are preferable.
- The Asian population had the highest readmission rate of 17.6%. This is different from MY 2007 findings, where the highest rate was noted for the Black/African American population at 14.3%. The rate for Black/African American remained the same at 14.3% in MY 2008. This was the second highest rate in MY 2008.
- The lowest readmission rate was for the Other/Chose Not to Respond group (11.6%). This is consistent with MY 2007 findings.

- In MY 2008, rates for all of the race categories stayed comparable to MY 2007, and none of the rate changes were statistically significant.
- The rate for the American Indian/Alaskan Native population was determined by a population of less than 100 members.

Table 11 shows a comparison of readmission rates between the Black/African American and White populations by BH MCO.

Table 11 MY 2008 Readmissions Rates Race Comparison by BH MCO				
Category	Black	White	Rate Comparison	
	%	%	AD	SSD
Overall	14.3%	12.2%	2.1	Yes
BH MCO				
CBH	13.4%	11.8%	1.6	Yes
CBHNP	17.2%	13.1%	4.1	Yes
CCBH	15.7%	10.9%	4.8	Yes
MBH	16.0%	15.1%	0.9	No
VBH	11.5%	11.6%	0.1	No

- This measure is an inverted rate, in that lower rates are preferable.
- In MY 2008, the aggregate rate for the Black/African American population was statistically significantly higher than that for the White population by 2.1 percentage points. In MY 2007, the aggregate rate for the Black/African American population also was statistically significantly higher than the White population by 1.8 percentage points. This disparity has persisted since the MY 2006 measurement, and the gap is widening as compared to prior studies.
- Among the five BH MCOs, the highest readmission rate for the Black/African American population (17.2%) was noted for CBHNP, and that for the White population (15.1%) was noted for MBH.
- Among the five BH MCOs, the lowest readmission rate for the Black/African American population (11.5%) was noted for VBH, and that for the White population (10.9%) was noted for CCBH.
- The readmission rate for the Black/African American population was statistically significantly higher than that of the White population for CBH, CBHNP, and CCBH. Statistically significant differences were not indicated between these race categories for MBH and VBH. In MY 2007, the rates for Black/African Americans and Whites for CCBH and MBH had been statistically significantly different.

Readmission Rates by Age Category

Figure 9 represents the MY 2008 readmission rates for the participating HealthChoices population by age category. 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 12 and 13, respectively.

Figure 9: MY 2008 Readmission Rates by Age Category

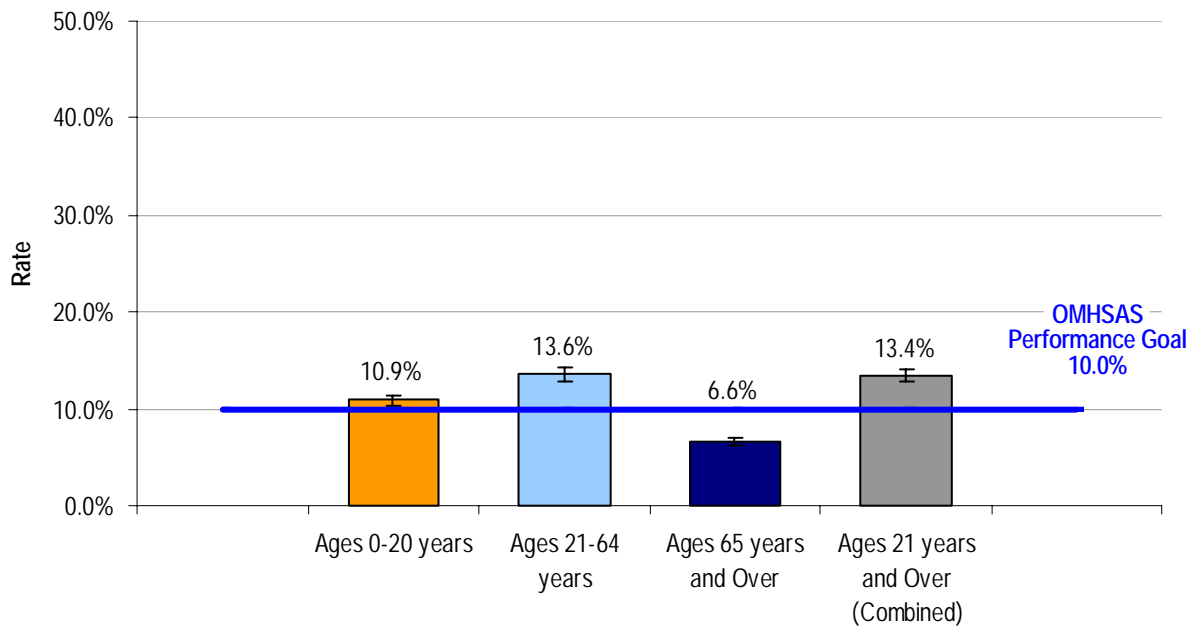


Table 12 MY 2008 Readmissions Rates and Year-to-Year Comparison by Age Category

Category	MY 2007			MY 2008			Rate Comparison (MY 2007 to MY 2008)	
	N	D	%	N	D	%	PPD	SSD
Age								
Ages 0-20	1,097	10,081	10.9%	1,304	11,985	10.9%	0.0	No
Ages 21-64	4,028	29,232	13.8%	4,507	33,216	13.6%	-0.2	No
Ages 65 and over	34	609	5.6%	40	604	6.6%	1.0	No
Ages 21 and over (Combined)	4,062	29,841	13.6%	4,547	33,820	13.4%	-0.2	No

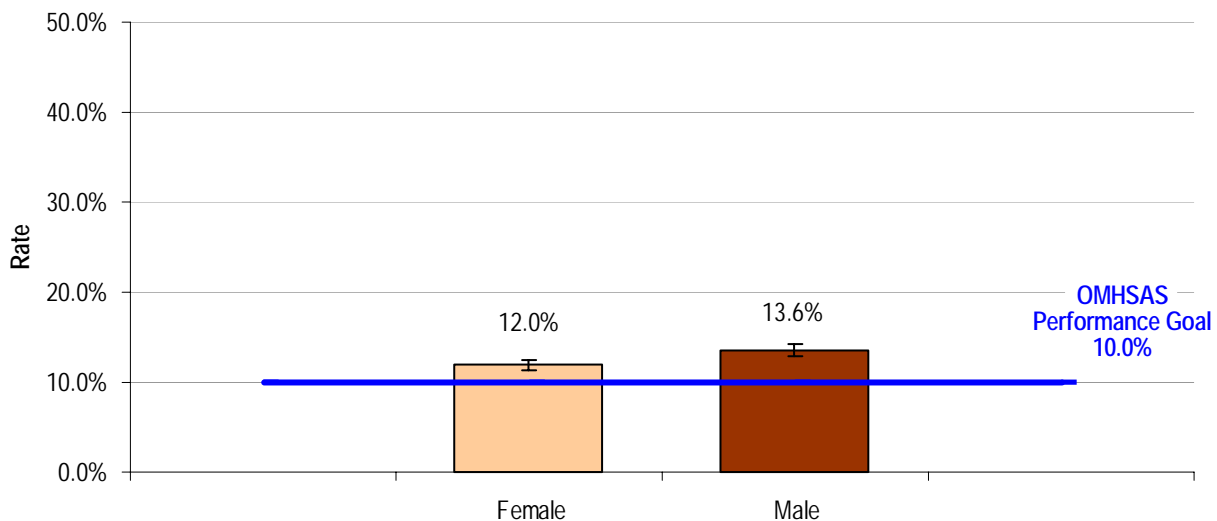
Table 13 MY 2008 Readmissions Rates Age Comparison by BH MCO

Category	Ages 0-20 years	Ages 21 years & Over	Rate Comparison	
	%	%	AD	SSD
Overall	10.9%	13.4%	2.5	Yes
BH MCO				
CBH	10.0%	13.6%	3.6	Yes
CBHNP	11.7%	14.4%	2.7	Yes
CCBH	10.2%	12.5%	2.3	Yes
MBH	13.4%	16.1%	2.7	Yes
VBH	10.5%	11.9%	1.4	No

Readmission Rates by Gender Category

Figure 10 displays the MY 2008 rates for the readmission indicator by gender. Additionally, Table 14 identifies year-to-year differences and Table 15 identifies comparison results between the two genders by BH MCO.

Figure 10: MY 2008 Readmission Rates by Gender Category



- This measure is an inverted rate, in that lower rates are preferable.
- The readmission rate for the female population was statistically significantly lower than that for the male population by 1.6 percentage points. This is consistent with MY 2007 and MY 2006 findings, where the rates for the two groups statistically significantly differed by 1.7 and 1.6 percentage points, respectively.
- Year-to-year differences for both gender groups were *not* statistically significant.
- Among the five BH MCOs, the rates for females (10.5%) and males (12.6%) were the lowest for VBH. The rates for both females (15.4%) and males (15.4%) were highest for MBH.
- The readmission rate for the female population was statistically significantly lower than that of the male population for all the BH MCOs, except MBH. In MY 2007, statistically significant differences in rates had been evident for CCBH and VBH.

Table 14 MY 2008 Readmissions Rates and Year-to-Year Comparison by Gender

Category	MY 2007			MY 2008			Rate Comparison (MY 2007 to MY 2008)	
	N	D	%	N	D	%	PPD	SSD
Gender								
Female	2,451	20,329	12.1%	2,781	23,276	12.0%	0.1	No
Male	2,708	19,593	13.8%	3,070	22,529	13.6%	0.2	No

Table 15 MY 2008 Readmissions Rates Gender Comparison by BH MCO

Category	Female	Male	Rate Comparison	
	%	%	AD	SSD
Overall	12.0%	13.6%	1.6	Yes
BH MCO				
CBH	12.0%	13.7%	1.7	Yes
CBHNP	12.5%	14.8%	2.3	Yes
CCBH	10.9%	12.9%	2.0	Yes
MBH	15.4%	15.4%	0.0	No
VBH	10.5%	12.6%	2.1	Yes

Readmission Rates by Ethnicity

Rates were assessed to determine if differences were noted between Hispanics and Non-Hispanics. These rates are shown in Figure 11. Year-to-year rate comparisons and rates by ethnicity for each BH MCO are provided in Tables 16 and 17, respectively, along with a comparison of rates denoting statistically significant differences.

Figure 11: MY 2008 Readmission Rates by Ethnicity

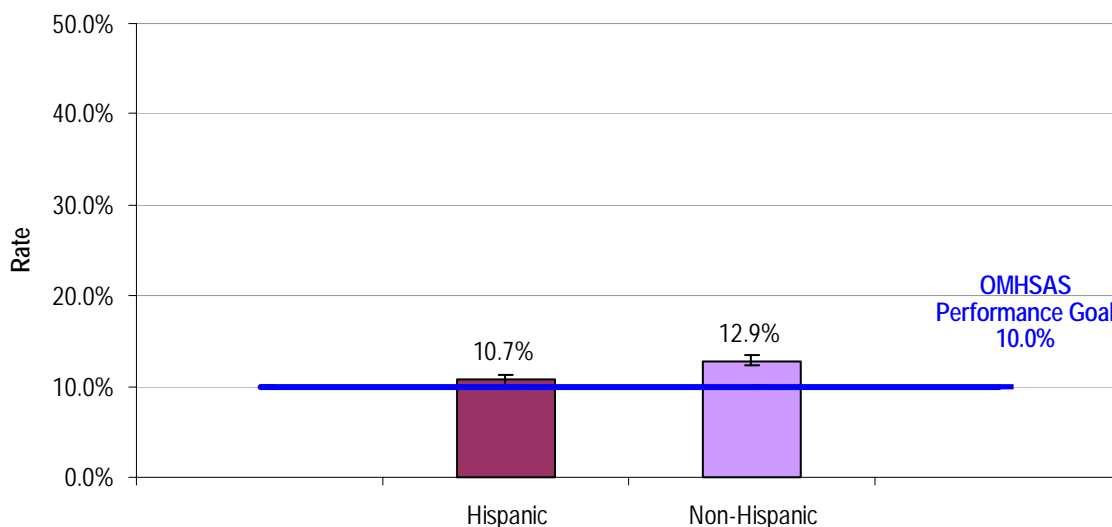


Table 16 MY 2008 Readmissions Rates and Year-to-Year Comparison by Ethnicity

Category	MY 2007			MY 2008			Rate Comparison (MY 2007 to MY 2008)	
	N	D	%	N	D	%	PPD	SSD
Ethnicity								
Hispanic	191	1,945	9.8%	244	2,271	10.7%	0.9	No
Non-Hispanic	4,968	37,977	13.1%	5,604	43,508	12.9%	0.2	No

Table 17 MY 2008 Readmissions Rates Ethnicity Comparison by BH MCO

Category	Hispanic	Non-Hispanic	Rate Comparison	
	%	%	AD	SSD
Overall	10.7%	12.9%	2.2	Yes
BH MCO				
CBH	10.6%	13.2%	2.6	Yes
CBHNP	12.4%	13.7%	1.3	No
CCBH	9.3%	11.9%	2.6	No
MBH	13.3%*	15.4%	2.1	No
VBH	8.8%*	11.5%	2.7	No

*Rate or comparison determined by less than 100 eligible discharges

- This measure is an inverted rate, in that lower rates are preferable.
- The overall readmission rate for the Hispanic population was statistically significantly lower than that for the Non-Hispanic group by 2.2 percentage points. In MY 2007, the rate difference between the Hispanics and Non-Hispanics was also statistically significant, by 3.3 percentage points.
- Compared to MY 2007, the rate changes for both populations were *not* statistically significant.
- The highest rate for Hispanic enrollees was noted for MBH (13.3%) and the lowest rate for VBH (8.8%). However, as with MY 2007, both of these rates were determined by less than 100 eligible discharges.
- For Non-Hispanics, the rate for MBH (15.4%) was the highest, and the rate for VBH (11.5%) was the lowest.
- The rates for Non-Hispanics were statistically significantly higher than those for Hispanics for CBH. In MY 2007, the rates for Non-Hispanics were statistically significantly higher than those for Hispanics for CBH and CBHNP.

Conclusions

Overall, none of the BH MCOs met the OMHSAS designated performance goal of 10.0% for MY 2008. Of the 67 Counties that participated in the study, 22 Counties (33%) 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 readmission rate was observed for VBH. None of the BH MCOs' rates met the performance goal of less than 10.0%. The rates for CCBH and VBH were statistically significantly below the HealthChoices BH MCO average. The MY 2008 rates did *not* differ statistically significantly from MY 2007 for any of the BH MCOs.
- The readmission rate for MBH was the highest among the five BH MCOs. The rate was also statistically significantly above the HealthChoices BH MCO average.

By County

- Rates for eight Counties – Bedford, Bradford, Clarion, Forest, Mifflin, Sullivan, Susquehanna, and Wayne – were statistically significantly below the HealthChoices County average, although the rates for Forest, Sullivan, and Susquehanna Counties were determined by less than 100 eligible discharges for each respective County.
- Rates for 22 Counties met the 10.0% performance goal. These Counties are Armstrong, Bedford, Berks, Blair, Bradford, Carbon, Centre, Clarion, Clearfield, Clinton, Crawford, Carbon, Centre, Clarion, Clearfield, Clinton, Crawford, Elk, Jefferson, Lawrence, Luzerne, Lycoming, Mifflin, Monroe, Venango, Warren, Wayne, and York.
- Rates for Cameron, Forest, Fulton, Perry, Pike, Potter, Sullivan, Susquehanna, Union, and Wyoming Counties also met the 10.0% performance goal. However, these rates were determined by less than 100 eligible discharges for each respective County. Caution should be exercised when interpreting results for small denominators, as they produce rates that are less stable.
- Rates for 15 Counties – Allegheny, Bucks, Butler, Chester, Cumberland, Dauphin, Delaware, Franklin, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, and Washington – were statistically significantly above the HealthChoices County average.
- Within the three-year timeframe from MY 2006 to MY 2008, the rates for Berks and Indiana Counties trended downwards (i.e., decreased in rate over the three MYs).
- Within the three-year timeframe from MY 2006 to MY 2008, the rates for Cumberland, Dauphin, Washington and Westmoreland Counties trended upwards (i.e., increased in rate over the three MYs).

By Region

- Among the five regions studied, the lowest readmission rate was observed for the Northeast region. The rates for the North/Central County Option, North/Central State Option, and Northeast regions met the 10.0% performance goal.
- Compared to MY 2007, the rate for the Southwest region statistically significantly increased.

By Race

- Among the five racial categories evaluated the Other/Chose Not to Respond group had the lowest readmission rate, followed by the White population. None of the rates by race statistically significantly differed from MY 2007.
- The aggregate rate for the Black/African American population was statistically significantly lower than the White population in MY 2008.
- The highest readmission rate in MY 2008 was indicated for the Asian population. In MY 2007, the highest rate was noted for Black/African Americans.

By Age

- The readmission rate for the Age 65 years and over population is the lowest among the three age cohorts studied. None of the rates for any of the age groups statistically significantly differed from MY 2007.

By Gender

- A statistically significantly lower readmission rate was indicated for females as compared to males. Rates for either gender group did *not* statistically significantly differ from MY 2007.

By Ethnicity

- The readmission rate for Hispanics was statistically significantly lower than that for the Non-Hispanics. Neither MY 2008 rates statistically significantly differed from MY 2007.

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 2007 and MY 2006. 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 2009.
- Given that none of the BH MCOs met the performance goal for MY 2008, 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.
- Additional analyses of each BH MCOs data should be conducted 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 2008 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.

Appendix: Glossary of Terms

Average (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.
Confidence Interval	In statistics, a <u>confidence interval (CI)</u> is a particular kind of interval estimate of a population parameter. Instead of estimating the parameter by a single value, an interval likely to include the parameter is given.
HealthChoices Aggregate Rate	The total numerator (number of members who had a follow-up visit within seven days post-discharge) divided by the total denominator (number of eligible discharges).
HealthChoices BH MCO Average	The sum of the individual behavioral health managed care organization (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.
HealthChoices County Average	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.
Rate	A proportion indicated as a percentage.
Percentage Point Difference	The arithmetic difference between two rates.
Weighted Average	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.
Statistical Significance	In statistics, a result is called <u>statistically significant</u> 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.