



# HEALTH HOMES COST SAVINGS ANNUAL REPORT

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Final (F3)



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## Background

The Affordable Care Act (ACA) of 2010 created an optional Medicaid State Plan benefit for states to establish Health Homes. In order to treat the whole person, Health Homes integrate and coordinate all care for Medicaid consumers living with chronic conditions.

In October of 2012, the Ohio Department of Medicaid (ODM), in conjunction with the Ohio Department of Mental Health and Addiction Services (ODMHAS), announced the launch of the Health Homes initiative for Medicaid consumers with severe persistent mental illness (SPMI), which includes adults with serious mental illness (SMI) and children with serious emotional disturbance (SED).

The philosophy of Health Homes is to treat each member through an integrated and coordinated system of service delivery and multi-disciplinary team approach. This approach addresses an individual’s multiple chronic and complex conditions, and also links him/her to non-clinical community support systems. Better outcomes are expected as a result of more coordinated care among clinical specialists and service providers and improved communication between patients and caregivers. The goals of this initiative are to: improve the integration of physical and behavioral healthcare; lower the rates of hospital emergency department (ED) use; reduce hospital admissions and re-admissions; reduce healthcare costs; decrease reliance on long-term care facilities; improve the experience of care, quality of life, and consumer satisfaction; and improve health outcomes.

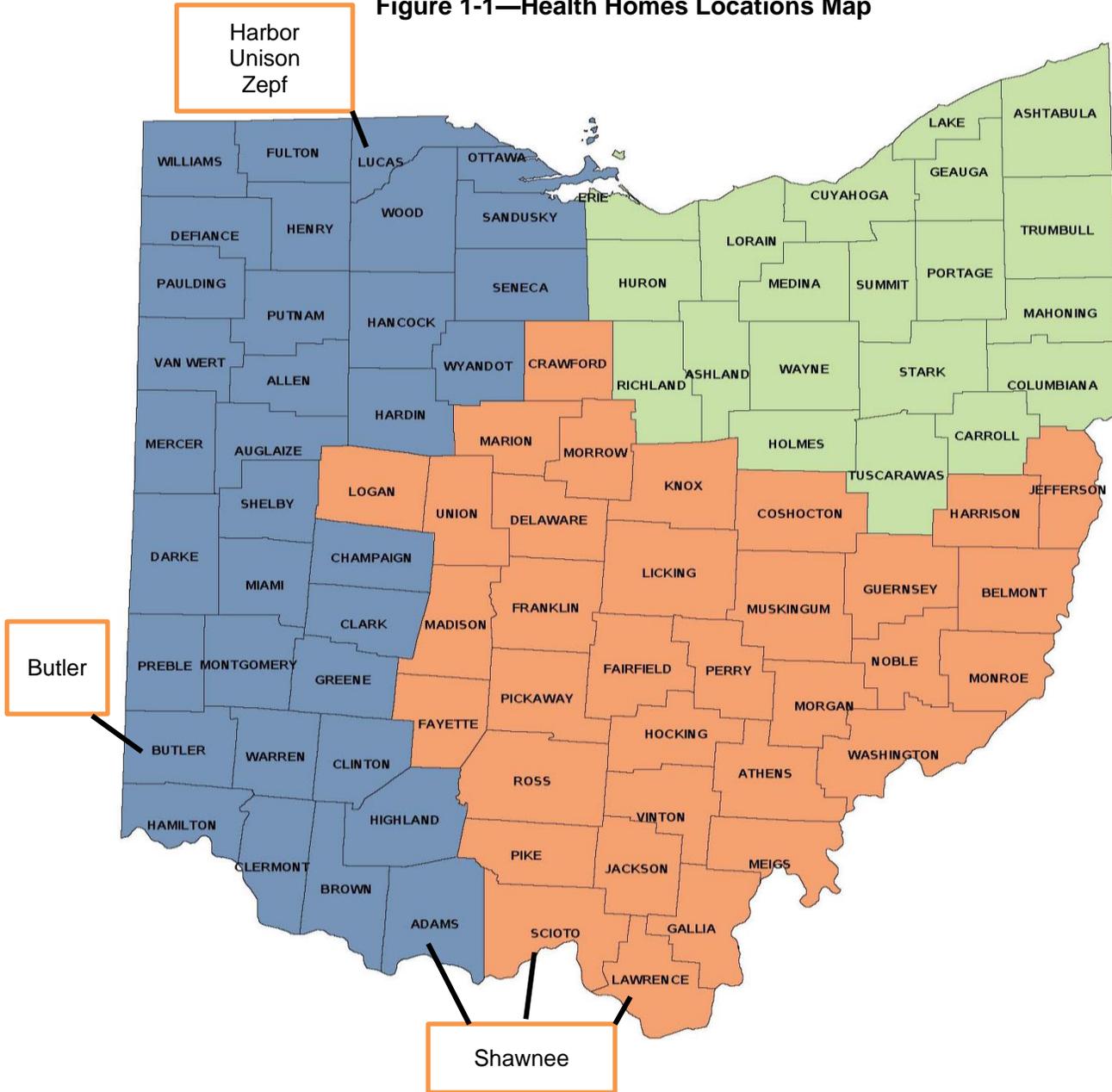
Health Home services include comprehensive care management, care coordination, health promotion, comprehensive transitional care, individual and family support, and referral to community and social support services. Six Health Homes participated in Phase I of the initiative, as listed in Table 1-1 below.

<b>Table 1-1—Participating Health Homes</b>	
<b>Health Home Name</b>	<b>Health Home Abbreviation</b>
Butler Behavioral Health Services	Butler
Harbor	Harbor
Family Services of Northwest Ohio <sup>1-1</sup>	Family Services
Shawnee Mental Health Center	Shawnee
Unison Behavioral Health Group	Unison
Zepf Center	Zepf

<sup>1-1</sup> Family Services was added after the initial launch of the Phase I initiative; therefore, Family Services was not included in this report.

The Health Homes service five counties in Ohio: Butler, Lucas, Adams, Scioto, and Lawrence counties. Butler, Lucas, and Adams counties are in the West Region, and Scioto and Lawrence counties are in the Central/Southeast region. Figure 1-1 displays the locations of each Health Home.

**Figure 1-1—Health Homes Locations Map**



The Health Homes serving this population are evaluated using both clinical performance measures and a cost savings calculation. The cost analysis is used as part of the comprehensive evaluation of the Health Homes. The results of this analysis should assist the ODM in determining whether Health Homes save money after accounting for program costs. An additional analysis of utilization rates was conducted as part of the comprehensive Health Home evaluation. The comprehensive evaluation will serve as ODM’s mechanism for formally evaluating the impact of the Health Homes. This report provides the findings for the cost analysis performed for the Health Homes.

## Overview

The cost savings methodology was developed using the approach outlined by ODM in its Health Home State Plan Amendment submitted to the Centers for Medicare & Medicaid Services (CMS).<sup>1-2</sup> This study evaluated Medicaid costs incurred by Health Home Medicaid members. ODM's approach includes comparing changes in per member per month (PMPM) costs over time for consumers that were enrolled in a Health Home (i.e., the treatment group) versus those that were not enrolled in a Health Home (i.e., a control group). The comparison of a treatment group to a control group allows for the calculation of expected costs for the Health Home population absent the influence of the Health Home initiative. A control group with characteristics similar to the treatment group was selected using propensity score-based matching. A difference-in-differences analysis was performed to compare changes in costs from the baseline period (July 1, 2011, through June 30, 2012) to the remeasurement period (January 1, 2013, through December 31, 2013) for both groups. Please refer to the Methodology section of the report for more detailed information.

The advantage of this methodology is that it allows for a more precise estimate of the true effect of the Health Home program by accounting for expected cost changes for Health Home members had they not been enrolled in the program. This methodology minimizes or eliminates any cost changes (e.g., reimbursement changes) that the Health Home population would have experienced regardless of enrollment in the program. For example, if costs before and after Health Home enrollment showed a 25 percent reduction, one might conclude that the Health Home program reduced costs by 25 percent. However, this conclusion could be erroneous if, for example, costs generally declined by 10 percent over that same time period. In this example, the true effect of the Health Home program leads to a cost reduction of 15 percent (i.e., 25 percent minus 10 percent) rather than 25 percent. By computing the cost changes for a similar group that was not enrolled in Health Homes, it is possible to remove the confounding effect of any changes in costs that the Health Home population would have experienced regardless of program participation.

HSAG evaluated the cost savings of the Health Home program for a variety of levels of analysis. Table 1-2 depicts the levels of analysis that HSAG incorporated into the evaluation. For more detailed information about the levels of analysis, please refer to page 2-2 in the Methodology section.

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<sup>1-2</sup> Medicaid.gov. Approved Health Home State Plan Amendments. Available at: [http://www.chcs.org/usr\\_doc/Medicaid\\_Model\\_Data\\_Lab.pdf](http://www.chcs.org/usr_doc/Medicaid_Model_Data_Lab.pdf). Accessed on: January 21, 2014.

Levels of Analysis	Number of Units	Number of Age (Adults vs. Children) Stratification Units	Number of Community Mental Health Centers (CMHC vs. non-CMHC) Stratification Units	Total Units
Health Home	5	10	10	25
Health Home Design	2	0	0	2
Region and/or County*	1	2	2	5
Managed Care Plan (MCP)	5	0	0	5
Statewide	1	2	2	5
<b>TOTAL</b>	<b>14</b>	<b>14</b>	<b>14</b>	<b>42</b>

*\* Two of the units of analysis for the region and/or county analysis only include one Health Home (i.e., Butler County and Adams, Lawrence, and Scioto region); therefore, additional analysis was not required for these counties/regions.*

## High-level Results

All five of the evaluated Health Homes incurred statistically significant negative cost savings. The magnitude of the negative cost savings ranged from \$322 to \$561 PMPM, with a statewide negative cost savings of \$516 PMPM. Table 1-3 displays the total statewide cost savings, in addition to each Health Home. Forty-two different stratifications were evaluated (e.g., by age, MCP, Health Home) and none of these subgroups showed an overall cost savings. However, two Health Homes (Zepf and Shawnee) showed a significant cost savings in the Medical – Mental Health category of service. The primary driver of the cost increases, ignoring average monthly Health Home case rates, was found in pharmacy costs. Members in all five Health Homes had significantly higher pharmaceutical costs than the comparison group, ranging in effect size from \$48 PMPM for Butler to \$140 PMPM for Unison.

Health Home	Program Effect (Cost Savings)	
Butler	(\$557)	*
Harbor	(\$453)	*
Shawnee	(\$322)	*
Unison	(\$561)	*
Zepf	(\$534)	*
<b>Statewide</b>	<b>(\$516)</b>	<b>*</b>

*A negative cost savings indicates an increase in cost.  
 N.S. indicates the results were not statistically significant.  
 \*Indicates statistical significance at the 95% confidence level or greater.*

### Time Periods for Evaluation

The cost savings analysis compares costs over two time periods, a baseline period and a remeasurement period. The baseline period was the period prior to Health Home program implementation. The remeasurement period was used to reassess the treatment and control groups after program implementation to determine if the Health Home program has successfully reduced costs for treating its consumers.

The baseline and remeasurement report periods were developed given the following constraints:

1. The transition to Medicaid Information Technology System (MITS) began in August 2011, which affected dates of service beginning in July 2011. Managed care encounters prior to the implementation of MITS contain incomplete managed care payment data.
2. The Health Home program was implemented in October 2012.

The baseline period was July 1, 2011, through June 30, 2012. The remeasurement period was January 1, 2013, through December 31, 2013. The report periods were structured to allow a 3-month ramp-up period between the start of the Health Home initiative and the beginning of the remeasurement period. For the treatment group during the remeasurement period, costs were measured only during the member's longest Health Home enrollment span. For example, if a member enrolled in a Health Home on April 1, 2013, and remained enrolled through November 30, 2013, the member's costs were assessed from April 1, 2013, through November 30, 2013.

### Treatment and Control Groups

The treatment group consisted of members that met the following criteria:

- ◆ Continuously enrolled for 6 months during the remeasurement period in one of the following Health Homes: Butler, Harbor, Shawnee, Unison, or Zepf. Continuous enrollment was defined as 6 consecutive months for which a Health Homes services CPT code (S0281) was present. A 1-month gap in the middle of the 6-month span was permitted.
- ◆ Alive for the duration of the baseline period.
- ◆ Reside in a Health Home county.<sup>2-1</sup>

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<sup>2-1</sup> Health Home counties are: Lucas, Butler, Adams, Scioto, and Lawrence.

The control group consisted of members that met the following criteria:

- ◆ Continuously enrolled for 6 months in Medicaid during the remeasurement period.
- ◆ Alive for the duration of the baseline period.
- ◆ Reside in a Health Home county.
- ◆ Never enrolled in a Health Home.

## Data Sources

HSAG used the following data sources to calculate expected cost savings:

- ◆ MCP-submitted encounter data
- ◆ Fee-for-service (FFS) claims data
- ◆ Medicaid eligibility and managed care enrollment data
- ◆ Demographic data
- ◆ Health Home enrollment data

The January vendor files supplied the encounter, claims, eligibility, managed care enrollment, and demographic data, while the Health Home enrollment data came from the monthly Health Home enrollment files from ODM.

Data were prepared in accordance with ODM specifications. Final claims were identified using the adjusted ICN field, and only final claims were included in the analysis. Pharmacy data were de-duplicated to remove duplicate pharmacy claims. The amount reimbursed field was used to identify costs for the FFS claims.

## Levels of Analysis

Costs savings were calculated for each category of service and overall (i.e., total) for each of the levels of analysis described below.

- ◆ Statewide Overall—All members meeting the criteria outlined in the Treatment and Control Groups section were included in this analysis, and stratified by:
  - Age Group.
  - CMHC Experience.
- ◆ Health Homes—Health Home members were assigned to a Health Home based on their longest continuous enrollment span. Any ties were assigned to the most recent Health Home the member was enrolled in. Analyses were stratified by:
  - Age Group within each Health Home.
  - CMHC Experience within each Health Home.
- ◆ Health Home Design—Health Home design was evaluated as follows:

- Access to pharmacist on-site.
- ◆ County—Lucas County was evaluated, and separately stratified by:<sup>2-2</sup>
  - Age Group.
  - CMHC Experience.
- ◆ MCP—Members with at least 6 months of continuous enrollment in an MCP during the remeasurement period were included in this analysis. The treatment group was limited to members with at least 6 months of continuous MCP enrollment occurring simultaneously with 6 months of continuous Health Home enrollment. This analysis was limited to the following MCPs: Buckeye, CareSource, Molina, Paramount, and UnitedHealthcare.

The Age Group stratification consisted of two analyses. One analysis limited members to only those under 18 years of age as of the first day of the remeasurement period, and the second analysis limited members to those that were 18 years of age or older as of the first day of the remeasurement period.

The CMHC Experience stratification consisted of two analyses. One analysis limited members to only those having a CMHC experience (i.e., if they had a claim with a provider type of 84 or a provider ID of 000000002034042—OHIO DEPT OF MENTAL HLTH-MACSYS) during the baseline period, and the second analysis limited members to those without a CMHC experience (i.e., if they had no CMHC claims during the baseline period).

## Propensity Score-Based Matching Statistical Analysis

For purposes of determining the expected cost savings, a non-Health Home population with characteristics similar to the Health Home population was identified. Propensity score-based matching is a common methodology used to select a control group that is statistically similar to a treatment group.<sup>2-3</sup> This is done through constructing a statistical model that predicts the probability of an individual being enrolled in the program. The statistical model uses covariates (or factors) that are intended to predict the likelihood of an individual being enrolled in the Health Home program.

Additionally, the eligible control group population was subset accordingly for the MCP, age group, and CMHC experience levels of analysis prior to propensity score matching. For example, the eligible control group was limited to only Medicaid members younger than 18 years old for the

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<sup>2-2</sup> A separate analysis was only performed for Lucas County. Additional analyses are not required for Butler County and Adams, Lawrence, and Scioto Region, since this county and region only contain one Health Home (Butler Health Home and Shawnee Health Home, respectively).

<sup>2-3</sup> Rosenbaum, P.R. and Rubin, D.B. (1985). Constructing a Control Group Using Multivariate Matched Sampling Methods that Incorporate the Propensity Score. *The American Statistician* 39:33 – 38; Rosenbaum, Paul R., and Donald B. Rubin. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika* 70(1):41-55.

“Shawnee – Under 18” level of analysis. The following sections describe the methodology for generating propensity scores, and using those scores in subsequent analyses.

### Covariate Identification

In order to help predict enrollment into the Health Home program, demographic and disease covariates were identified for each member. All covariates were identified during the baseline period, and were expected to be related to the likelihood of a member being part of the Health Home population. Table 2-1 provides a list of the demographic and utilization covariates, and the method that was used to identify each covariate. These covariates provided a starting place for subsequent analyses. Some covariates were dropped because a given level of analysis failed to provide sufficient data for a particular covariate.<sup>2-4</sup> For instance, no one in the treatment group under the age of 18 had congestive heart failure or an HIV infection. As a result, those covariates were excluded from the model for the “Under 18” levels of analysis. Full details on the final list of covariates used in each regression model can be found in **Appendix B**.

Table 2-1—Demographic and Utilization Covariates	
Covariates	Identification Method
<b>Age</b>	
Age	Member’s date of birth was used to identify the member’s age at the end of the remeasurement period.
<b>Gender</b>	
Male Female	Member’s gender in the demographic file.
<b>Race/Ethnicity</b>	
White Black Other	Members flagged as “D” or “C” were classified as White. Members flagged as “N” or “B” were classified as Black. All others were classified as Other.
<b>County (County Code)</b>	
Butler (09) Lucas (48) Adams (01) Lawrence (44) Scioto (73)	Member’s county of residence as determined by county code.
<b>Member Months</b>	
Number of months a member was enrolled in Medicaid.	Eligibility file was used to determine number of months enrolled in Medicaid.
<b>Enrollment</b>	
Number of months enrolled in managed care	Medicaid enrollment
Number of months on a waiver	Waiver eligibility

<sup>2-4</sup> Specifically, binary covariates (e.g., disease covariates or county dummies) were dropped if there were 10 or fewer Health Home members in the category.

Table 2-1—Demographic and Utilization Covariates	
Covariates	Identification Method
Number of months part of Covered Families and Children (CFC) population	Member was enrolled in CFC as defined by Aid Categories 4001, 4011, 4012, 4013, 4014, 4015, 4016, 4017, 4018, 4019, 4020, 4021, 4022, 4023, 4024, 4026, 4027.
Number of months part of Aged, Blind, or Disabled (ABD) population	Member was enrolled in ABD as defined by Aid Categories 4002, 4007, 4008, 4009.
<b>Eligibility</b>	
Number of months as a dual eligible	Member was dual eligible as defined by aid categories 3xxx.
<b>Mental Health</b>	
Number of Visits to a Community Mental Health Center	Claims with provider type 84 or provider ID 000000002034042.
<b>Serious and Persistent Mental Illness (SPMI) or Serious Emotional Disturbance (SED) Characteristics</b>	
Number of Mental Health Inpatient Admissions	Inpatient admissions (i.e., Claim Type I) with a primary diagnosis of mental health (i.e., anxiety disorders, conduct disorders, depression, mental disorder not otherwise specified as defined in Table 2-2).
Number of Mental Health Emergency Department Visits	Emergency department visit (i.e., defined in Table 2-4) with a primary diagnosis of mental health (i.e., anxiety disorders, conduct disorders, depression, mental disorder not otherwise specified as defined in Table 2-2).
Mental Health Prescriptions	Thirteen or more prescriptions from the following combined drug classes: 1) Psychother, Antidepressants; 2) Psychother, Tranq/Antipsychotic; 3) Antimanic Agents; 4) Anticonvulsant, Benzodiazepine; or 5) Anticonvulsant, Misc.
<i>Note: Demographic covariates were selected for inclusion to capture any systematic correlation with Health Home enrollment status that is not explicitly captured by the disease covariates and eligibility/enrollment indicators included in the model. To the extent that unobserved factors are systematically related to age, race, gender, and geographic location, and also related to the likelihood of enrollment in a Health Home, the inclusion of such demographic factors will help account for these differences. Eligibility/Enrollment and mental health data were included in order to match Health Home members with non-Health Home members on these metrics.</i>	

Table 2-2 on the following page lists the disease covariates that were incorporated into the propensity scoring methodology. Encounter data were used to identify members who had a primary diagnosis for any of the diseases listed in Table 2-2. Each disease was evaluated separately. For example, a member diagnosed with both Asthma and Hypertension was flagged as having two disease covariates.

**Table 2-2—Disease Covariates**

Asthma	Acute bronchitis	Autism	ADHD
Bipolar disorder	Pregnancy	Psychotic disorder	Hypertension
Coronary atherosclerosis and other heart disease	Diabetes mellitus	Other developmental disorder	Substance-related disorders
Developmental disorders	Post-traumatic stress disorder	Cardiac dysrhythmias	Spondylitis
Blindness and vision defect	Thyroid disorders	COPD and bronchiectasis	Alcohol-related disorders
Obsessive-compulsive disorder	Cystic fibrosis	Osteoarthritis	Epilepsy
Anxiety disorders	Conduct disorders	Depression	Mental disorder not otherwise specified
Esophageal disorders	Congestive heart failure	Cancer	Other nervous system disorders
Neoplasms of unspecified nature	Intracranial injury	Delirium, dementia, and amnesic and other cognitive disorders	HIV infection

*Note: This list of disease covariates was developed based on an analysis of the common disease categories found for Health Home members. Primary diagnosis codes for Health Home members were grouped using the Clinical Classifications Software (CCS) developed by the Agency for Healthcare Research and Quality (AHRQ). Certain CCS categories were subdivided to capture additional specificity for mental illness diagnoses.*

### Propensity Score Matching

Propensity scores were derived in order to compare the Health Home and non-Health Home populations, and reflect the probability that an individual was enrolled in a Health Home. The propensity scores were then used to match members in the eligible control group with members in the eligible treatment group.

The covariates previously discussed were used to estimate a propensity score for each member. Logistic regression was used to calculate the propensity score, which is represented by:

$$\Pr(Y_i = 1) = \frac{1}{1 + \exp[-(\beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_k X_{ik})]}$$

where  $\Pr(Y_i = 1)$  is the propensity score, the  $\beta$ s are parameters to be estimated, and the  $X$ s are the covariates.<sup>2-5</sup>

Propensity scores for the two groups were used to match the populations. A Greedy 5→1 digit match was used for purposes of matching the populations.<sup>2-6</sup> The Greedy 5→1 digit match means

<sup>2-5</sup> Linden, A., Adams, J.L., and Roberts, N. (2005). “Using propensity scores to construct comparable control groups for disease management program evaluation.” *Disease Management Health Outcomes*. 13(2): 107-115.

that the populations were first matched on the propensity score out to the fifth decimal place. For those that did not match, the populations were then matched on the propensity score out to the fourth decimal place. This process continued down to a 1-digit match. The result of this methodology creates “best” matches first (i.e., matches with the greatest precision in propensity score) and then matches on successive “next-best” matches. Once a case and control were matched, the matches were not reconsidered. Therefore, subsequent matches were determined on what was currently available.

For the statewide level of analysis, 84.6 percent of the eligible treatment group members were matched with a control case. **Appendix C** contains detailed results of propensity score matching for each level of analysis.

Due to small sample sizes in certain subgroups, and the concomitant lack of variation in some of the covariates, some propensity score matching models failed to converge when all of the initial covariates were included in the model. To reduce the number of covariates in the propensity score matching model, while simultaneously keeping those that were more empirically relevant, backwards stepwise logistic regression was used to identify the maximum number of relevant covariates that could be retained in the model.

### **Covariate Balance and Bias Reduction**

Selecting a control group that most closely resembles the treatment group by using propensity scores has been shown to create a “covariate balance” between the two groups.<sup>2-7</sup> After the matching algorithm was applied, the covariates were evaluated to determine that the populations were matched appropriately, meaning that the propensity scoring and matching process improved covariate balance and reduced bias as anticipated. The results of the propensity score-based matching were assessed by calculating standardized bias coefficients and computing the percentage reduction in bias achieved through the matching process, as outlined below. This bias reduction represents how much closer the control group is to reflecting the characteristics of the people in the treatment group as a result of matching. The formula can be used to conclude that matching reduced bias in the control group by a certain percentage:<sup>2-8</sup>

$$BR = 100 \left( 1 - \frac{B_1}{B_0} \right)$$

Subscript 1 denotes after matching, and subscript 0 denotes before matching.

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<sup>2-6</sup> Parsons, L.S. (2001). “Reducing Bias in Propensity Score Matched-Pair Sample Using Greedy Matching Techniques.” Paper 214-26. Proceedings of the Twenty-Sixth Annual SAS Users Group International Conference. Cary (NC): SAS Institute Inc.

<sup>2-7</sup> Parsons, L.S. (2001). “Reducing Bias in Propensity Score Matched-Pair Sample Using Greedy Matching Techniques.” Paper 214-26. Proceedings of the Twenty-Sixth Annual SAS Users Group International Conference. Cary (NC): SAS Institute Inc.

<sup>2-8</sup> Rosenbaum, P.R. and Rubin, D.B. (1985). Constructing a Control Group Using Multivariate Matched Sampling Methods that Incorporate the Propensity Score. *The American Statistician* 39:33 – 38.

Where:

$$B_1 = \frac{100(\bar{x}_{1C} - \bar{x}_{1P})}{\sqrt{\frac{(s_{1C}^2 + s_{1P}^2)}{2}}} \equiv \text{standardized bias after matching}$$

$$B_0 = \frac{100(\bar{x}_{0C} - \bar{x}_{0P})}{\sqrt{\frac{(s_{0C}^2 + s_{0P}^2)}{2}}} \equiv \text{standardized bias before matching}$$

The standardized bias for binary data (e.g., gender, each disease covariate) is computed as:

$$B = \frac{100(p_C - p_P)}{\sqrt{\frac{p_P(1 - p_P) + p_C(1 - p_C)}{2}}}$$

$\bar{x}_C$  = mean of the control group

$\bar{x}_P$  = mean of the program (treatment) group

$s_C^2$  = variance of the control group

$s_P^2$  = variance of the program (treatment) group

$p_C$  = proportion of the covariate in the control group.

$p_P$  = proportion of the covariate in the program (treatment) group.

Balance for each covariate was evaluated by comparing the distributions between the control group and treatment group using a two-sample *t*-test or two-proportion *z*-test. If the resulting *p*-value was less than 0.05, then the covariate remained unbalanced.

For the statewide level of analysis, 87.0 percent of the covariates showed a reduction in bias after matching, and 27.8 percent were balanced after matching. Detailed covariate results for each level of analysis, including pre- and post-matching averages and frequencies along with bias reduction and balance, can be found in **Appendix B**.

If a covariate remained unbalanced after the matching process, that covariate was included in the difference-in-differences regression model as a control variable. Including the covariate in the regression explicitly accounts for the differences between treatment and control groups, while simultaneously controlling for the joint differences captured by the propensity score matching.

## Population and Characteristics

Table 2-3 presents characteristics of the population and matched statewide sample.

Table 2-3—Descriptive Statistics of Matched Sample Groups						
Covariate	All Matched Members		Health Home Group		Comparison Group	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Age	31.304	19.537	29.714	19.084	32.894	19.854
Female	0.535	0.499	0.532	0.499	0.538	0.499
White	0.675	0.469	0.658	0.474	0.691	0.462
Black	0.306	0.461	0.324	0.468	0.288	0.453
County: Adams	0.037	0.189	0.037	0.188	0.037	0.190
County: Butler	0.096	0.295	0.073	0.260	0.120	0.325
County: Lawrence	0.078	0.269	0.070	0.255	0.087	0.281
County: Lucas	0.664	0.472	0.701	0.458	0.628	0.483
Medicaid Member Months	11.079	2.631	10.943	2.937	11.215	2.277
MCP Member Months	7.427	5.393	7.607	5.391	7.247	5.389
Dual Eligibility Member Months	0.399	1.931	0.346	1.783	0.453	2.066
Waiver Member Months	0.544	2.449	0.467	2.284	0.622	2.601
ABD Member Months	3.468	5.270	3.287	5.171	3.648	5.361
CFC Member Months	5.688	5.748	5.957	5.781	5.419	5.702
# Mental Health Center Visits	14.483	25.336	15.500	21.736	13.467	28.449
# ED Mental Health Visits	0.074	0.452	0.070	0.474	0.078	0.428
# IP Mental Health Visits	0.026	0.202	0.026	0.223	0.026	0.179
13 or More Mental Health Rx	0.212	0.409	0.204	0.403	0.221	0.415
ADHD	0.173	0.379	0.162	0.368	0.185	0.388
Acute bronchitis	0.082	0.275	0.078	0.268	0.087	0.282
Alcohol-related disorders	0.022	0.146	0.019	0.138	0.024	0.153
Anxiety Disorders	0.099	0.299	0.083	0.275	0.116	0.320
Asthma	0.124	0.329	0.116	0.321	0.131	0.337
Autism	0.008	0.091	0.007	0.085	0.010	0.098
Bipolar Disorder	0.113	0.317	0.107	0.309	0.119	0.324
Blindness and vision defects	0.273	0.446	0.253	0.435	0.293	0.455

Cancer	0.020	0.140	0.017	0.130	0.023	0.149
Cardiac dysrhythmias	0.054	0.226	0.048	0.214	0.059	0.236
Chronic obstructive pulmonary disease and bronchiectasis	0.118	0.323	0.107	0.309	0.130	0.336
Conduct Disorder	0.102	0.303	0.095	0.293	0.110	0.313
Congestive heart failure; nonhypertensive	0.018	0.134	0.016	0.125	0.021	0.143
Coronary atherosclerosis and other heart disease	0.036	0.187	0.033	0.178	0.040	0.195
Cystic fibrosis	0.000	0.013	0.000	0.011	0.000	0.015
Delirium, dementia, and amnesic and other cognitive diseases	0.011	0.104	0.009	0.097	0.012	0.111
Depression	0.313	0.464	0.277	0.447	0.350	0.477
Developmental disorders	0.082	0.274	0.078	0.269	0.085	0.279
Diabetes	0.124	0.330	0.111	0.314	0.138	0.345
Epilepsy; convulsions	0.042	0.201	0.037	0.189	0.047	0.212
Esophageal disorders	0.059	0.236	0.054	0.227	0.065	0.246
Essential hypertension	0.170	0.375	0.152	0.360	0.187	0.390
HIV infection	0.003	0.056	0.003	0.054	0.003	0.059
Intracranial injury	0.012	0.110	0.012	0.107	0.013	0.113
Mental Disorder Not Otherwise Specified (NOS)	0.024	0.152	0.022	0.148	0.025	0.156
Neoplasms of unspecified nature or uncertain behavior	0.083	0.276	0.074	0.262	0.092	0.289
Obsessive-Compulsive Disorders	0.007	0.082	0.006	0.077	0.008	0.087
Osteoarthritis	0.066	0.249	0.060	0.237	0.072	0.259
Other Developmental Disorder	0.028	0.166	0.027	0.163	0.030	0.170
Other nervous system disorders	0.133	0.339	0.117	0.322	0.148	0.355
PTSD	0.031	0.173	0.028	0.166	0.034	0.181
Pregnancy	0.027	0.163	0.025	0.156	0.030	0.170
Psychotic Disorder	0.171	0.377	0.166	0.372	0.176	0.381
Spondylosis; intervertebral disc disorders; other back	0.220	0.414	0.196	0.397	0.244	0.429
Substance-related disorders	0.054	0.225	0.047	0.212	0.060	0.238
Thyroid disorders	0.047	0.211	0.042	0.201	0.051	0.220

## Difference-in-Differences Analysis and Cost Savings Calculation

Once the populations were matched, a difference-in-differences analysis was performed to compare the PMPM costs for the two populations during the baseline period and the remeasurement period. The difference-in-differences analysis allows for an expected cost for the treatment group to be calculated by taking into account expected changes in costs without the Health Home intervention. This is done by subtracting the average change in the control group from the average change in the treatment group.<sup>2-9</sup> This removes biases from the remeasurement period comparisons due to permanent differences between the two groups. The generic difference-in-differences model is:

$$Y_{it} = \beta_0 + \beta_1 T_{it} + \beta_2 R_t + \delta_1 (R_t * T_{it}) + \gamma \mathbf{D}'_{it} + u_{it}$$

where  $Y_{it}$  is the outcome of interest for individual  $i$  in time period  $t$ .  $R_t$  is a dummy variable for the remeasurement time period. The dummy variable  $T_{it}$  identifies the treatment group with a 1 and the control group with a 0. The vector  $\mathbf{D}'$  represents mean-centered observed covariates that remained unbalanced after the propensity score matching process, and  $\gamma$  is a coefficient vector. The coefficient,  $\beta_1$ , identifies the average difference between the groups prior to the Health Home intervention. The time period dummy,  $R$ , captures factors that would have changed in the absence of the intervention. The coefficient of interest,  $\delta_1$ , multiplies the interaction term,  $R_t * T_{it}$ , which is the same as the dummy variable equal to one for those observations in the treatment group in the remeasurement period. The final difference-in-differences estimate is:

$$\hat{\delta}_1 = (\bar{y}_{T,R} - \bar{y}_{T,B}) - (\bar{y}_{C,R} - \bar{y}_{C,B}) \mid \mathbf{D}'$$

The estimate provides the expected cost without the intervention (i.e., expected adjustment factor) while holding constant all observed covariates in  $\mathbf{D}'$ . Adding these covariates allowed for a more precise estimation of the true Health Home program effect by controlling for observed differences between the comparison and treatment groups. Thus, the cost savings estimates provided in this report are similar, but not equal to, a simple subtraction on the differences. The overall estimates take into account the average monthly Health Home case rate program costs; however, the cost savings estimates for individual categories of service do not account for average monthly Health Home case rate costs, since average monthly Health Home case rate costs are made at the member level and not the category of service level.

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<sup>2-9</sup> Imbens/Woodridge. Difference-in-Differences Estimation. Lecture Notes 10, Summer 2007. Available at: [http://www.nber.org/WNE/lect\\_10\\_diffindiffs.pdf](http://www.nber.org/WNE/lect_10_diffindiffs.pdf). Accessed on: January 21, 2014.

### Categories of Service

The difference-in-differences analysis was performed at the category-of-service level. The following categories of service were evaluated:

- ◆ Medical (i.e., Professional) – Mental Health
- ◆ Medical (i.e., Professional) – Non-mental Health
- ◆ ED
- ◆ Inpatient
- ◆ Outpatient
- ◆ Pharmacy
- ◆ Other

The ED category of service was identified as outlined in Table 2-4. For the remaining non-ED claims, category of service was identified by the CDE\_CLM\_TYPE field in the vendor files, as depicted in Table 2-5.

Table 2-4—Codes to Identify ED Visits		
<b>UB Revenue Codes</b>	<b>AND</b>	<b>UB Type of Bill Codes</b>
045x, 0981		013x
<i>OR</i>		
<b>CPT Codes</b>	<b>AND</b>	<b>Place of Service Codes</b>
10040 – 69979		23
<i>OR</i>		
	<b>CPT Codes</b>	
	99281 – 99285	

Table 2-5—Categories of Service Identification		
Category of Service	CDE_CLM_TYPE Value	Additional Codes
Medical – Non-Mental Health	M (Professional Claim Type)	All codes occurring on this claim type counted as medical claims, with the exceptions of: <ul style="list-style-type: none"> <li>• Claim lines containing the Health Home case management CPT code (S0281), which were evaluated separately.</li> <li>• Claims containing codes defined in Table 2-6.</li> </ul>
Medical – Mental Health	M (Professional Claim Type)	This category was limited to claims containing the codes in Table 2-6. Claim lines containing the Health Home case management CPT code (S0281) were excluded.
Inpatient	I (Inpatient Claim Type)	
Outpatient	O (Outpatient Claim Type)	
Pharmacy	P and Q (Pharmacy and Compound Pharmacy Claim Types)	
Other <sup>2-10</sup>	Not identified in any of the above CDE_CLM_TYPE, and also not identified as CDE_CLM_TYPE = "D"	

Table 2-6 provides the codes to identify the outpatient mental health services.

Table 2-6—Codes to Identify Mental Health Services			
Mental Health Service	Local Codes (Prior to June 30, 2012)	CPT Code (July 1, 2012 – December 31, 2012)	CPT Code (January 1, 2013 to Current)
Pharmacologic Management	Z1831	90862	90863
Mental Health Assessment (non-physician)	Z1832	H0031	H0031
Psychiatric Diagnostic Interview (physician)	Z1839	90801	90792
Counseling & Therapy (Ind)	Z1833	H0004	H0004
Counseling & Therapy (Grp)	Z1834	H0004	H0004
Crisis Intervention	Z1837	S9484	S9484
Partial Hospitalization	Z1838	S0201	S0201
Community Psychiatric Support Tx (Ind)	Z1840	H0036	H0036
Community Psychiatric Support Tx (Grp)	Z1841	H0036	H0036

<sup>2-10</sup> The other category includes crossover claims and long-term care claims. Dental claims were excluded from the analysis due to incomplete dental claim data at the time of analysis.

## Exclusions

HSAG evaluated medical costs associated with deliveries and women who had a delivery during the baseline and remeasurement periods. HSAG, in conjunction with ODM, determined that these members and/or costs did not need to be excluded from the analysis because there were no substantial differences between the control/treatment groups or between the treatment/remeasurement periods.

Costs associated with traumatic or related events (i.e., accidents) were removed from the analysis. Traumatic or related events were identified as outlined in Table 2-7 below. In order to further reduce undue influence from anomalous data, costs for individual claims were capped at \$100,000. Additionally, prior to construction of the final difference-in-differences regression model, the data were reviewed for outliers. The data contained outliers exhibiting considerable deviation from the average, particularly for the levels of analysis that had a relatively small number of eligible members. For each matched sample, outliers were identified using the studentized residual of a preliminary regression, and any observation having a studentized residual greater than five in absolute value was removed from the final estimation.<sup>2-11</sup>

**Table 2-7—Codes Used To Identify Traumatic or Related Events**

ICD-9-CM Diagnosis Codes
800-854, 860-871, 874.0-874.59, 885-887, 895-897, 900-915, 918, 920-959, 990-996, E80-E84, E88-E92, E96-E98

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<sup>2-11</sup> HSAG can provide a complete listing of all outliers upon request.

**Overview**

This section presents the results of the overall cost savings analysis. An evaluation was performed to compare PMPM costs during the baseline period (July 1, 2011 – June 30, 2012) and the remeasurement period (January 1, 2013 – December 31, 2013).

The tables below show the statistical significance of results, indicating if the program demonstrated significant cost savings. Significance thresholds are reported at the 95 percent confidence level. Some results presented in the tables below may not be statistically significant (i.e., noted with “N/S”). The lack of significance may be the result of large variance in comparison to the average Cost Savings, a small sample size, or both.<sup>3-1</sup>

**Statewide Cost Savings**

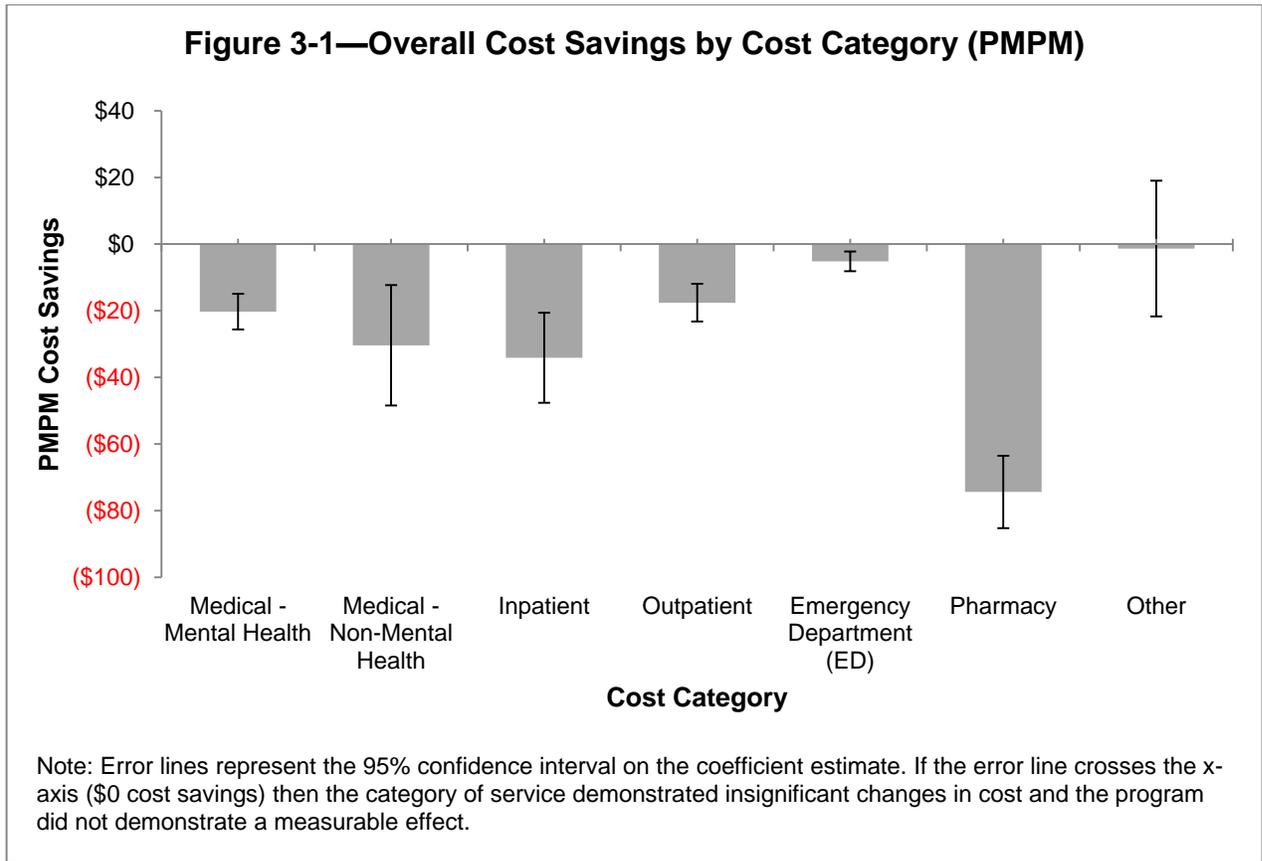
Table 3-1 and Figure 3-1 display the positive or negative program effect of each cost category. Overall, the statewide negative cost savings were \$516 PMPM.

<b>Table 3-1—Overall Cost Savings by Cost Category (PMPM)</b>			
<b>Cost Category</b>	<b>Program Effect (Cost Savings)</b>		<b>Sample Treatment Group Size</b>
Medical - Mental Health	(\$20)	*	8,335
Medical - Non-Mental Health	(\$30)	*	
Inpatient	(\$34)	*	
Outpatient	(\$18)	*	
Emergency Department (ED)	(\$5)	*	
Pharmacy	(\$74)	*	
Average Health Home Monthly Case Rate	(\$333)	*	
Other	(\$1)	N/S	
<b>Total</b>	<b>(\$516)</b>	<b>*</b>	

*A negative cost savings indicates an increase in cost.  
 N/S indicates the results were not statistically significant.  
 \*Indicates statistical significance at the 95% confidence level or greater.  
 Total cost savings may not equal the sum of all cost categories because each cost category and total cost savings are modeled independently.*

<sup>3-1</sup> The sample treatment group size is included in the tables as a reference.

**Figure 3-1—Overall Cost Savings by Cost Category (PMPM)**

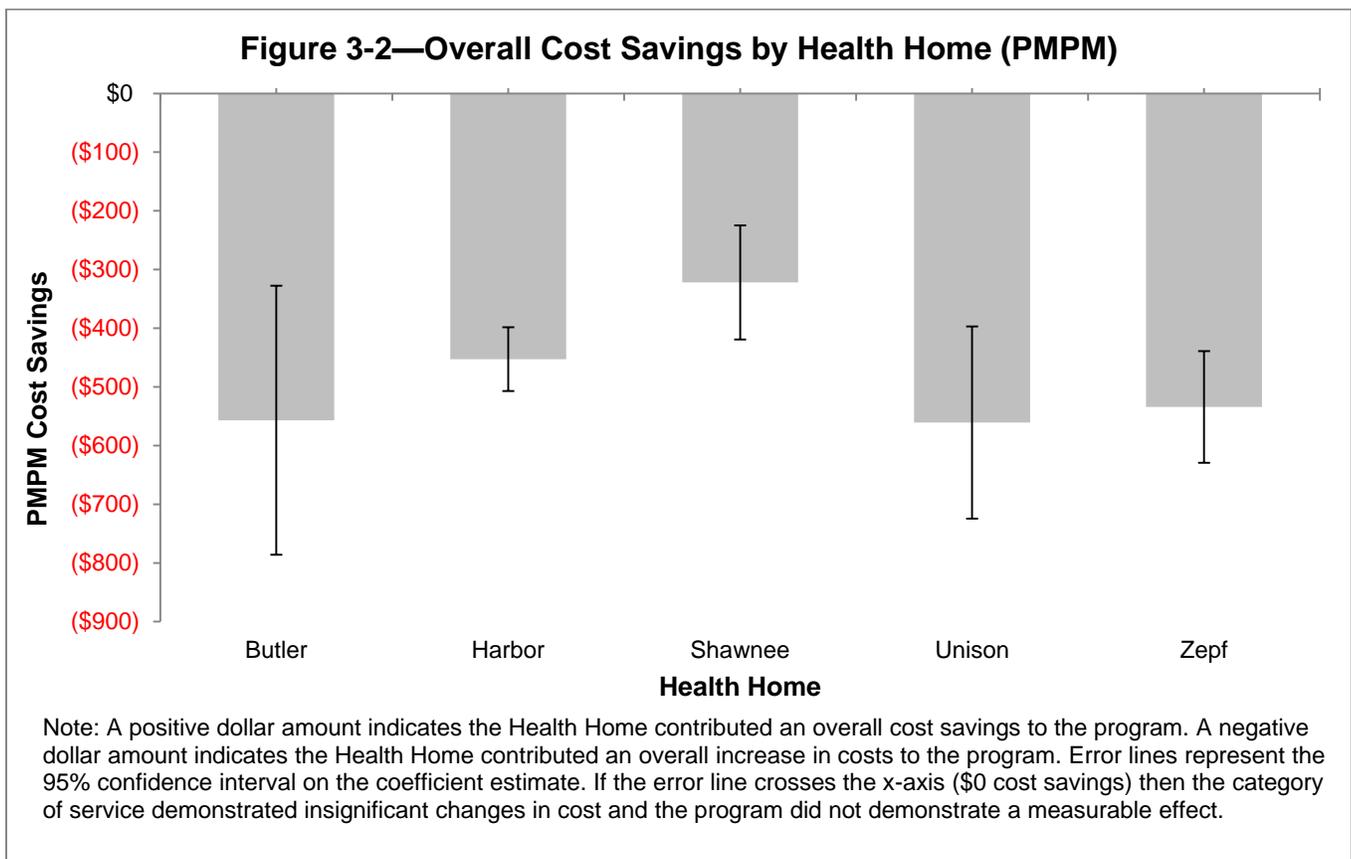


## Health Home Cost Savings

Table 3-2 and Figure 3-2, on the following page, display the positive or negative program effect of the Health Homes on cost savings. The results indicate that all Health Homes produced significant negative cost savings, ranging in magnitude from \$322 to \$561 PMPM.

Table 3-2—Overall Cost Savings by Health Home (PMPM)			
Health Home	Program Effect (Cost Savings)		Sample Treatment Group Size
	Butler	(\$557)	
Harbor	(\$453)	*	2,522
Shawnee	(\$322)	*	2,049
Unison	(\$561)	*	1,652
Zepf	(\$534)	*	2,997
<b>Statewide</b>	<b>(\$516)</b>	<b>*</b>	<b>8,335<sup>†</sup></b>

*A negative cost savings indicates an increase in cost.  
 \*Indicates statistical significance at the 95% confidence level or greater.  
 † Statewide Sample Treatment Group Size may not equal the sum of Sample Treatment Group Sizes for each Health Home because members for each Health Home and Statewide are modeled independently.*



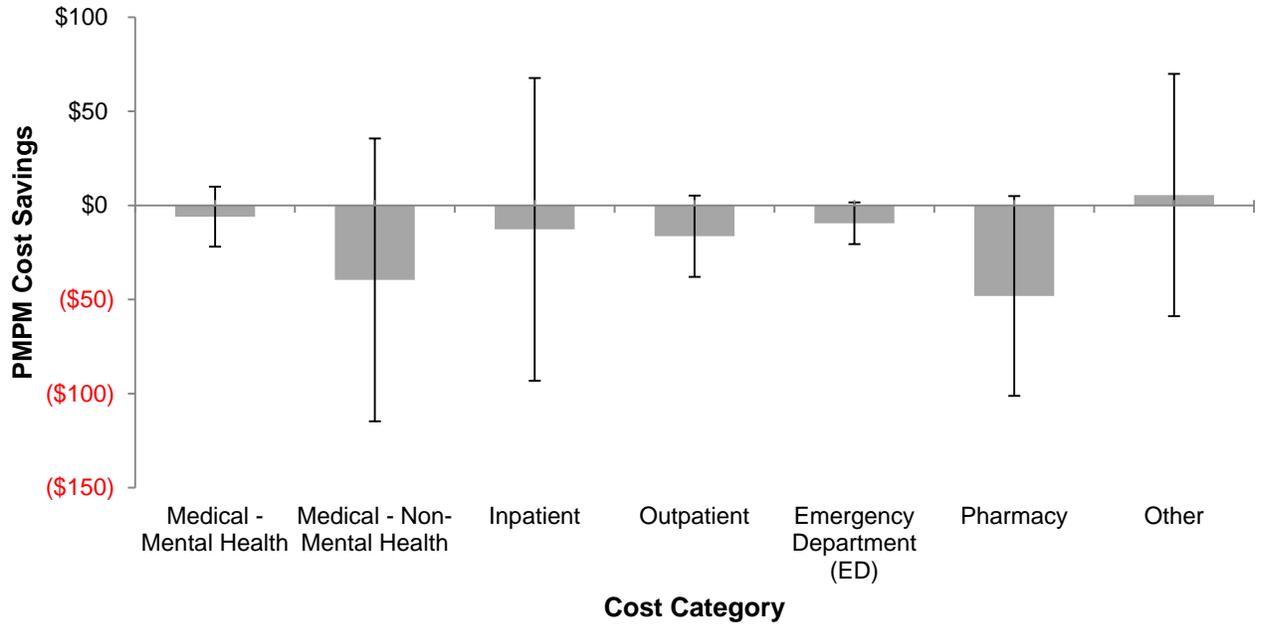
**Butler**

Table 3-3 and Figure 3-3 present the cost savings for Butler. Overall, Butler produced a negative cost savings of \$557 PMPM.

<b>Table 3-3—Butler Overall Cost Savings by Category of Service (PMPM)</b>			
<b>Cost Category</b>	<b>Program Effect (Cost Savings)</b>		<b>Sample Treatment Group Size</b>
	Medical - Mental Health	(\$6)	
Medical - Non-Mental Health	(\$40)	N/S	
Inpatient	(\$13)	N/S	
Outpatient	(\$16)	N/S	
Emergency Department (ED)	(\$10)	N/S	
Pharmacy	(\$48)	N/S	
Average Health Home Monthly Case Rate	(\$369)	*	
Other	\$5	N/S	
<b>Total</b>	<b>(\$557)</b>	<b>*</b>	<b>613</b>

*A negative cost savings indicates an increase in cost.  
 N/S indicates the results were not statistically significant.  
 \*Indicates statistical significance at the 95% confidence level or greater.  
 Total cost savings may not equal the sum of all cost categories because each cost category and total cost savings are modeled independently.*

**Figure 3-3—Butler Overall Cost Savings by Cost Category (PMPM)**



Note: Error lines represent the 95% confidence interval on the coefficient estimate. If the error line crosses the x-axis (\$0 cost savings) then the category of service demonstrated insignificant changes in cost and the program did not demonstrate a measurable effect.

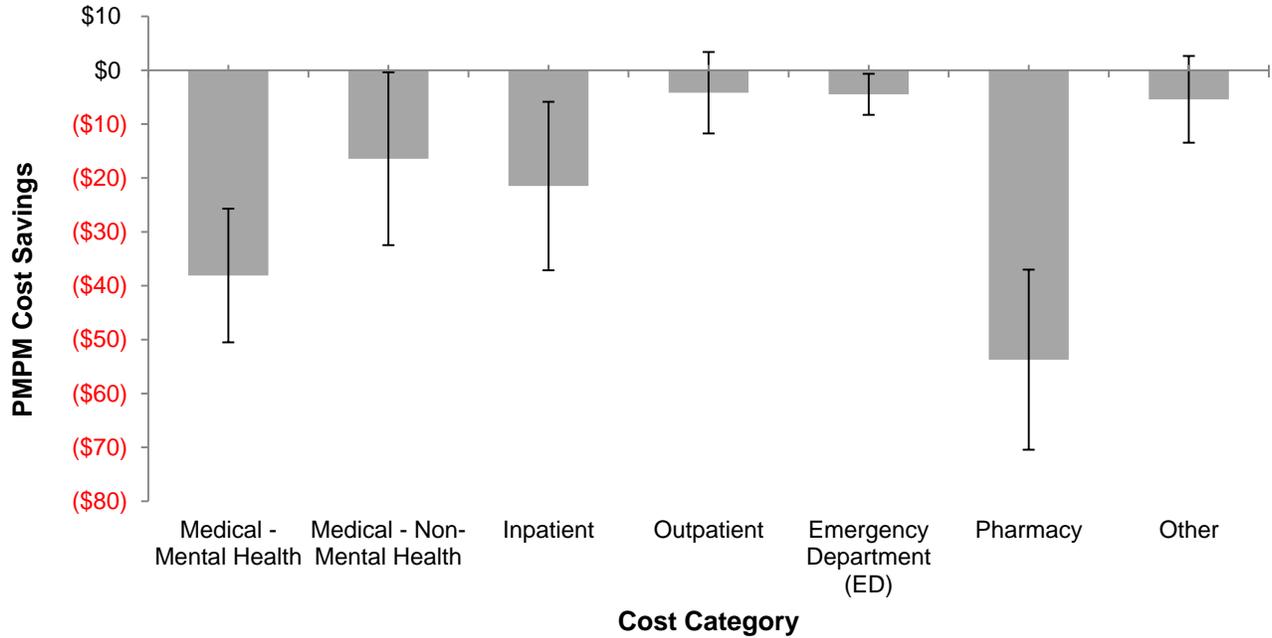
**Harbor**

Table 3-4 and Figure 3-4 present the cost savings for Harbor. Overall, Harbor produced a negative cost savings of \$453 PMPM.

<b>Table 3-4—Harbor Overall Cost Savings by Category of Service (PMPM)</b>			
<b>Cost Category</b>	<b>Program Effect (Cost Savings)</b>		<b>Sample Treatment Group Size</b>
Medical - Mental Health	(\$38)	*	
Medical - Non-Mental Health	(\$16)	*	
Inpatient	(\$21)	*	
Outpatient	(\$4)	N/S	
Emergency Department (ED)	(\$4)	*	
Pharmacy	(\$54)	*	
Average Health Home Monthly Case Rate	(\$283)	*	
Other	(\$5)	N/S	
<b>Total</b>	<b>(\$453)</b>	<b>*</b>	

*A negative cost savings indicates an increase in cost.  
N/S indicates the results were not statistically significant.  
\*Indicates statistical significance at the 95% confidence level or greater.  
Total cost savings may not equal the sum of all cost categories because each cost category and total cost savings are modeled independently.*

**Figure 3-4—Harbor Overall Cost Savings by Cost Category (PMPM)**



Note: Error lines represent the 95% confidence interval on the coefficient estimate. If the error line crosses the x-axis (\$0 cost savings) then the category of service demonstrated insignificant changes in cost and the program did not demonstrate a measurable effect.

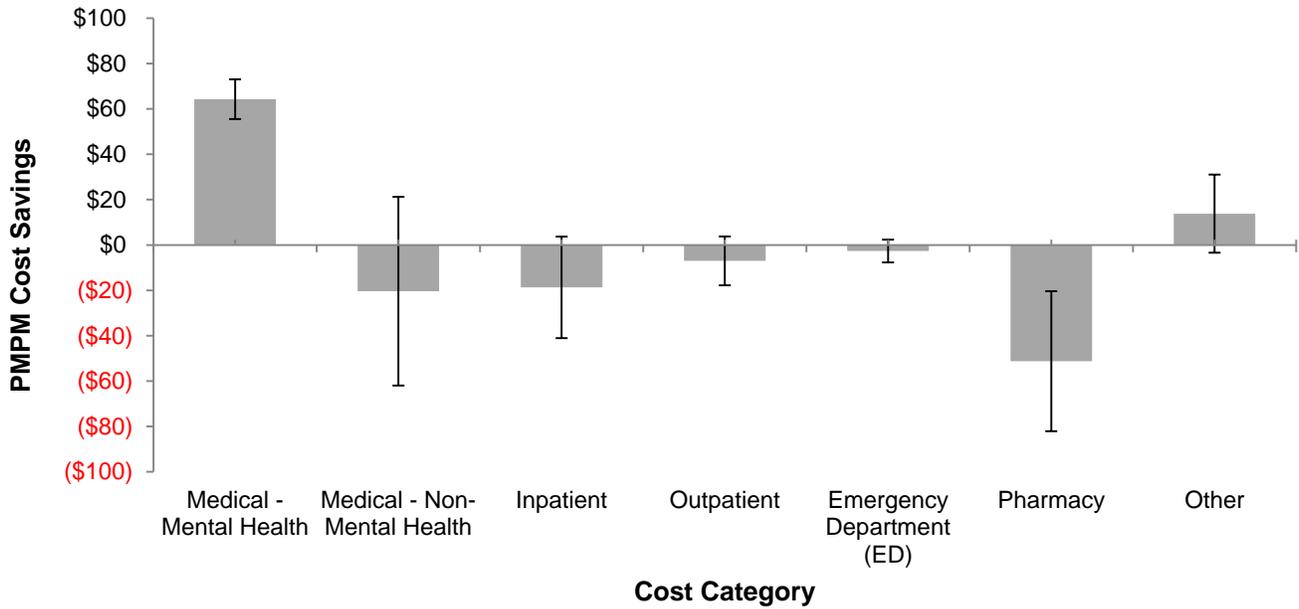
## Shawnee

Table 3-5 and Figure 3-5 present the cost savings for Shawnee. Overall, Shawnee produced a negative cost savings of \$322 PMPM, but showed significant cost savings in the Medical—Mental Health category of service.

<b>Table 3-5—Shawnee Overall Cost Savings by Category of Service (PMPM)</b>			
<b>Cost Category</b>	<b>Program Effect (Cost Savings)</b>		<b>Sample Treatment Group Size</b>
Medical - Mental Health	\$64	*	
Medical - Non-Mental Health	(\$20)	N/S	
Inpatient	(\$19)	N/S	
Outpatient	(\$7)	N/S	
Emergency Department (ED)	(\$3)	N/S	
Pharmacy	(\$51)	*	
Average Health Home Monthly Case Rate	(\$326)	*	
Other	\$14	N/S	
<b>Total</b>	<b>(\$322)</b>	<b>*</b>	

*A negative cost savings indicates an increase in cost.  
 N/S indicates the results were not statistically significant.  
 \*Indicates statistical significance at the 95% confidence level or greater.  
 Total cost savings may not equal the sum of all cost categories because each cost category and total cost savings are modeled independently.*

**Figure 3-5—Shawnee Overall Cost Savings by Cost Category (PMPM)**



Note: Error lines represent the 95% confidence interval on the coefficient estimate. If the error line crosses the x-axis (\$0 cost savings) then the category of service demonstrated insignificant changes in cost and the program did not demonstrate a measurable effect.

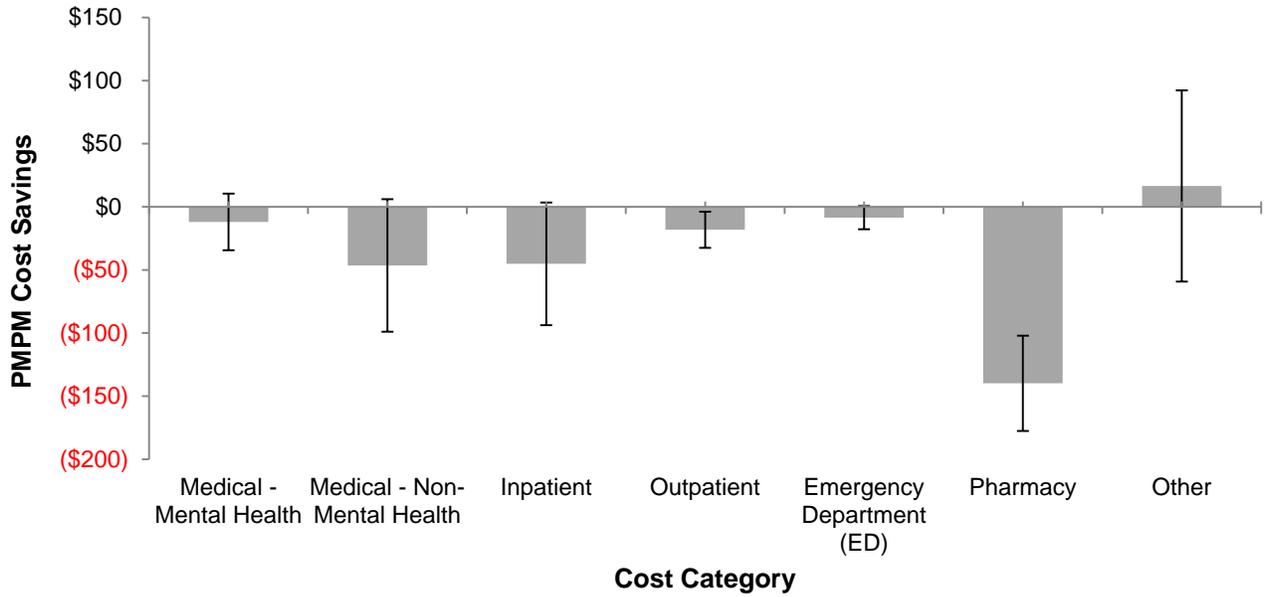
**Unison**

Table 3-6 and Figure 3-6 present the cost savings for Unison. Overall, Unison produced a negative cost savings of \$561 PMPM.

<b>Table 3-6—Unison Overall Cost Savings by Category of Service (PMPM)</b>			
<b>Cost Category</b>	<b>Program Effect (Cost Savings)</b>		<b>Sample Treatment Group Size</b>
Medical - Mental Health	(\$12)	N/S	
Medical - Non-Mental Health	(\$47)	N/S	
Inpatient	(\$45)	N/S	
Outpatient	(\$18)	*	
Emergency Department (ED)	(\$9)	N/S	
Pharmacy	(\$140)	*	
Average Health Home Monthly Case Rate	(\$296)	*	
Other	\$16	N/S	
<b>Total</b>	<b>(\$561)</b>	<b>*</b>	

*A negative cost savings indicates an increase in cost.  
 N/S indicates the results were not statistically significant.  
 \*Indicates statistical significance at the 95% confidence level or greater.  
 Total cost savings may not equal the sum of all cost categories because each cost category and total cost savings are modeled independently.*

**Figure 3-6—Unison Overall Cost Savings by Cost Category (PMPM)**



Note: Error lines represent the 95% confidence interval on the coefficient estimate. If the error line crosses the x-axis (\$0 cost savings) then the category of service demonstrated insignificant changes in cost and the program did not demonstrate a measurable effect.

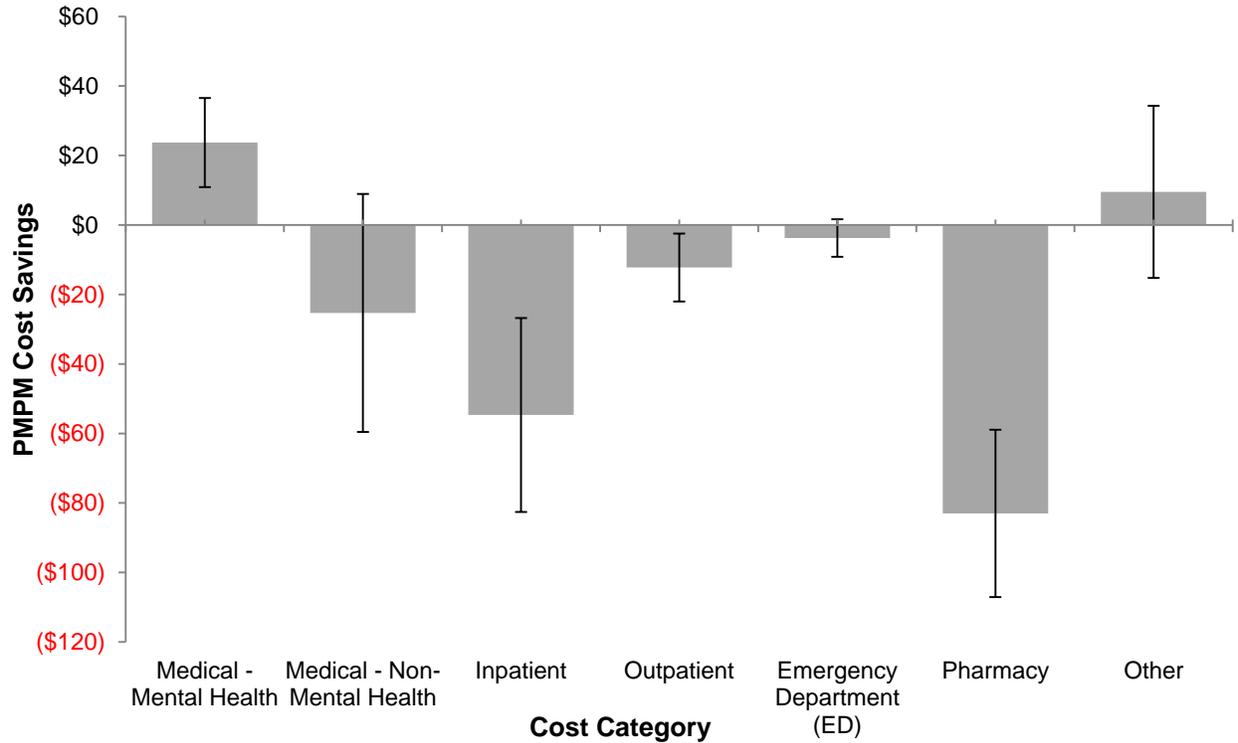
**Zepf**

Table 3-7 and Figure 3-7 present the cost savings for Zepf. Overall, Zepf produced a negative cost savings of \$534 PMPM, but showed significant cost savings in the Medical—Mental Health category of service.

<b>Table 3-7—Zepf Overall Cost Savings by Category of Service (PMPM)</b>			
<b>Cost Category</b>	<b>Program Effect (Cost Savings)</b>		<b>Sample Treatment Group Size</b>
Medical - Mental Health	\$24	*	
Medical - Non-Mental Health	(\$25)	N/S	
Inpatient	(\$55)	*	
Outpatient	(\$12)	*	
Emergency Department (ED)	(\$4)	N/S	
Pharmacy	(\$83)	*	
Average Health Home Monthly Case Rate	(\$397)	*	
Other	\$10	N/S	
<b>Total</b>	<b>(\$534)</b>	<b>*</b>	

*A negative cost savings indicates an increase in cost.  
 N/S indicates the results were not statistically significant.  
 \*Indicates statistical significance at the 95% confidence level or greater.  
 Total cost savings may not equal the sum of all cost categories because each cost category and total cost savings are modeled independently.*

**Figure 3-7—Zepf Overall Cost Savings by Cost Category (PMPM)**



Notes : Error lines represent the 95% confidence interval on the coefficient estimate. If the error line crosses the x-axis (\$0 cost savings) then the category of service demonstrated insignificant changes in cost and the program did not demonstrate a measurable effect.

## Additional Levels of Analysis

A total of 42 levels of analysis were included in the cost savings analysis. The full results from additional levels of analysis can be found in **Appendix A**. However, none of these levels of analysis showed a cost savings; all showed significant overall negative cost savings.

## Robustness Checks

In addition to the analysis described above, HSAG conducted a variety of checks to verify that the results were robust to alternative methods and specifications. HSAG utilized two different sets of Health Home enrollment criteria to identify treatment group members (requiring 6 months of continuous enrollment according to Health Home enrollment spans, and the enrollment requirements outlined in the Methodology section). Results of this analysis are consistent with those provided in this report. Additionally, HSAG investigated an alternative methodology for accounting for the costs and member months associated with a “gap month” in enrollment. In the alternative methodology, neither the costs nor the member months associated with a gap month were counted toward the PMPM averages. The results under this assumption are consistent with the findings provided in this report.

In order to rule out the possibility of biased results due to idiosyncrasies in the county-specific comparison groups, HSAG expanded the eligible control group to Medicaid members residing in all counties. The negative cost savings from this analysis remained statistically significant.

Average costs for the treatment and control group matched samples were different at baseline. In order to determine if unmatched differences in costs at baseline contributed to the result, HSAG analyzed separate propensity score models in which member costs at baseline were added to the logistic regression model. The purpose of this was to match control group members to treatment group members not only on the demographic and disease covariates listed previously in Table 2-1 and Table 2-2, but also to match members by costs at baseline. The results did not materially change when Medicaid costs at baseline were added as covariates to the propensity score model.

As a final check of robustness, tests for outliers were performed. HSAG removed from the final cost savings calculation members with an absolute studentized residual greater than five. HSAG tested cost savings results under a variety of methods to identify outliers, which all resulted in a similar conclusion. Specifically, HSAG tested a number of thresholds for studentized residuals, ranging from 2 to 50, and using standard thresholds for Cook’s D statistic and leverage (H) to identify outliers. Under all scenarios, results of these analyses are consistent with those provided in this report.

### Key Findings

This analysis resulted in several key findings. First, all five evaluated Health Homes produced statistically significant negative cost savings, with an overall statewide negative cost savings of \$516 PMPM. The average monthly Health Home case rate was \$333 PMPM; thus, the Health Homes overall produced a negative cost savings greater than the average monthly Health Home case rate.

The negative cost savings produced by the individual Health Homes range from \$322 to \$561 PMPM. Forty-two different stratifications were evaluated (e.g., by age, managed care plan, Health Home) and none of these subgroups showed an overall cost savings. However, two Health Homes (Zepf and Shawnee) showed a significant cost savings in one category of service (Medical – Mental Health). The primary driver of the cost increases, ignoring average monthly Health Home case rates, is found in pharmacy costs. Members in all five Health Homes had significantly higher pharmaceutical costs than the comparison group, ranging from \$48 PMPM for Butler to \$140 PMPM for Unison.

The overall findings described above are corroborated by the additional stratifications. The failure to find consistent statistically significant cost savings among the other stratifications reinforces the primary conclusions described above. Despite the prevalence of significant negative cost savings overall and across the majority of cost categories, some stratifications demonstrated significant cost savings in the Medical – Mental Health category. However, these cost savings were more than offset through the average monthly Health Home case rate and significant negative cost savings among the other categories of service.

### Limitations and Cautions

The findings presented in the Cost Savings Annual Report are subject to some limitations in study design, analysis, and interpretation. These limitations should be considered carefully when interpreting or generalizing the findings presented. These limitations are discussed below.

### Research Scope

This analysis of the Health Home program does not account for any improvement in utilization rates, outcomes, or quality of life. As mentioned in the Executive Summary on page 1-2, an analysis of utilization rates was conducted as part of the comprehensive Health Home evaluation. Additionally, results of this analysis do not forecast future trends in Medicaid costs for Health Home members.

## **Sample Size**

While the sample size was sufficient to study the statewide population, caution should be exercised when interpreting results for some of the most specific levels of analysis. In general, results generated for levels of analysis with fewer than roughly 500 members in either the control or treatment group should be viewed with caution.

## **Health Home Enrollment**

The Health Home enrollment data contain both Health Home enrollment spans (i.e., start and end dates of Health Home enrollment) and information on the payment of the average monthly Health Home case rate for each member every month. These two sources of enrollment information are poorly aligned; there are many member months for which the Health Home enrollment spans indicate that a member is enrolled for a given month, but there is no Health Home services payment for that member during the month. Given that the Health Home services payment indicates that a Health Home performed services and received payment for the month, enrollment criteria were based on the average monthly Health Home case rates. However, it is possible that Health Homes members' received some Health Home services/benefits during months in which the member was enrolled according to the spans data, but did not have a Health Home service payment. That is, the nature of the mismatch in enrollment data is unclear. As a robustness check on the results, HSAG performed the cost savings analysis using different Health Home enrollment criteria for the treatment group, including calculating the six months of enrollment using the Health Home enrollment spans as opposed to the average monthly Health Home case rates. This change to the enrollment criteria did not materially change the results.

## **Comparison Group**

In a randomized study with a large sample size, the comparison group is virtually identical to the treatment group and an analysis of such a study will provide unbiased estimates of outcomes for both groups. Because this analysis is an observational study in which the treatment group is selected based on medical care needs and population characteristics, there are inherent differences between the treatment group and potential comparison group. A valid comparison group must be constructed in order to account for these differences. Propensity score matching is a technique used to build a comparison group that has characteristics similar to the treatment group. One caveat of this approach is that the eligible comparison group (i.e., pre-matching group) must include members with characteristics similar to the treatment group. If the members of the eligible comparison group are fundamentally different from the treatment group, propensity score matching cannot be used to build an appropriate comparison group. For example, if all of the Medicaid members with SPMI in the five Health Home counties were enrolled in a Health Home, leaving no unenrolled members in those counties, propensity score matching would not produce a usable comparison group. HSAG took several steps to investigate the appropriateness of the eligible comparison group. First, HSAG reviewed the covariate balance after the matching process for an improvement in the balance of key covariates, particularly those related to mental health disorders. In addition, HSAG ran the analysis without the Health Home county requirement, thus expanding the eligible comparison group population to the entire state. The results were similar to the results obtained by limiting the comparison group to Health Home counties.

## ***Time Frame***

The baseline and remeasurement periods for this analysis were both one year. Any Health Homes effects on cost savings that require longer than one year to materialize are not captured in this study. Additionally, the remeasurement period ends fifteen months after the start of the Health Home program. It is possible that measurable cost savings will not be realized in that time frame. As an observational study, this analysis does not predict future cost savings; therefore, continued analysis involving later time frames will be required to address this concern.

## ***Cost Data***

This study is concerned exclusively with Medicaid cost savings. Costs incurred by other entities, such as the state mental hospital and Medicare, are not represented in this study. Thus, the results of this study should not be used to infer overall cost savings, which may differ from the Medicaid cost savings.

## APPENDIX A. RESULTS FOR EACH LEVEL OF ANALYSIS

This section provides the detailed cost savings results for each level of analysis. Results were stratified by the following levels of analysis for each category of service:

- ◆ Statewide Overall
  - Age Group.
  - CMHC Experience.
- ◆ Five Health Homes
  - Age Group within each Health Home.
  - CMHC Experience within each Health Home.
- ◆ Health Home Design
  - Access to pharmacist on-site.
- ◆ County
  - Lucas County.
  - Age Group within Lucas County.
  - CMHC Experience within Lucas County.
- ◆ Five MCPs

The tables in this section show cost savings for the baseline comparison group, remeasurement comparison group, baseline Health Home treatment group, and remeasurement Health Home treatment group.

Please note, readers are cautioned that naïve comparisons of the baseline and remeasurement costs for treatment and comparison group members will differ from the model estimated impact. This difference happens because the naïve comparison is based on the observed data, which includes random fluctuations in costs due to uncontrolled trends in costs across patient mixes. In contrast, the model estimated impacts are based on the expected difference in costs, after controlling for mean-centered observed covariates that remained unbalanced after the propensity score matching process.

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>All Health Homes (All Ages, All CMHC)</b>						
Medical - Mental Health	\$107	\$72	\$130	\$114	(\$20) *	8,335
Medical - Non-Mental Health	\$213	\$219	\$160	\$194	(\$30) *	8,335
Inpatient	\$91	\$69	\$73	\$85	(\$34) *	8,335
Outpatient	\$55	\$46	\$54	\$63	(\$18) *	8,335
Emergency Department (ED)	\$32	\$29	\$30	\$33	(\$5) *	8,335
Pharmacy	\$173	\$157	\$164	\$221	(\$74) *	8,335
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$333	(\$333) *	8,335
Other	\$133	\$133	\$30	\$28	(\$1) N/S	8,335
<b>Total</b>	<b>\$964</b>	<b>\$912</b>	<b>\$706</b>	<b>\$1,162</b>	<b>(\$516) *</b>	<b>8,335</b>
<b>All Health Homes (Under 18, All CMHC)</b>						
Medical - Mental Health	\$113	\$74	\$138	\$155	(\$56) *	3,562
Medical - Non-Mental Health	\$55	\$53	\$45	\$57	(\$14) *	3,562
Inpatient	\$22	\$16	\$17	\$20	(\$9) *	3,562
Outpatient	\$28	\$23	\$27	\$28	(\$6) *	3,562
Emergency Department (ED)	\$11	\$12	\$11	\$13	(\$1) N/S	3,562
Pharmacy	\$95	\$91	\$100	\$142	(\$45) *	3,562
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$321	(\$321) *	3,562
Other	\$0	\$0	\$0	\$0	\$0 N/S	3,562
<b>Total</b>	<b>\$363</b>	<b>\$302</b>	<b>\$355</b>	<b>\$772</b>	<b>(\$479) *</b>	<b>3,562</b>
<b>All Health Homes (18 and Over, All CMHC)</b>						
Medical - Mental Health	\$103	\$66	\$120	\$85	(\$2) N/S	4,649
Medical - Non-Mental Health	\$282	\$297	\$234	\$285	(\$42) *	4,649
Inpatient	\$152	\$116	\$122	\$146	(\$58) *	4,649
Outpatient	\$75	\$67	\$76	\$90	(\$22) *	4,649
Emergency Department (ED)	\$46	\$43	\$46	\$50	(\$6) *	4,649
Pharmacy	\$224	\$201	\$213	\$286	(\$98) *	4,649
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$342	(\$342) *	4,649
Other	\$237	\$253	\$56	\$53	\$15 N/S	4,649
<b>Total</b>	<b>\$1,325</b>	<b>\$1,274</b>	<b>\$974</b>	<b>\$1,471</b>	<b>(\$563) *</b>	<b>4,649</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>All Health Homes (All Ages, CMHC Experience)</b>						
Medical - Mental Health	\$142	\$93	\$155	\$110	(\$4) N/S	5,212
Medical - Non-Mental Health	\$178	\$176	\$162	\$193	(\$32) *	5,212
Inpatient	\$83	\$63	\$64	\$65	(\$21) *	5,212
Outpatient	\$51	\$42	\$49	\$48	(\$8) *	5,212
Emergency Department (ED)	\$34	\$30	\$29	\$29	(\$4) N/S	5,212
Pharmacy	\$169	\$142	\$160	\$212	(\$79) *	5,212
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$331	(\$331) *	5,212
Other	\$27	\$28	\$24	\$24	\$1 N/S	5,212
<b>Total</b>	<b>\$883</b>	<b>\$799</b>	<b>\$719</b>	<b>\$1,112</b>	<b>(\$477) *</b>	<b>5,212</b>
<b>All Health Homes (All Ages, No CMHC Experience)</b>						
Medical - Mental Health	\$0	\$6	\$0	\$125	(\$118) *	2,141
Medical - Non-Mental Health	\$120	\$127	\$96	\$148	(\$45) *	2,141
Inpatient	\$59	\$51	\$57	\$103	(\$48) *	2,141
Outpatient	\$56	\$42	\$50	\$79	(\$41) *	2,141
Emergency Department (ED)	\$26	\$22	\$29	\$38	(\$13) *	2,141
Pharmacy	\$88	\$79	\$81	\$186	(\$111) *	2,141
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$334	(\$333) *	2,141
Other	\$54	\$56	\$19	\$16	\$2 N/S	2,141
<b>Total</b>	<b>\$454</b>	<b>\$470</b>	<b>\$361</b>	<b>\$1,083</b>	<b>(\$697) *</b>	<b>2,141</b>
<b>Butler (All Ages, All CMHC)</b>						
Medical - Mental Health	\$66	\$53	\$108	\$98	(\$6) N/S	613
Medical - Non-Mental Health	\$196	\$210	\$186	\$235	(\$40) N/S	613
Inpatient	\$131	\$135	\$110	\$127	(\$13) N/S	613
Outpatient	\$68	\$54	\$60	\$63	(\$16) N/S	613
Emergency Department (ED)	\$33	\$30	\$29	\$35	(\$10) N/S	613
Pharmacy	\$188	\$185	\$208	\$246	(\$48) N/S	613
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$369	(\$369) *	613
Other	\$116	\$133	\$21	\$30	\$5 N/S	613
<b>Total</b>	<b>\$1,078</b>	<b>\$1,067</b>	<b>\$783</b>	<b>\$1,300</b>	<b>(\$557) *</b>	<b>613</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Butler (Under 18, All CMHC)</b>						
Medical - Mental Health	\$134	\$116	\$129	\$169	(\$59) N/S	157
Medical - Non-Mental Health	\$58	\$67	\$65	\$97	(\$22) N/S	157
Inpatient	\$46	\$79	\$53	\$134	(\$48) N/S	157
Outpatient	\$42	\$42	\$40	\$34	\$6 N/S	157
Emergency Department (ED)	\$14	\$11	\$12	\$19	(\$9) N/S	157
Pharmacy	\$99	\$116	\$156	\$181	(\$7) N/S	157
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$369	(\$369) *	157
Other	\$0	\$0	\$0	\$0	\$0 *	157
<b>Total</b>	<b>\$463</b>	<b>\$488</b>	<b>\$450</b>	<b>\$1,047</b>	<b>(\$567) *</b>	<b>157</b>
<b>Butler (18 and Over, All CMHC)</b>						
Medical - Mental Health	\$65	\$46	\$105	\$84	\$1 N/S	456
Medical - Non-Mental Health	\$317	\$299	\$263	\$325	(\$93) N/S	456
Inpatient	\$99	\$89	\$112	\$109	(\$7) N/S	456
Outpatient	\$74	\$59	\$67	\$73	(\$20) N/S	456
Emergency Department (ED)	\$40	\$35	\$35	\$38	(\$9) N/S	456
Pharmacy	\$232	\$214	\$236	\$290	(\$82) *	456
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$368	(\$368) *	456
Other	\$192	\$208	\$28	\$40	(\$1) N/S	456
<b>Total</b>	<b>\$1,233</b>	<b>\$1,194</b>	<b>\$904</b>	<b>\$1,387</b>	<b>(\$560) *</b>	<b>456</b>
<b>Butler (All Ages, CMHC Experience)</b>						
Medical - Mental Health	\$153	\$108	\$159	\$99	\$15 N/S	395
Medical - Non-Mental Health	\$299	\$349	\$222	\$265	\$6 N/S	395
Inpatient	\$121	\$120	\$113	\$113	(\$2) N/S	395
Outpatient	\$66	\$55	\$62	\$51	(\$1) N/S	395
Emergency Department (ED)	\$36	\$37	\$25	\$28	(\$2) N/S	395
Pharmacy	\$257	\$232	\$257	\$280	(\$48) N/S	395
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$369	(\$369) *	395
Other	\$31	\$37	\$29	\$38	(\$3) N/S	395
<b>Total</b>	<b>\$1,142</b>	<b>\$1,211</b>	<b>\$916</b>	<b>\$1,315</b>	<b>(\$330) *</b>	<b>395</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Butler (All Ages, No CMHC Experience)</b>						
Medical - Mental Health	\$0	\$6	\$1	\$99	(\$91) *	218
Medical - Non-Mental Health	\$108	\$105	\$103	\$205	(\$107) *	218
Inpatient	\$87	\$79	\$82	\$133	(\$64) N/S	218
Outpatient	\$75	\$52	\$56	\$85	(\$50) *	218
Emergency Department (ED)	\$27	\$24	\$35	\$42	(\$11) N/S	218
Pharmacy	\$116	\$137	\$126	\$219	(\$84) N/S	218
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$369	(\$369) *	218
Other	\$142	\$157	\$3	\$16	(\$11) N/S	218
<b>Total</b>	<b>\$611</b>	<b>\$621</b>	<b>\$447</b>	<b>\$1,228</b>	<b>(\$799) *</b>	<b>218</b>
<b>Harbor (All Ages, All CMHC)</b>						
Medical - Mental Health	\$125	\$91	\$173	\$175	(\$38) *	2,522
Medical - Non-Mental Health	\$110	\$115	\$75	\$96	(\$16) *	2,522
Inpatient	\$61	\$42	\$38	\$40	(\$21) *	2,522
Outpatient	\$42	\$36	\$42	\$40	(\$4) N/S	2,522
Emergency Department (ED)	\$21	\$19	\$19	\$22	(\$4) *	2,522
Pharmacy	\$143	\$138	\$128	\$176	(\$54) *	2,522
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$284	(\$283) *	2,522
Other	\$15	\$11	\$3	\$5	(\$5) N/S	2,522
<b>Total</b>	<b>\$613</b>	<b>\$550</b>	<b>\$505</b>	<b>\$890</b>	<b>(\$453) *</b>	<b>2,522</b>
<b>Harbor (Under 18, All CMHC)</b>						
Medical - Mental Health	\$127	\$88	\$160	\$189	(\$69) *	2,015
Medical - Non-Mental Health	\$63	\$59	\$45	\$56	(\$14) *	2,015
Inpatient	\$26	\$19	\$17	\$19	(\$9) N/S	2,015
Outpatient	\$35	\$28	\$31	\$29	(\$5) N/S	2,015
Emergency Department (ED)	\$12	\$11	\$11	\$11	(\$1) N/S	2,015
Pharmacy	\$109	\$106	\$99	\$143	(\$47) *	2,015
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$283	(\$283) *	2,015
Other	\$0	\$0	\$0	\$0	(\$0) N/S	2,015
<b>Total</b>	<b>\$408</b>	<b>\$349</b>	<b>\$377</b>	<b>\$760</b>	<b>(\$443) *</b>	<b>2,015</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Harbor (18 and Over, All CMHC)</b>						
Medical - Mental Health	\$156	\$89	\$207	\$117	\$20 N/S	500
Medical - Non-Mental Health	\$302	\$325	\$209	\$287	(\$62) N/S	500
Inpatient	\$171	\$93	\$138	\$173	(\$108) *	500
Outpatient	\$70	\$62	\$89	\$99	(\$18) N/S	500
Emergency Department (ED)	\$50	\$49	\$59	\$69	(\$12) N/S	500
Pharmacy	\$240	\$195	\$244	\$319	(\$124) *	500
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$284	(\$284) *	500
Other	\$147	\$111	\$30	\$46	(\$53) N/S	500
<b>Total</b>	<b>\$1,500</b>	<b>\$1,325</b>	<b>\$1,087</b>	<b>\$1,544</b>	<b>(\$650) *</b>	<b>500</b>
<b>Harbor (All Ages, CMHC Experience)</b>						
Medical - Mental Health	\$198	\$136	\$215	\$182	(\$29) *	1,849
Medical - Non-Mental Health	\$88	\$95	\$78	\$97	(\$12) N/S	1,849
Inpatient	\$47	\$40	\$44	\$43	(\$7) N/S	1,849
Outpatient	\$38	\$31	\$44	\$40	(\$3) N/S	1,849
Emergency Department (ED)	\$20	\$19	\$19	\$21	(\$3) N/S	1,849
Pharmacy	\$158	\$146	\$153	\$199	(\$58) *	1,849
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$283	(\$283) *	1,849
Other	\$7	\$7	\$4	\$5	(\$1) N/S	1,849
<b>Total</b>	<b>\$619</b>	<b>\$547</b>	<b>\$599</b>	<b>\$917</b>	<b>(\$389) *</b>	<b>1,849</b>
<b>Harbor (All Ages, No CMHC Experience)</b>						
Medical - Mental Health	\$0	\$5	\$0	\$150	(\$145) *	649
Medical - Non-Mental Health	\$66	\$61	\$43	\$82	(\$41) *	649
Inpatient	\$43	\$18	\$15	\$35	(\$44) *	649
Outpatient	\$38	\$27	\$27	\$42	(\$25) *	649
Emergency Department (ED)	\$20	\$21	\$19	\$24	(\$3) N/S	649
Pharmacy	\$52	\$52	\$40	\$110	(\$70) *	649
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$285	(\$285) *	649
Other	\$3	\$4	\$2	\$4	(\$0) N/S	649
<b>Total</b>	<b>\$277</b>	<b>\$237</b>	<b>\$171</b>	<b>\$790</b>	<b>(\$654) *</b>	<b>649</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Shawnee (All Ages, All CMHC)</b>						
Medical - Mental Health	\$95	\$69	\$127	\$34	\$64 *	2,049
Medical - Non-Mental Health	\$246	\$263	\$216	\$248	(\$20) N/S	2,049
Inpatient	\$86	\$60	\$66	\$59	(\$19) N/S	2,049
Outpatient	\$60	\$54	\$68	\$69	(\$7) N/S	2,049
Emergency Department (ED)	\$31	\$28	\$28	\$29	(\$3) N/S	2,049
Pharmacy	\$244	\$228	\$262	\$293	(\$51) *	2,049
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$326	(\$326) *	2,049
Other	\$38	\$48	\$23	\$18	\$14 N/S	2,049
<b>Total</b>	<b>\$994</b>	<b>\$984</b>	<b>\$837</b>	<b>\$1,137</b>	<b>(\$322) *</b>	<b>2,049</b>
<b>Shawnee (Under 18, All CMHC)</b>						
Medical - Mental Health	\$89	\$61	\$138	\$43	\$66 *	631
Medical - Non-Mental Health	\$65	\$70	\$58	\$64	(\$1) N/S	631
Inpatient	\$15	\$9	\$15	\$14	(\$4) N/S	631
Outpatient	\$27	\$25	\$32	\$27	\$3 N/S	631
Emergency Department (ED)	\$10	\$10	\$12	\$13	(\$1) N/S	631
Pharmacy	\$109	\$98	\$125	\$153	(\$41) *	631
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$329	(\$329) *	631
Other	\$0	\$0	\$0	\$0	\$0 *	631
<b>Total</b>	<b>\$356</b>	<b>\$320</b>	<b>\$394</b>	<b>\$680</b>	<b>(\$323) *</b>	<b>631</b>
<b>Shawnee (18 and Over, All CMHC)</b>						
Medical - Mental Health	\$102	\$77	\$119	\$30	\$64 *	1,415
Medical - Non-Mental Health	\$326	\$330	\$290	\$333	(\$47) N/S	1,415
Inpatient	\$114	\$93	\$95	\$84	(\$10) N/S	1,415
Outpatient	\$69	\$61	\$83	\$86	(\$11) N/S	1,415
Emergency Department (ED)	\$38	\$38	\$37	\$36	(\$0) N/S	1,415
Pharmacy	\$301	\$273	\$328	\$358	(\$66) *	1,415
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$325	(\$325) *	1,415
Other	\$86	\$86	\$33	\$26	\$5 N/S	1,415
<b>Total</b>	<b>\$1,287</b>	<b>\$1,228</b>	<b>\$1,059</b>	<b>\$1,371</b>	<b>(\$393) *</b>	<b>1,415</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Shawnee (All Ages, CMHC Experience)</b>						
Medical - Mental Health	\$144	\$109	\$150	\$33	\$83 *	1,516
Medical - Non-Mental Health	\$229	\$230	\$217	\$247	(\$28) N/S	1,516
Inpatient	\$70	\$57	\$55	\$46	(\$4) N/S	1,516
Outpatient	\$59	\$51	\$66	\$67	(\$10) N/S	1,516
Emergency Department (ED)	\$33	\$31	\$29	\$28	(\$1) N/S	1,516
Pharmacy	\$244	\$218	\$260	\$275	(\$40) *	1,516
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$326	(\$326) *	1,516
Other	\$28	\$27	\$26	\$19	\$6 N/S	1,516
<b>Total</b>	<b>\$1,019</b>	<b>\$977</b>	<b>\$877</b>	<b>\$1,125</b>	<b>(\$290) *</b>	<b>1,516</b>
<b>Shawnee (All Ages, No CMHC Experience)</b>						
Medical - Mental Health	\$1	\$3	\$1	\$43	(\$40) *	403
Medical - Non-Mental Health	\$163	\$208	\$178	\$223	(\$9) N/S	403
Inpatient	\$88	\$86	\$70	\$100	(\$32) N/S	403
Outpatient	\$69	\$47	\$65	\$77	(\$35) *	403
Emergency Department (ED)	\$31	\$26	\$29	\$33	(\$9) N/S	403
Pharmacy	\$131	\$131	\$140	\$230	(\$97) *	403
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$327	(\$327) *	403
Other	\$18	\$15	\$10	\$13	(\$8) N/S	403
<b>Total</b>	<b>\$689</b>	<b>\$626</b>	<b>\$488</b>	<b>\$1,069</b>	<b>(\$669) *</b>	<b>403</b>
<b>Unison (All Ages, All CMHC)</b>						
Medical - Mental Health	\$130	\$95	\$197	\$174	(\$12) N/S	1,652
Medical - Non-Mental Health	\$221	\$229	\$206	\$257	(\$47) N/S	1,652
Inpatient	\$144	\$103	\$185	\$191	(\$45) N/S	1,652
Outpatient	\$63	\$54	\$66	\$74	(\$18) *	1,652
Emergency Department (ED)	\$43	\$37	\$51	\$53	(\$9) N/S	1,652
Pharmacy	\$242	\$217	\$214	\$325	(\$140) *	1,652
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$296	(\$296) *	1,652
Other	\$280	\$307	\$69	\$77	\$16 N/S	1,652
<b>Total</b>	<b>\$1,319</b>	<b>\$1,273</b>	<b>\$1,110</b>	<b>\$1,611</b>	<b>(\$561) *</b>	<b>1,652</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Unison (Under 18, All CMHC)</b>						
Medical - Mental Health	\$173	\$126	\$140	\$257	(\$164) *	235
Medical - Non-Mental Health	\$47	\$45	\$35	\$43	(\$10) N/S	235
Inpatient	\$20	\$5	\$11	\$7	(\$10) N/S	235
Outpatient	\$18	\$19	\$17	\$12	\$6 N/S	235
Emergency Department (ED)	\$10	\$8	\$11	\$13	(\$3) N/S	235
Pharmacy	\$97	\$88	\$85	\$140	(\$64) *	235
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$290	(\$290) *	235
Other	\$0	\$0	\$0	\$0	\$0 *	235
<b>Total</b>	<b>\$418</b>	<b>\$314</b>	<b>\$318</b>	<b>\$810</b>	<b>(\$595) *</b>	<b>235</b>
<b>Unison (18 and Over, All CMHC)</b>						
Medical - Mental Health	\$140	\$106	\$194	\$150	\$9 N/S	1,395
Medical - Non-Mental Health	\$236	\$231	\$222	\$280	(\$68) *	1,395
Inpatient	\$186	\$131	\$210	\$219	(\$62) *	1,395
Outpatient	\$67	\$57	\$74	\$83	(\$19) *	1,395
Emergency Department (ED)	\$49	\$44	\$59	\$61	(\$7) N/S	1,395
Pharmacy	\$271	\$230	\$234	\$356	(\$169) *	1,395
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$297	(\$297) *	1,395
Other	\$305	\$360	\$82	\$90	\$43 N/S	1,395
<b>Total</b>	<b>\$1,446</b>	<b>\$1,384</b>	<b>\$1,216</b>	<b>\$1,713</b>	<b>(\$582) *</b>	<b>1,395</b>
<b>Unison (All Ages, CMHC Experience)</b>						
Medical - Mental Health	\$185	\$138	\$211	\$163	\$1 N/S	1,293
Medical - Non-Mental Health	\$211	\$235	\$219	\$258	(\$15) N/S	1,293
Inpatient	\$171	\$105	\$164	\$174	(\$76) *	1,293
Outpatient	\$63	\$47	\$63	\$67	(\$20) *	1,293
Emergency Department (ED)	\$41	\$37	\$52	\$52	(\$4) N/S	1,293
Pharmacy	\$245	\$221	\$218	\$317	(\$123) *	1,293
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$296	(\$296) *	1,293
Other	\$77	\$80	\$48	\$57	(\$6) N/S	1,293
<b>Total</b>	<b>\$1,262</b>	<b>\$1,149</b>	<b>\$1,131</b>	<b>\$1,565</b>	<b>(\$547) *</b>	<b>1,293</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Unison (All Ages, No CMHC Experience)</b>						
Medical - Mental Health	\$1	\$4	\$0	\$161	(\$153) *	282
Medical - Non-Mental Health	\$97	\$125	\$106	\$194	(\$56) N/S	282
Inpatient	\$72	\$87	\$161	\$231	(\$34) N/S	282
Outpatient	\$54	\$36	\$69	\$109	(\$60) *	282
Emergency Department (ED)	\$24	\$23	\$50	\$64	(\$13) N/S	282
Pharmacy	\$68	\$62	\$66	\$245	(\$180) *	282
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$295	(\$295) *	282
Other	\$126	\$151	\$32	\$40	\$20 N/S	282
<b>Total</b>	<b>\$592</b>	<b>\$639</b>	<b>\$548</b>	<b>\$1,466</b>	<b>(\$846) *</b>	<b>282</b>
<b>Zepf (All Ages, All CMHC)</b>						
Medical - Mental Health	\$197	\$132	\$246	\$155	\$24 *	2,997
Medical - Non-Mental Health	\$189	\$198	\$150	\$182	(\$25) N/S	2,997
Inpatient	\$129	\$92	\$103	\$122	(\$55) *	2,997
Outpatient	\$53	\$45	\$57	\$61	(\$12) *	2,997
Emergency Department (ED)	\$33	\$32	\$36	\$39	(\$4) N/S	2,997
Pharmacy	\$215	\$191	\$201	\$257	(\$83) *	2,997
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$397	(\$397) *	2,997
Other	\$74	\$84	\$32	\$30	\$10 N/S	2,997
<b>Total</b>	<b>\$1,098</b>	<b>\$1,016</b>	<b>\$923</b>	<b>\$1,367</b>	<b>(\$534) *</b>	<b>2,997</b>
<b>Zepf (Under 18, All CMHC)</b>						
Medical - Mental Health	\$266	\$167	\$355	\$279	(\$23) N/S	1,025
Medical - Non-Mental Health	\$64	\$70	\$48	\$64	(\$10) N/S	1,025
Inpatient	\$35	\$20	\$26	\$24	(\$13) N/S	1,025
Outpatient	\$28	\$25	\$25	\$27	(\$5) N/S	1,025
Emergency Department (ED)	\$12	\$12	\$13	\$16	(\$2) N/S	1,025
Pharmacy	\$158	\$143	\$161	\$198	(\$52) *	1,025
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$397	(\$397) *	1,025
Other	\$0	\$0	\$0	\$0	\$0 *	1,025
<b>Total</b>	<b>\$598</b>	<b>\$482</b>	<b>\$638</b>	<b>\$1,030</b>	<b>(\$505) *</b>	<b>1,025</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Zepf (18 and Over, All CMHC)</b>						
Medical - Mental Health	\$154	\$108	\$189	\$104	\$38 *	1,950
Medical - Non-Mental Health	\$269	\$288	\$215	\$256	(\$27) N/S	1,950
Inpatient	\$170	\$119	\$147	\$183	(\$85) *	1,950
Outpatient	\$66	\$59	\$73	\$80	(\$14) N/S	1,950
Emergency Department (ED)	\$44	\$41	\$49	\$53	(\$7) N/S	1,950
Pharmacy	\$229	\$213	\$219	\$286	(\$88) *	1,950
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$397	(\$397) *	1,950
Other	\$264	\$284	\$76	\$64	\$28 N/S	1,950
<b>Total</b>	<b>\$1,437</b>	<b>\$1,387</b>	<b>\$1,107</b>	<b>\$1,585</b>	<b>(\$546) *</b>	<b>1,950</b>
<b>Zepf (All Ages, CMHC Experience)</b>						
Medical - Mental Health	\$252	\$171	\$284	\$152	\$51 *	2,287
Medical - Non-Mental Health	\$191	\$194	\$163	\$195	(\$28) N/S	2,287
Inpatient	\$113	\$95	\$105	\$117	(\$30) N/S	2,287
Outpatient	\$50	\$38	\$52	\$54	(\$13) *	2,287
Emergency Department (ED)	\$32	\$33	\$37	\$38	(\$1) N/S	2,287
Pharmacy	\$223	\$202	\$218	\$273	(\$76) *	2,287
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$397	(\$397) *	2,287
Other	\$29	\$39	\$30	\$29	\$11 N/S	2,287
<b>Total</b>	<b>\$1,144</b>	<b>\$1,090</b>	<b>\$1,013</b>	<b>\$1,402</b>	<b>(\$443) *</b>	<b>2,287</b>
<b>Zepf (All Ages, No CMHC Experience)</b>						
Medical - Mental Health	\$0	\$6	\$0	\$150	(\$142) *	589
Medical - Non-Mental Health	\$138	\$137	\$87	\$130	(\$43) *	589
Inpatient	\$89	\$78	\$49	\$102	(\$57) N/S	589
Outpatient	\$66	\$58	\$41	\$71	(\$31) N/S	589
Emergency Department (ED)	\$28	\$22	\$29	\$42	(\$19) *	589
Pharmacy	\$73	\$82	\$58	\$138	(\$65) *	589
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$397	(\$397) *	589
Other	\$98	\$132	\$35	\$30	\$41 N/S	589
<b>Total</b>	<b>\$634</b>	<b>\$655</b>	<b>\$344</b>	<b>\$1,171</b>	<b>(\$778) *</b>	<b>589</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Pharmacist on Site (All Ages, All CMHC)</b>						
Medical - Mental Health	\$133	\$84	\$157	\$159	(\$53) *	3,113
Medical - Non-Mental Health	\$143	\$143	\$98	\$127	(\$29) *	3,113
Inpatient	\$82	\$60	\$51	\$55	(\$26) *	3,113
Outpatient	\$53	\$44	\$48	\$52	(\$13) *	3,113
Emergency Department (ED)	\$27	\$26	\$21	\$24	(\$4) N/S	3,113
Pharmacy	\$156	\$142	\$144	\$191	(\$62) *	3,113
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$300	(\$300) *	3,113
Other	\$54	\$54	\$7	\$12	(\$6) N/S	3,113
<b>Total</b>	<b>\$772</b>	<b>\$682</b>	<b>\$567</b>	<b>\$987</b>	<b>(\$514) *</b>	<b>3,113</b>
<b>No Pharmacist on Site (All Ages, All CMHC)</b>						
Medical - Mental Health	\$126	\$83	\$158	\$108	\$5 N/S	5,967
Medical - Non-Mental Health	\$246	\$253	\$200	\$237	(\$34) *	5,967
Inpatient	\$126	\$89	\$98	\$114	(\$51) *	5,967
Outpatient	\$62	\$51	\$60	\$71	(\$20) *	5,967
Emergency Department (ED)	\$36	\$33	\$37	\$40	(\$6) *	5,967
Pharmacy	\$204	\$182	\$201	\$265	(\$89) *	5,967
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$349	(\$349) *	5,967
Other	\$181	\$193	\$43	\$39	\$11 N/S	5,967
<b>Total</b>	<b>\$1,170</b>	<b>\$1,101</b>	<b>\$864</b>	<b>\$1,313</b>	<b>(\$530) *</b>	<b>5,967</b>
<b>Lucas County (All Ages, All CMHC)</b>						
Medical - Mental Health	\$73	\$33	\$99	\$132	(\$73) *	4,933
Medical - Non-Mental Health	\$169	\$171	\$136	\$170	(\$33) *	4,933
Inpatient	\$91	\$63	\$65	\$83	(\$42) *	4,933
Outpatient	\$54	\$43	\$49	\$59	(\$21) *	4,933
Emergency Department (ED)	\$33	\$30	\$32	\$36	(\$7) *	4,933
Pharmacy	\$118	\$100	\$117	\$191	(\$92) *	4,933
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$328	(\$328) *	4,933
Other	\$153	\$168	\$31	\$27	\$15 N/S	4,933
<b>Total</b>	<b>\$833</b>	<b>\$758</b>	<b>\$576</b>	<b>\$1,106</b>	<b>(\$609) *</b>	<b>4,933</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Lucas County (Under 18, All CMHC)</b>						
Medical - Mental Health	\$73	\$39	\$102	\$167	(\$100) *	2,464
Medical - Non-Mental Health	\$47	\$47	\$39	\$52	(\$14) *	2,464
Inpatient	\$14	\$10	\$13	\$16	(\$8) *	2,464
Outpatient	\$24	\$17	\$24	\$26	(\$9) *	2,464
Emergency Department (ED)	\$11	\$11	\$11	\$12	(\$1) N/S	2,464
Pharmacy	\$68	\$62	\$81	\$124	(\$49) *	2,464
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$314	(\$314) *	2,464
Other	\$0	\$0	\$0	\$0	\$0 N/S	2,464
<b>Total</b>	<b>\$268</b>	<b>\$206</b>	<b>\$290</b>	<b>\$756</b>	<b>(\$529) *</b>	<b>2,464</b>
<b>Lucas County (18 and Over, All CMHC)</b>						
Medical - Mental Health	\$77	\$31	\$95	\$104	(\$54) *	2,345
Medical - Non-Mental Health	\$220	\$215	\$212	\$273	(\$73) *	2,345
Inpatient	\$169	\$115	\$119	\$166	(\$97) *	2,345
Outpatient	\$69	\$64	\$70	\$89	(\$25) *	2,345
Emergency Department (ED)	\$47	\$43	\$51	\$60	(\$13) *	2,345
Pharmacy	\$159	\$129	\$153	\$260	(\$140) *	2,345
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$343	(\$343) *	2,345
Other	\$318	\$353	\$63	\$62	\$27 N/S	2,345
<b>Total</b>	<b>\$1,347</b>	<b>\$1,214</b>	<b>\$859</b>	<b>\$1,503</b>	<b>(\$797) *</b>	<b>2,345</b>
<b>Lucas County (All Ages, CMHC Experience)</b>						
Medical - Mental Health	\$124	\$56	\$137	\$127	(\$58) *	3,134
Medical - Non-Mental Health	\$135	\$131	\$125	\$158	(\$38) *	3,134
Inpatient	\$91	\$63	\$64	\$76	(\$40) *	3,134
Outpatient	\$50	\$37	\$42	\$46	(\$17) *	3,134
Emergency Department (ED)	\$33	\$28	\$32	\$33	(\$5) N/S	3,134
Pharmacy	\$117	\$93	\$121	\$186	(\$89) *	3,134
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$326	(\$326) *	3,134
Other	\$26	\$29	\$21	\$22	\$2 N/S	3,134
<b>Total</b>	<b>\$741</b>	<b>\$606</b>	<b>\$633</b>	<b>\$1,092</b>	<b>(\$594) *</b>	<b>3,134</b>

## Summary of Cost Savings for All Stratifications

By Category of Service

Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>Lucas County (All Ages, No CMHC Experience)</b>						
Medical - Mental Health	\$0	\$4	\$0	\$151	(\$146) *	1,518
Medical - Non-Mental Health	\$75	\$80	\$71	\$123	(\$43) *	1,518
Inpatient	\$97	\$55	\$56	\$122	(\$97) *	1,518
Outpatient	\$52	\$49	\$43	\$71	(\$29) *	1,518
Emergency Department (ED)	\$31	\$26	\$29	\$39	(\$15) *	1,518
Pharmacy	\$59	\$52	\$52	\$152	(\$102) *	1,518
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$330	(\$330) *	1,518
Other	\$27	\$27	\$5	\$14	(\$5) N/S	1,518
<b>Total</b>	<b>\$423</b>	<b>\$378</b>	<b>\$303</b>	<b>\$1,085</b>	<b>(\$796) *</b>	<b>1,518</b>
<b>MCP: Buckeye (All Ages, All CMHC)</b>						
Medical - Mental Health	\$82	\$45	\$108	\$146	(\$75) *	942
Medical - Non-Mental Health	\$60	\$69	\$52	\$74	(\$11) N/S	942
Inpatient	\$39	\$61	\$33	\$71	(\$14) N/S	942
Outpatient	\$27	\$28	\$30	\$33	(\$2) N/S	942
Emergency Department (ED)	\$18	\$21	\$19	\$20	\$3 N/S	942
Pharmacy	\$73	\$76	\$79	\$137	(\$54) *	942
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$327	(\$327) *	942
Other	\$0	\$0	\$0	\$0	(\$0) N/S	942
<b>Total</b>	<b>\$329</b>	<b>\$324</b>	<b>\$337</b>	<b>\$846</b>	<b>(\$505) *</b>	<b>942</b>
<b>MCP: CareSource (All Ages, All CMHC)</b>						
Medical - Mental Health	\$95	\$81	\$119	\$77	\$27 *	1,537
Medical - Non-Mental Health	\$142	\$154	\$131	\$157	(\$14) N/S	1,537
Inpatient	\$144	\$131	\$110	\$128	(\$30) N/S	1,537
Outpatient	\$92	\$90	\$85	\$104	(\$20) N/S	1,537
Emergency Department (ED)	\$37	\$35	\$35	\$37	(\$3) N/S	1,537
Pharmacy	\$268	\$271	\$280	\$346	(\$62) *	1,537
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$340	(\$340) *	1,537
Other	\$1	\$0	\$1	\$0	(\$0) N/S	1,537
<b>Total</b>	<b>\$870</b>	<b>\$830</b>	<b>\$791</b>	<b>\$1,223</b>	<b>(\$469) *</b>	<b>1,537</b>

Summary of Cost Savings for All Stratifications						
By Category of Service						
Cost Category	Comparison Group		Health Home Members		Cost Savings	Sample Treatment Group Size
	Baseline	Remeasurement	Baseline	Remeasurement		
<b>MCP: Molina (All Ages, All CMHC)</b>						
Medical - Mental Health	\$120	\$109	\$133	\$58	\$64 *	580
Medical - Non-Mental Health	\$133	\$141	\$132	\$137	\$4 N/S	580
Inpatient	\$81	\$82	\$77	\$77	\$1 N/S	580
Outpatient	\$79	\$62	\$74	\$74	(\$15) N/S	580
Emergency Department (ED)	\$37	\$38	\$27	\$31	(\$3) N/S	580
Pharmacy	\$273	\$281	\$307	\$356	(\$39) N/S	580
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$335	(\$335) *	580
Other	\$0	\$1	\$1	\$2	\$1 N/S	580
<b>Total</b>	<b>\$825</b>	<b>\$798</b>	<b>\$816</b>	<b>\$1,123</b>	<b>(\$327) *</b>	<b>580</b>
<b>MCP: Paramount (All Ages, All CMHC)</b>						
Medical - Mental Health	\$64	\$32	\$94	\$147	(\$88) *	1,930
Medical - Non-Mental Health	\$74	\$66	\$54	\$71	(\$24) *	1,930
Inpatient	\$35	\$25	\$26	\$33	(\$16) *	1,930
Outpatient	\$52	\$45	\$43	\$49	(\$11) *	1,930
Emergency Department (ED)	\$31	\$36	\$27	\$36	(\$3) N/S	1,930
Pharmacy	\$88	\$84	\$100	\$157	(\$62) *	1,930
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$319	(\$319) *	1,930
Other	\$0	\$0	\$0	\$0	\$0 *	1,930
<b>Total</b>	<b>\$375</b>	<b>\$314</b>	<b>\$367</b>	<b>\$854</b>	<b>(\$552) *</b>	<b>1,930</b>
<b>MCP: UnitedHealthcare (All Ages, All CMHC)</b>						
Medical - Mental Health	\$70	\$42	\$98	\$94	(\$23) N/S	347
Medical - Non-Mental Health	\$145	\$173	\$133	\$192	(\$32) N/S	347
Inpatient	\$217	\$207	\$215	\$252	(\$46) N/S	347
Outpatient	\$89	\$103	\$83	\$114	(\$17) N/S	347
Emergency Department (ED)	\$73	\$83	\$54	\$84	(\$20) N/S	347
Pharmacy	\$183	\$207	\$214	\$340	(\$102) *	347
Average Health Home Monthly Case Rate	\$0	\$0	\$0	\$337	(\$337) *	347
Other	\$2	\$3	\$2	\$0	\$3 N/S	347
<b>Total</b>	<b>\$882</b>	<b>\$891</b>	<b>\$845</b>	<b>\$1,467</b>	<b>(\$612) *</b>	<b>347</b>

Note: Total Cost Savings may not equal the sum of all Cost Categories because each Cost Category and Total Cost Savings are modeled independently.

## APPENDIX B. COVARIATE BALANCE ASSESSMENT

This section includes an assessment of covariate balance for each model. A total of 42 models with various stratifications were evaluated. The covariates were evaluated to ensure the populations were appropriately matched. For each covariate, the mean of the control and treatment groups for the full group population and matched population is provided. An asterisk denotes that the particular covariate was balanced. In other words, a  $p$ -value of greater than 0.05 indicates there were no significant differences between the treatment and control group after matching.

A bias reduction of greater than 0 and less than 200 percent indicates an improved covariate balance, but does not necessarily identify whether a covariate was statistically balanced. A bias reduction of 100 percent indicates a perfectly balanced covariate.

**All Health Homes (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.695	30.407	32.894	29.714	222%		N/A
Female	0.576	0.530	0.538	0.532	87%		*
White	0.727	0.644	0.691	0.658	60%		
Black	0.239	0.338	0.288	0.324	64%		
County: Adams	0.042	0.034	0.037	0.037	93%		*
County: Butler	0.300	0.062	0.120	0.073	76%		
County: Lawrence	0.074	0.064	0.087	0.070	-63%		
County: Lucas	0.471	0.730	0.628	0.701	72%		
Medicaid Member Months	9.475	11.085	11.215	10.943	124%		
MCP Member Months	7.156	7.662	7.247	7.607	29%		
Dual Eligibility Member Months	0.282	0.344	0.453	0.346	256%		
Waiver Member Months	0.363	0.469	0.622	0.467	228%		
ABD Member Months	1.005	3.816	3.648	3.287	111%		
CFC Member Months	7.018	5.618	5.419	5.957	138%		

**All Health Homes (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.069	21.324	13.467	15.500	92%		
# ED Mental Health Visits	0.012	0.079	0.078	0.070	109%		*
# IP Mental Health Visits	0.003	0.033	0.026	0.026	100%		*
13 or More Mental Health Rx	0.031	0.253	0.221	0.204	106%		
ADHD	0.032	0.180	0.185	0.162	112%		
Acute bronchitis	0.056	0.079	0.087	0.078	136%		
Alcohol-related disorders	0.006	0.022	0.024	0.019	124%		
Anxiety Disorders	0.028	0.083	0.116	0.083	146%		
Asthma	0.060	0.125	0.131	0.116	120%		
Autism	0.003	0.007	0.010	0.007	138%		*
Bipolar Disorder	0.014	0.129	0.119	0.107	109%		
Blindness and vision defects	0.150	0.265	0.293	0.253	131%		
Cancer	0.014	0.017	0.023	0.017	233%		
Cardiac dysrhythmias	0.027	0.055	0.059	0.048	135%		

**All Health Homes (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.059	0.114	0.130	0.107	136%		
Conduct Disorder	0.011	0.108	0.110	0.095	112%		
Congestive heart failure; nonhypertensive	0.014	0.017	0.021	0.016	245%		
Coronary atherosclerosis and other heart disease	0.023	0.034	0.040	0.033	155%		
Cystic fibrosis	0.000	0.000	0.000	0.000	48%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.010	0.010	0.012	0.009	5470%		*
Depression	0.047	0.304	0.350	0.277	122%		
Developmental disorders	0.037	0.083	0.085	0.078	113%		*
Diabetes	0.061	0.119	0.138	0.111	139%		
Epilepsy; convulsions	0.019	0.040	0.047	0.037	142%		
Esophageal disorders	0.027	0.059	0.065	0.054	127%		
Essential hypertension	0.083	0.166	0.187	0.152	136%		
HIV infection	0.002	0.003	0.003	0.003	142%		*
Intracranial injury	0.006	0.013	0.013	0.012	117%		*

**All Health Homes (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.005	0.025	0.025	0.022	110%		*
Neoplasms of unspecified nature or uncertain behavior	0.035	0.078	0.092	0.074	134%		
Obsessive-Compulsive Disorders	0.001	0.006	0.008	0.006	124%		*
Osteoarthritis	0.031	0.066	0.072	0.060	131%		
Other Developmental Disorder	0.003	0.031	0.030	0.027	107%		*
Other nervous system disorders	0.062	0.126	0.148	0.117	141%		
PTSD	0.005	0.031	0.034	0.028	116%		
Pregnancy	0.040	0.023	0.030	0.025	70%		*
Psychotic Disorder	0.015	0.212	0.176	0.166	104%		*
Spondylosis; intervertebral disc disorders; other back	0.100	0.208	0.244	0.196	138%		
Substance-related disorders	0.019	0.050	0.060	0.047	135%		
Thyroid disorders	0.021	0.045	0.051	0.042	132%		

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**All Health Homes (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	9.427	11.367	11.721	11.218	128%		
Female	0.498	0.390	0.376	0.400	122%		
White	0.710	0.599	0.646	0.616	74%		
Black	0.256	0.381	0.331	0.364	75%		
County: Adams	0.042	0.015	0.021	0.017	82%		*
County: Butler	0.341	0.038	0.083	0.044	80%		
County: Lawrence	0.071	0.049	0.074	0.054	12%		
County: Lucas	0.450	0.806	0.723	0.786	82%		
Medicaid Member Months	10.659	11.394	11.168	11.320	76%		
MCP Member Months	9.662	9.049	8.764	9.275	180%		
Dual Eligibility Member Months	0.003	0.008	0.011	0.008	142%		*
Waiver Member Months	0.029	0.005	0.011	0.006	68%		*
ABD Member Months	0.332	1.582	1.429	1.319	107%		*
CFC Member Months	10.318	9.805	9.729	9.994	150%		

**All Health Homes (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.105	21.856	13.857	15.365	94%		
# ED Mental Health Visits	0.004	0.029	0.032	0.025	120%		*
# IP Mental Health Visits	0.002	0.030	0.024	0.023	103%		*
13 or More Mental Health Rx	0.008	0.086	0.063	0.066	97%		*
ADHD	0.060	0.404	0.410	0.351	114%		
Acute bronchitis	0.056	0.045	0.056	0.047	24%		*
Alcohol-related disorders	0.001	0.005	0.006	0.004	126%		*
Anxiety Disorders	0.008	0.044	0.058	0.040	136%		
Asthma	0.075	0.135	0.144	0.126	127%		
Autism	0.003	0.015	0.017	0.013	128%		*
Bipolar Disorder	0.003	0.028	0.025	0.023	108%		*
Blindness and vision defects	0.156	0.286	0.292	0.275	112%		*
Cancer	0.001	0.001	0.004	0.001	-296%	YES	
Cardiac dysrhythmias	0.005	0.017	0.019	0.013	141%		

**All Health Homes (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.024	0.024	0.029	0.024	-2598%		*
Conduct Disorder	0.021	0.243	0.232	0.202	110%		
Congestive heart failure; nonhypertensive	0.000	0.000	0.001	0.000	-133%	YES	*
Coronary atherosclerosis and other heart disease	0.000	0.000	0.000	0.000	100%	YES	*
Cystic fibrosis	0.001	0.000	0.001	0.000	-111%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.004	0.004	0.003	123%		*
Depression	0.016	0.143	0.138	0.121	111%		
Developmental disorders	0.050	0.135	0.143	0.118	125%		
Diabetes	0.005	0.011	0.014	0.011	136%		*
Epilepsy; convulsions	0.012	0.026	0.034	0.024	161%		
Esophageal disorders	0.009	0.011	0.012	0.010	272%		*
Essential hypertension	0.003	0.008	0.008	0.008	112%		*
HIV infection	0.000	0.000	0.000	0.000	-45%	YES	*
Intracranial injury	0.005	0.008	0.008	0.008	118%		*

**All Health Homes (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.011	0.013	0.010	129%		*
Neoplasms of unspecified nature or uncertain behavior	0.012	0.047	0.047	0.040	116%		*
Obsessive-Compulsive Disorders	0.001	0.009	0.006	0.007	92%		*
Osteoarthritis	0.000	0.000	0.001	0.000	-15%	YES	*
Other Developmental Disorder	0.005	0.071	0.064	0.059	106%		*
Other nervous system disorders	0.025	0.049	0.060	0.045	155%		
PTSD	0.004	0.033	0.032	0.027	114%		*
Pregnancy	0.003	0.005	0.008	0.005	186%		*
Psychotic Disorder	0.002	0.014	0.013	0.012	104%		*
Spondylosis; intervertebral disc disorders; other back	0.018	0.033	0.042	0.031	164%		
Substance-related disorders	0.004	0.017	0.021	0.015	132%		*
Thyroid disorders	0.003	0.008	0.009	0.008	122%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**All Health Homes (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	42.341	43.890	44.281	43.560	151%		
Female	0.639	0.629	0.647	0.630	-64%		*
White	0.742	0.676	0.739	0.697	35%		
Black	0.225	0.308	0.244	0.286	50%		
County: Adams	0.042	0.048	0.057	0.051	192%		*
County: Butler	0.268	0.079	0.154	0.097	66%		
County: Lawrence	0.076	0.075	0.099	0.082	-1080%		
County: Lucas	0.488	0.676	0.549	0.639	53%		
Medicaid Member Months	8.527	10.866	11.146	10.626	132%		N/A
MCP Member Months	5.146	6.680	6.351	6.393	97%		*
Dual Eligibility Member Months	0.506	0.581	0.682	0.593	210%		*
Waiver Member Months	0.631	0.798	0.897	0.812	147%		*
ABD Member Months	1.545	5.398	4.922	4.736	104%		*
CFC Member Months	4.371	2.654	3.013	2.993	99%		*

**All Health Homes (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.040	20.948	13.131	14.457	94%		
# ED Mental Health Visits	0.018	0.115	0.113	0.099	111%		*
# IP Mental Health Visits	0.003	0.035	0.033	0.028	113%		*
13 or More Mental Health Rx	0.048	0.372	0.337	0.303	108%		
ADHD	0.010	0.022	0.027	0.021	141%		*
Acute bronchitis	0.055	0.104	0.118	0.098	134%		
Alcohol-related disorders	0.010	0.034	0.033	0.030	109%		*
Anxiety Disorders	0.044	0.110	0.148	0.115	139%		
Asthma	0.048	0.118	0.123	0.105	123%		
Autism	0.002	0.002	0.002	0.002	-54%		*
Bipolar Disorder	0.023	0.200	0.193	0.170	110%		
Blindness and vision defects	0.146	0.251	0.263	0.242	118%		
Cancer	0.024	0.029	0.033	0.031	136%		*
Cardiac dysrhythmias	0.044	0.082	0.087	0.076	125%		*

**All Health Homes (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.088	0.178	0.197	0.170	126%		
Conduct Disorder	0.003	0.012	0.014	0.010	135%		*
Congestive heart failure; nonhypertensive	0.025	0.029	0.034	0.029	215%		*
Coronary atherosclerosis and other heart disease	0.042	0.058	0.065	0.057	144%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	2%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.017	0.014	0.017	0.013	-37%		*
Depression	0.072	0.418	0.485	0.399	120%		
Developmental disorders	0.027	0.046	0.051	0.044	131%		*
Diabetes	0.106	0.196	0.203	0.186	117%		
Epilepsy; convulsions	0.025	0.050	0.055	0.049	122%		*
Esophageal disorders	0.041	0.093	0.100	0.087	122%		
Essential hypertension	0.147	0.278	0.290	0.261	120%		
HIV infection	0.003	0.005	0.005	0.005	119%		*
Intracranial injury	0.007	0.016	0.014	0.015	84%		*

**All Health Homes (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.007	0.035	0.035	0.029	117%		*
Neoplasms of unspecified nature or uncertain behavior	0.053	0.101	0.111	0.097	125%		
Obsessive-Compulsive Disorders	0.001	0.004	0.004	0.005	86%		*
Osteoarthritis	0.055	0.113	0.115	0.102	119%		
Other Developmental Disorder	0.001	0.004	0.004	0.003	120%		*
Other nervous system disorders	0.091	0.180	0.199	0.168	130%		
PTSD	0.005	0.029	0.036	0.026	132%		
Pregnancy	0.070	0.037	0.044	0.041	91%		*
Psychotic Disorder	0.025	0.352	0.281	0.276	101%		*
Spondylosis; intervertebral disc disorders; other back	0.166	0.333	0.363	0.321	123%		
Substance-related disorders	0.032	0.073	0.081	0.069	124%		
Thyroid disorders	0.035	0.071	0.074	0.067	117%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**All Health Homes (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	29.433	32.125	30.466	29.705	128%		
Female	0.566	0.529	0.533	0.530	90%		*
White	0.773	0.649	0.676	0.689	110%		*
Black	0.201	0.335	0.305	0.291	110%		*
County: Adams	0.028	0.037	0.039	0.040	92%		*
County: Butler	0.394	0.051	0.098	0.076	91%		
County: Lawrence	0.063	0.063	0.075	0.076	303%		*
County: Lucas	0.392	0.735	0.657	0.669	97%		*
Medicaid Member Months	11.345	11.608	11.488	11.465	108%		*
MCP Member Months	7.691	7.766	7.488	7.552	16%		*
Dual Eligibility Member Months	0.418	0.401	0.406	0.379	-62%		*
Waiver Member Months	0.540	0.556	0.601	0.583	209%		*
ABD Member Months	2.324	4.437	3.285	2.992	114%		
CFC Member Months	6.993	5.224	6.038	6.350	117%		

**All Health Homes (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	15.681	27.246	18.818	18.767	100%		*
# ED Mental Health Visits	0.095	0.097	0.091	0.087	283%		*
# IP Mental Health Visits	0.029	0.041	0.036	0.036	103%		*
13 or More Mental Health Rx	0.167	0.308	0.210	0.192	114%		
ADHD	0.164	0.216	0.209	0.207	104%		*
Acute bronchitis	0.080	0.085	0.082	0.078	173%		*
Alcohol-related disorders	0.027	0.026	0.023	0.023	158%		*
Anxiety Disorders	0.141	0.095	0.114	0.113	98%		*
Asthma	0.090	0.132	0.123	0.113	125%		*
Autism	0.009	0.008	0.010	0.010	-327%		*
Bipolar Disorder	0.141	0.161	0.143	0.143	104%		*
Blindness and vision defects	0.249	0.283	0.275	0.273	106%		*
Cancer	0.019	0.019	0.021	0.020	211%		*
Cardiac dysrhythmias	0.046	0.061	0.050	0.050	104%		*

**All Health Homes (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.099	0.129	0.113	0.111	107%		*
Conduct Disorder	0.113	0.135	0.140	0.142	90%		*
Congestive heart failure; nonhypertensive	0.017	0.019	0.016	0.017	47%		*
Coronary atherosclerosis and other heart disease	0.026	0.040	0.035	0.034	105%		*
Cystic fibrosis	0.001	0.000	0.000	0.000	13%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.016	0.011	0.010	0.011	120%		*
Depression	0.385	0.374	0.381	0.378	68%		*
Developmental disorders	0.089	0.094	0.092	0.092	112%		*
Diabetes	0.101	0.138	0.121	0.113	121%		*
Epilepsy; convulsions	0.041	0.045	0.045	0.042	167%		*
Esophageal disorders	0.053	0.067	0.062	0.056	140%		*
Essential hypertension	0.135	0.190	0.169	0.156	124%		*
HIV infection	0.002	0.003	0.003	0.004	77%		*
Intracranial injury	0.013	0.014	0.013	0.012	285%		*

**All Health Homes (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.046	0.031	0.030	0.031	107%		*
Neoplasms of unspecified nature or uncertain behavior	0.074	0.089	0.090	0.085	132%		*
Obsessive-Compulsive Disorders	0.005	0.008	0.007	0.007	115%		*
Osteoarthritis	0.052	0.076	0.068	0.062	123%		*
Other Developmental Disorder	0.031	0.040	0.041	0.042	96%		*
Other nervous system disorders	0.133	0.140	0.133	0.129	171%		*
PTSD	0.058	0.039	0.043	0.040	85%		*
Pregnancy	0.048	0.020	0.024	0.026	109%		*
Psychotic Disorder	0.135	0.267	0.191	0.173	113%		
Spondylosis; intervertebral disc disorders; other back	0.205	0.230	0.220	0.208	149%		*
Substance-related disorders	0.112	0.058	0.064	0.066	104%		*
Thyroid disorders	0.042	0.052	0.045	0.046	92%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**All Health Homes (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.568	24.219	28.786	24.219	-45%		
Female	0.577	0.534	0.534	0.534	99%		*
White	0.724	0.626	0.658	0.626	68%		
Black	0.241	0.352	0.312	0.352	65%		
County: Adams	0.043	0.026	0.039	0.026	21%		
County: Butler	0.293	0.102	0.094	0.102	105%		*
County: Lawrence	0.075	0.070	0.091	0.070	-350%		
County: Lucas	0.477	0.709	0.662	0.709	79%		
Medicaid Member Months	9.339	9.202	9.611	9.202	-225%		
MCP Member Months	7.117	7.287	6.688	7.287	-263%		
Dual Eligibility Member Months	0.272	0.139	0.232	0.139	27%		
Waiver Member Months	0.350	0.156	0.321	0.156	13%		
ABD Member Months	0.909	1.577	2.326	1.577	192%		
CFC Member Months	7.019	7.039	6.276	7.039	-3847%		

**All Health Homes (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.000	0.000	0.000	0.000	N/A	YES	N/A
# ED Mental Health Visits	0.006	0.015	0.020	0.015	143%		*
# IP Mental Health Visits	0.001	0.003	0.003	0.003	100%		*
13 or More Mental Health Rx	0.021	0.055	0.070	0.055	136%		
ADHD	0.023	0.053	0.057	0.053	113%		*
Acute bronchitis	0.054	0.058	0.092	0.058	726%		
Alcohol-related disorders	0.004	0.009	0.011	0.009	123%		*
Anxiety Disorders	0.020	0.038	0.054	0.038	169%		
Asthma	0.057	0.100	0.121	0.100	140%		
Autism	0.002	0.004	0.005	0.004	147%	YES	*
Bipolar Disorder	0.005	0.011	0.014	0.011	129%		*
Blindness and vision defects	0.143	0.201	0.232	0.201	149%		
Cancer	0.013	0.010	0.019	0.010	-143%		
Cardiac dysrhythmias	0.025	0.033	0.051	0.033	307%		

**All Health Homes (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.056	0.062	0.095	0.062	664%		
Conduct Disorder	0.003	0.008	0.010	0.008	121%		*
Congestive heart failure; nonhypertensive	0.014	0.011	0.016	0.011	-87%		*
Coronary atherosclerosis and other heart disease	0.023	0.015	0.028	0.015	-50%		
Cystic fibrosis	0.000	0.000	0.000	0.000	100%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.009	0.007	0.014	0.007	-193%		
Depression	0.022	0.050	0.057	0.050	124%		*
Developmental disorders	0.033	0.043	0.057	0.043	245%		
Diabetes	0.058	0.051	0.085	0.051	-348%		
Epilepsy; convulsions	0.018	0.022	0.028	0.022	238%		*
Esophageal disorders	0.025	0.028	0.042	0.028	526%		
Essential hypertension	0.079	0.079	0.125	0.079	8737%		
HIV infection	0.002	0.001	0.002	0.001	-319%	YES	*
Intracranial injury	0.005	0.009	0.011	0.009	156%		*

**All Health Homes (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.004	0.005	0.004	115%	YES	*
Neoplasms of unspecified nature or uncertain behavior	0.032	0.040	0.067	0.040	395%		
Obsessive-Compulsive Disorders	0.001	0.001	0.001	0.001	319%	YES	*
Osteoarthritis	0.029	0.029	0.044	0.029	4338%		
Other Developmental Disorder	0.001	0.000	0.003	0.000	-308%	YES	
Other nervous system disorders	0.057	0.074	0.108	0.074	263%		
PTSD	0.001	0.002	0.002	0.002	67%	YES	*
Pregnancy	0.040	0.036	0.058	0.036	-510%		
Psychotic Disorder	0.006	0.014	0.018	0.014	138%		*
Spondylosis; intervertebral disc disorders; other back	0.092	0.130	0.186	0.130	227%		
Substance-related disorders	0.012	0.021	0.029	0.021	185%		*
Thyroid disorders	0.019	0.017	0.025	0.017	-242%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Butler (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.695	35.413	40.305	35.413	166%		
Female	0.576	0.638	0.608	0.638	52%		*
White	0.727	0.835	0.812	0.835	77%		*
Black	0.239	0.145	0.166	0.145	75%		*
County: Adams	0.042	0.000	0.028	0.000	19%	YES	
County: Butler	0.300	1.000	0.349	1.000	11%	YES	
County: Lawrence	0.074	0.000	0.104	0.000	-21%	YES	
County: Lucas	0.471	0.000	0.378	0.000	17%	YES	
Medicaid Member Months	9.475	10.741	11.194	10.741	150%		
MCP Member Months	7.156	7.496	7.093	7.496	-19%		*
Dual Eligibility Member Months	0.282	0.432	0.626	0.432	207%		*
Waiver Member Months	0.363	0.481	0.615	0.481	200%		*
ABD Member Months	1.005	3.566	4.065	3.566	116%		*
CFC Member Months	7.018	5.173	4.264	5.173	150%		

<b>Butler (All Ages, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
# Mental Health Center Visits	1.069	13.690	9.199	13.690	76%		
# ED Mental Health Visits	0.012	0.095	0.064	0.095	69%		*
# IP Mental Health Visits	0.003	0.026	0.021	0.026	83%		*
13 or More Mental Health Rx	0.031	0.274	0.253	0.274	93%		*
ADHD	0.032	0.111	0.095	0.111	83%		*
Acute bronchitis	0.056	0.113	0.119	0.113	110%		*
Alcohol-related disorders	0.006	0.020	0.023	0.020	118%		*
Anxiety Disorders	0.028	0.127	0.135	0.127	106%		*
Asthma	0.060	0.103	0.122	0.103	139%		*
Autism	0.003	0.003	0.003	0.003	100%	YES	*
Bipolar Disorder	0.014	0.145	0.132	0.145	92%		*
Blindness and vision defects	0.150	0.271	0.282	0.271	109%		*
Cancer	0.014	0.039	0.059	0.039	157%		*
Cardiac dysrhythmias	0.027	0.059	0.067	0.059	121%		*

<b>Butler (All Ages, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Chronic obstructive pulmonary disease and bronchiectasis	0.059	0.127	0.155	0.127	134%		*
Conduct Disorder	0.011	0.051	0.038	0.051	73%		*
Congestive heart failure; nonhypertensive	0.014	0.010	0.029	0.010	-279%	YES	
Coronary atherosclerosis and other heart disease	0.023	0.034	0.059	0.034	274%		
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.010	0.003	0.021	0.003	-104%	YES	
Depression	0.047	0.312	0.328	0.312	105%		*
Developmental disorders	0.037	0.065	0.083	0.065	154%		*
Diabetes	0.061	0.155	0.197	0.155	136%		*
Epilepsy; convulsions	0.019	0.054	0.067	0.054	130%		*
Esophageal disorders	0.027	0.080	0.126	0.080	164%		
Essential hypertension	0.083	0.192	0.233	0.192	131%		*
HIV infection	0.002	0.005	0.003	0.005	56%	YES	*
Intracranial injury	0.006	0.010	0.028	0.010	398%	YES	

<b>Butler (All Ages, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Mental Disorder Not Otherwise Specified (NOS)	0.005	0.033	0.036	0.033	109%		*
Neoplasms of unspecified nature or uncertain behavior	0.035	0.093	0.106	0.093	118%		*
Obsessive-Compulsive Disorders	0.001	0.010	0.008	0.010	85%	YES	*
Osteoarthritis	0.031	0.064	0.085	0.064	152%		*
Other Developmental Disorder	0.003	0.016	0.015	0.016	90%	YES	*
Other nervous system disorders	0.062	0.206	0.254	0.206	127%		
PTSD	0.005	0.073	0.051	0.073	74%		*
Pregnancy	0.040	0.034	0.038	0.034	45%		*
Psychotic Disorder	0.015	0.119	0.106	0.119	90%		*
Spondylosis; intervertebral disc disorders; other back	0.100	0.305	0.351	0.305	118%		*
Substance-related disorders	0.019	0.047	0.049	0.047	105%		*
Thyroid disorders	0.021	0.042	0.051	0.042	132%		*

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Butler (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	9.427	11.898	12.408	11.898	123%		*
Female	0.498	0.401	0.401	0.401	100%		*
White	0.710	0.834	0.752	0.834	32%		*
Black	0.256	0.140	0.229	0.140	21%		
County: Adams	0.042	0.000	0.019	0.000	33%	YES	*
County: Butler	0.341	1.000	0.516	1.000	30%	YES	
County: Lawrence	0.071	0.000	0.108	0.000	-26%	YES	
County: Lucas	0.450	0.000	0.280	0.000	31%	YES	
Medicaid Member Months	10.659	11.510	11.452	11.510	90%		*
MCP Member Months	9.662	9.904	8.522	9.904	-444%		
Dual Eligibility Member Months	0.003	0.000	0.013	0.000	-279%		*
Waiver Member Months	0.029	0.000	0.057	0.000	-61%		*
ABD Member Months	0.332	1.006	1.682	1.006	174%		*
CFC Member Months	10.318	10.503	9.752	10.503	-295%		*

**Butler (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.105	15.618	18.879	15.618	115%		*
# ED Mental Health Visits	0.004	0.083	0.076	0.083	94%		*
# IP Mental Health Visits	0.002	0.051	0.051	0.051	100%		*
13 or More Mental Health Rx	0.008	0.070	0.089	0.070	122%		*
ADHD	0.060	0.369	0.344	0.369	93%		*
Acute bronchitis	0.056	0.057	0.051	0.057	-675%	YES	*
Alcohol-related disorders	0.001	0.000	0.000	0.000	N/A	YES	N/A
Anxiety Disorders	0.008	0.064	0.083	0.064	124%	YES	*
Asthma	0.075	0.108	0.070	0.108	-16%		*
Autism	0.003	0.006	0.019	0.006	370%	YES	*
Bipolar Disorder	0.003	0.051	0.070	0.051	127%	YES	*
Blindness and vision defects	0.156	0.293	0.217	0.293	47%		*
Cancer	0.001	0.006	0.006	0.006	100%	YES	*
Cardiac dysrhythmias	0.005	0.006	0.013	0.006	425%	YES	*

<b>Butler (Under 18, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Chronic obstructive pulmonary disease and bronchiectasis	0.024	0.006	0.032	0.006	-31%	YES	*
Conduct Disorder	0.021	0.172	0.197	0.172	112%		*
Congestive heart failure; nonhypertensive	0.000	0.000	0.000	0.000	N/A	YES	N/A
Coronary atherosclerosis and other heart disease	0.000	0.000	0.000	0.000	N/A	YES	N/A
Cystic fibrosis	0.001	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.006	0.000	0.006	-25%	YES	*
Depression	0.016	0.197	0.229	0.197	113%		*
Developmental disorders	0.050	0.146	0.166	0.146	116%		*
Diabetes	0.005	0.019	0.013	0.019	61%	YES	*
Epilepsy; convulsions	0.012	0.038	0.038	0.038	100%	YES	*
Esophageal disorders	0.009	0.013	0.006	0.013	-108%	YES	*
Essential hypertension	0.003	0.025	0.006	0.025	21%	YES	*
HIV infection	0.000	0.000	0.000	0.000	N/A	YES	N/A
Intracranial injury	0.005	0.013	0.032	0.013	256%	YES	*

<b>Butler (Under 18, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.038	0.045	0.038	112%	YES	*
Neoplasms of unspecified nature or uncertain behavior	0.012	0.057	0.045	0.057	77%	YES	*
Obsessive-Compulsive Disorders	0.001	0.006	0.006	0.006	100%	YES	*
Osteoarthritis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Other Developmental Disorder	0.005	0.045	0.057	0.045	123%	YES	*
Other nervous system disorders	0.025	0.127	0.115	0.127	90%		*
PTSD	0.004	0.070	0.089	0.070	120%		*
Pregnancy	0.003	0.006	0.019	0.006	306%	YES	*
Psychotic Disorder	0.002	0.025	0.025	0.025	100%	YES	*
Spondylosis; intervertebral disc disorders; other back	0.018	0.064	0.045	0.064	64%	YES	*
Substance-related disorders	0.004	0.019	0.032	0.019	156%	YES	*
Thyroid disorders	0.003	0.000	0.000	0.000	N/A	YES	N/A

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Butler (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	42.341	43.509	46.331	43.509	364%		
Female	0.639	0.719	0.724	0.719	106%		*
White	0.742	0.836	0.836	0.836	100%		*
Black	0.225	0.147	0.138	0.147	112%		*
County: Adams	0.042	0.000	0.059	0.000	-20%	YES	
County: Butler	0.268	1.000	0.346	1.000	17%	YES	
County: Lawrence	0.076	0.000	0.107	0.000	-21%	YES	
County: Lucas	0.488	0.000	0.336	0.000	27%	YES	
Medicaid Member Months	8.527	10.476	11.160	10.476	151%		
MCP Member Months	5.146	6.667	6.553	6.667	92%		*
Dual Eligibility Member Months	0.506	0.581	0.971	0.581	531%		
Waiver Member Months	0.631	0.647	0.930	0.647	1698%		*
ABD Member Months	1.545	4.447	4.480	4.447	101%		*
CFC Member Months	4.371	3.338	3.195	3.338	114%		*

**Butler (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.040	13.026	9.388	13.026	80%		
# ED Mental Health Visits	0.018	0.099	0.066	0.099	63%		*
# IP Mental Health Visits	0.003	0.018	0.015	0.018	88%		*
13 or More Mental Health Rx	0.048	0.344	0.377	0.344	109%		*
ADHD	0.010	0.022	0.011	0.022	12%	YES	*
Acute bronchitis	0.055	0.132	0.151	0.132	121%		*
Alcohol-related disorders	0.010	0.026	0.029	0.026	111%		*
Anxiety Disorders	0.044	0.149	0.162	0.149	110%		*
Asthma	0.048	0.101	0.105	0.101	107%		*
Autism	0.002	0.002	0.002	0.002	100%	YES	*
Bipolar Disorder	0.023	0.178	0.171	0.178	97%		*
Blindness and vision defects	0.146	0.263	0.307	0.263	133%		*
Cancer	0.024	0.050	0.064	0.050	140%		*
Cardiac dysrhythmias	0.044	0.077	0.105	0.077	173%		*

**Butler (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.088	0.169	0.232	0.169	165%		
Conduct Disorder	0.003	0.009	0.000	0.009	-62%	YES	
Congestive heart failure; nonhypertensive	0.025	0.013	0.053	0.013	-161%	YES	
Coronary atherosclerosis and other heart disease	0.042	0.046	0.075	0.046	640%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.017	0.002	0.031	0.002	-50%	YES	
Depression	0.072	0.351	0.414	0.351	118%		
Developmental disorders	0.027	0.037	0.039	0.037	119%		*
Diabetes	0.106	0.202	0.221	0.202	118%		*
Epilepsy; convulsions	0.025	0.059	0.081	0.059	150%		*
Esophageal disorders	0.041	0.103	0.101	0.103	97%		*
Essential hypertension	0.147	0.250	0.305	0.250	147%		*
HIV infection	0.003	0.007	0.007	0.007	100%	YES	*
Intracranial injury	0.007	0.009	0.007	0.009	-1%	YES	*

<b>Butler (18 and Over, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Mental Disorder Not Otherwise Specified (NOS)	0.007	0.031	0.022	0.031	69%		*
Neoplasms of unspecified nature or uncertain behavior	0.053	0.105	0.114	0.105	114%		*
Obsessive-Compulsive Disorders	0.001	0.011	0.009	0.011	82%	YES	*
Osteoarthritis	0.055	0.086	0.123	0.086	202%		*
Other Developmental Disorder	0.001	0.007	0.007	0.007	100%	YES	*
Other nervous system disorders	0.091	0.232	0.276	0.232	126%		*
PTSD	0.005	0.075	0.031	0.075	45%		
Pregnancy	0.070	0.044	0.044	0.044	100%		*
Psychotic Disorder	0.025	0.151	0.158	0.151	104%		*
Spondylosis; intervertebral disc disorders; other back	0.166	0.388	0.461	0.388	129%		
Substance-related disorders	0.032	0.057	0.061	0.057	115%		*
Thyroid disorders	0.035	0.057	0.086	0.057	206%		*

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Butler (All Ages, CMHC Experience)**  
Summary of Covariate Averages Before and After Propensity Score Matching

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	29.433	37.787	37.876	37.787	101%		*
Female	0.566	0.633	0.658	0.633	139%		*
White	0.773	0.830	0.866	0.830	169%		*
Black	0.201	0.152	0.124	0.152	163%		*
County: Adams	0.028	0.000	0.023	0.000	11%	YES	
County: Butler	0.394	1.000	0.494	1.000	18%	YES	
County: Lawrence	0.063	0.000	0.058	0.000	4%	YES	
County: Lucas	0.392	0.000	0.301	0.000	18%	YES	
Medicaid Member Months	11.345	11.595	11.605	11.595	105%		*
MCP Member Months	7.691	7.633	7.458	7.633	398%		*
Dual Eligibility Member Months	0.418	0.582	0.499	0.582	51%		*
Waiver Member Months	0.540	0.716	0.770	0.716	128%		*
ABD Member Months	2.324	4.567	4.478	4.567	96%		*
CFC Member Months	6.993	4.301	4.430	4.301	95%		*

**Butler (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	15.681	21.246	20.127	21.246	82%		*
# ED Mental Health Visits	0.095	0.137	0.142	0.137	111%		*
# IP Mental Health Visits	0.029	0.038	0.043	0.038	148%		*
13 or More Mental Health Rx	0.167	0.380	0.405	0.380	111%		*
ADHD	0.164	0.122	0.101	0.122	153%		*
Acute bronchitis	0.080	0.122	0.114	0.122	83%		*
Alcohol-related disorders	0.027	0.020	0.025	0.020	19%	YES	*
Anxiety Disorders	0.141	0.162	0.172	0.162	147%		*
Asthma	0.090	0.114	0.104	0.114	58%		*
Autism	0.009	0.003	0.010	0.003	-18%	YES	*
Bipolar Disorder	0.141	0.208	0.233	0.208	135%		*
Blindness and vision defects	0.249	0.294	0.276	0.294	61%		*
Cancer	0.019	0.048	0.051	0.048	107%		*
Cardiac dysrhythmias	0.046	0.071	0.053	0.071	30%		*

**Butler (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.099	0.154	0.162	0.154	112%		*
Conduct Disorder	0.113	0.061	0.056	0.061	112%		*
Congestive heart failure; nonhypertensive	0.017	0.010	0.020	0.010	-39%	YES	*
Coronary atherosclerosis and other heart disease	0.026	0.046	0.038	0.046	64%		*
Cystic fibrosis	0.001	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.016	0.003	0.020	0.003	-19%	YES	
Depression	0.385	0.453	0.471	0.453	126%		*
Developmental disorders	0.089	0.084	0.089	0.084	10%		*
Diabetes	0.101	0.200	0.195	0.200	95%		*
Epilepsy; convulsions	0.041	0.056	0.073	0.056	208%		*
Esophageal disorders	0.053	0.101	0.096	0.101	91%		*
Essential hypertension	0.135	0.241	0.215	0.241	78%		*
HIV infection	0.002	0.003	0.000	0.003	-2441%	YES	*
Intracranial injury	0.013	0.008	0.020	0.008	-96%	YES	*

<b>Butler (All Ages, CMHC Experience)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Mental Disorder Not Otherwise Specified (NOS)	0.046	0.051	0.073	0.051	528%		*
Neoplasms of unspecified nature or uncertain behavior	0.074	0.124	0.127	0.124	105%		*
Obsessive-Compulsive Disorders	0.005	0.015	0.005	0.015	-2%	YES	*
Osteoarthritis	0.052	0.084	0.076	0.084	78%		*
Other Developmental Disorder	0.031	0.023	0.023	0.023	100%	YES	*
Other nervous system disorders	0.133	0.228	0.263	0.228	133%		*
PTSD	0.058	0.106	0.096	0.106	81%		*
Pregnancy	0.048	0.023	0.043	0.023	17%	YES	*
Psychotic Disorder	0.135	0.180	0.177	0.180	95%		*
Spondylosis; intervertebral disc disorders; other back	0.205	0.359	0.408	0.359	128%		*
Substance-related disorders	0.112	0.061	0.063	0.061	94%		*
Thyroid disorders	0.042	0.063	0.066	0.063	111%		*

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Butler (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.568	31.110	36.239	31.110	252%		
Female	0.577	0.647	0.670	0.647	134%		*
White	0.724	0.844	0.743	0.844	15%		
Black	0.241	0.133	0.225	0.133	14%		
County: Adams	0.043	0.000	0.064	0.000	-24%	YES	
County: Butler	0.293	1.000	0.271	1.000	-6%	YES	
County: Lawrence	0.075	0.000	0.069	0.000	4%	YES	
County: Lucas	0.477	0.000	0.431	0.000	9%	YES	
Medicaid Member Months	9.339	9.193	10.078	9.193	-599%		
MCP Member Months	7.117	7.248	6.202	7.248	-730%		
Dual Eligibility Member Months	0.272	0.161	0.413	0.161	-96%		*
Waiver Member Months	0.350	0.055	0.110	0.055	72%		*
ABD Member Months	0.909	1.752	2.427	1.752	167%		*
CFC Member Months	7.019	6.752	6.096	6.752	352%		*

**Butler (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.000	0.000	0.000	0.000	N/A	YES	N/A
# ED Mental Health Visits	0.006	0.018	0.032	0.018	166%		*
# IP Mental Health Visits	0.001	0.005	0.005	0.005	100%		*
13 or More Mental Health Rx	0.021	0.083	0.064	0.083	75%		*
ADHD	0.023	0.092	0.069	0.092	72%		*
Acute bronchitis	0.054	0.096	0.124	0.096	154%		*
Alcohol-related disorders	0.004	0.018	0.009	0.018	41%	YES	*
Anxiety Disorders	0.020	0.064	0.078	0.064	124%		*
Asthma	0.057	0.083	0.106	0.083	180%		*
Autism	0.002	0.005	0.005	0.005	100%	YES	*
Bipolar Disorder	0.005	0.032	0.005	0.032	-1%	YES	
Blindness and vision defects	0.143	0.229	0.298	0.229	170%		*
Cancer	0.013	0.023	0.023	0.023	100%	YES	*
Cardiac dysrhythmias	0.025	0.037	0.073	0.037	346%	YES	*

**Butler (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.056	0.078	0.156	0.078	384%		
Conduct Disorder	0.003	0.032	0.009	0.032	27%	YES	*
Congestive heart failure; nonhypertensive	0.014	0.009	0.037	0.009	-343%	YES	*
Coronary atherosclerosis and other heart disease	0.023	0.014	0.083	0.014	-378%	YES	
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.009	0.005	0.023	0.005	-182%	YES	*
Depression	0.022	0.055	0.092	0.055	183%		*
Developmental disorders	0.033	0.032	0.050	0.032	-1128%	YES	*
Diabetes	0.058	0.073	0.115	0.073	325%		*
Epilepsy; convulsions	0.018	0.050	0.073	0.050	153%		*
Esophageal disorders	0.025	0.041	0.078	0.041	272%	YES	*
Essential hypertension	0.079	0.106	0.179	0.106	330%		
HIV infection	0.002	0.009	0.005	0.009	47%	YES	*
Intracranial injury	0.005	0.014	0.005	0.014	-11%	YES	*

**Butler (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.000	0.009	0.000	-132%	YES	*
Neoplasms of unspecified nature or uncertain behavior	0.032	0.037	0.092	0.037	970%	YES	
Obsessive-Compulsive Disorders	0.001	0.000	0.005	0.000	-147%	YES	*
Osteoarthritis	0.029	0.028	0.064	0.028	-1741%	YES	*
Other Developmental Disorder	0.001	0.005	0.000	0.005	-35%	YES	*
Other nervous system disorders	0.057	0.165	0.197	0.165	124%		*
PTSD	0.001	0.014	0.000	0.014	-12%	YES	*
Pregnancy	0.040	0.055	0.078	0.055	227%		*
Psychotic Disorder	0.006	0.009	0.014	0.009	226%	YES	*
Spondylosis; intervertebral disc disorders; other back	0.092	0.206	0.216	0.206	107%		*
Substance-related disorders	0.012	0.023	0.032	0.023	171%	YES	*
Thyroid disorders	0.019	0.005	0.046	0.005	-94%	YES	

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Harbor (All Ages, All CMHC)**  
Summary of Covariate Averages Before and After Propensity Score Matching

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.695	15.569	18.484	15.569	68%		
Female	0.576	0.430	0.410	0.430	114%		*
White	0.727	0.529	0.563	0.529	83%		
Black	0.239	0.452	0.411	0.452	82%		
County: Adams	0.042	0.000	0.029	0.000	17%	YES	
County: Butler	0.300	0.000	0.354	0.000	-13%	YES	
County: Lawrence	0.074	0.000	0.073	0.000	1%	YES	
County: Lucas	0.471	1.000	0.455	1.000	-3%	YES	N/A
Medicaid Member Months	9.475	11.308	11.469	11.308	115%		
MCP Member Months	7.156	8.629	8.149	8.629	66%		
Dual Eligibility Member Months	0.282	0.115	0.174	0.115	57%		*
Waiver Member Months	0.363	0.129	0.226	0.129	51%		
ABD Member Months	1.005	2.126	2.784	2.126	149%		
CFC Member Months	7.018	8.821	8.056	8.821	56%		

Harbor (All Ages, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.069	19.560	15.644	19.560	86%		
# ED Mental Health Visits	0.012	0.045	0.056	0.045	127%		*
# IP Mental Health Visits	0.003	0.033	0.025	0.033	77%		*
13 or More Mental Health Rx	0.031	0.115	0.134	0.115	117%		
ADHD	0.032	0.292	0.328	0.292	110%		
Acute bronchitis	0.056	0.038	0.046	0.038	51%		*
Alcohol-related disorders	0.006	0.004	0.008	0.004	-117%	YES	
Anxiety Disorders	0.028	0.051	0.079	0.051	193%		
Asthma	0.060	0.148	0.180	0.148	129%		
Autism	0.003	0.019	0.024	0.019	120%		*
Bipolar Disorder	0.014	0.043	0.047	0.043	110%		*
Blindness and vision defects	0.150	0.284	0.329	0.284	130%		
Cancer	0.014	0.006	0.008	0.006	71%		*
Cardiac dysrhythmias	0.027	0.023	0.038	0.023	-237%		

Harbor (All Ages, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.059	0.035	0.056	0.035	13%		
Conduct Disorder	0.011	0.213	0.234	0.213	107%		*
Congestive heart failure; nonhypertensive	0.014	0.004	0.006	0.004	69%	YES	*
Coronary atherosclerosis and other heart disease	0.023	0.005	0.006	0.005	86%		*
Cystic fibrosis	0.000	0.000	0.001	0.000	1888%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.010	0.004	0.007	0.004	42%		*
Depression	0.047	0.177	0.236	0.177	135%		
Developmental disorders	0.037	0.136	0.162	0.136	121%		
Diabetes	0.061	0.037	0.063	0.037	-9%		
Epilepsy; convulsions	0.019	0.031	0.043	0.031	194%		
Esophageal disorders	0.027	0.020	0.031	0.020	-51%		
Essential hypertension	0.083	0.040	0.065	0.040	37%		
HIV infection	0.002	0.001	0.003	0.001	-137%	YES	*
Intracranial injury	0.006	0.010	0.013	0.010	165%		*

**Harbor (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.005	0.009	0.014	0.009	200%		*
Neoplasms of unspecified nature or uncertain behavior	0.035	0.053	0.069	0.053	176%		
Obsessive-Compulsive Disorders	0.001	0.002	0.006	0.002	558%	YES	
Osteoarthritis	0.031	0.020	0.042	0.020	-83%		
Other Developmental Disorder	0.003	0.081	0.077	0.081	96%		*
Other nervous system disorders	0.062	0.072	0.117	0.072	468%		
PTSD	0.005	0.019	0.031	0.019	154%		
Pregnancy	0.040	0.011	0.016	0.011	76%		*
Psychotic Disorder	0.015	0.059	0.079	0.059	133%		
Spondylosis; intervertebral disc disorders; other back	0.100	0.075	0.134	0.075	-115%		
Substance-related disorders	0.019	0.013	0.024	0.013	-63%		
Thyroid disorders	0.021	0.016	0.030	0.016	-163%		

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Harbor (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	9.427	10.651	10.841	10.642	117%		*
Female	0.498	0.377	0.329	0.378	142%		
White	0.710	0.534	0.579	0.535	76%		
Black	0.256	0.449	0.400	0.448	76%		
County: Adams	0.042	0.000	0.027	0.000	20%	YES	
County: Butler	0.341	0.000	0.371	0.000	-7%	YES	
County: Lawrence	0.071	0.000	0.067	0.000	2%	YES	
County: Lucas	0.450	1.000	0.459	1.000	2%	YES	N/A
Medicaid Member Months	10.659	11.423	11.309	11.421	81%		*
MCP Member Months	9.662	9.039	8.546	9.054	176%		
Dual Eligibility Member Months	0.003	0.012	0.018	0.012	137%		*
Waiver Member Months	0.029	0.002	0.019	0.002	20%		*
ABD Member Months	0.332	1.569	1.693	1.551	109%		*
CFC Member Months	10.318	9.843	9.597	9.860	152%		*

**Harbor (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.105	18.331	15.487	17.966	90%		
# ED Mental Health Visits	0.004	0.026	0.033	0.026	124%		*
# IP Mental Health Visits	0.002	0.027	0.020	0.027	77%		*
13 or More Mental Health Rx	0.008	0.060	0.066	0.061	108%		*
ADHD	0.060	0.351	0.411	0.349	117%		
Acute bronchitis	0.056	0.030	0.035	0.030	78%		*
Alcohol-related disorders	0.001	0.003	0.006	0.003	163%	YES	*
Anxiety Disorders	0.008	0.044	0.056	0.044	123%		*
Asthma	0.075	0.151	0.161	0.151	111%		*
Autism	0.003	0.021	0.026	0.021	121%		*
Bipolar Disorder	0.003	0.009	0.016	0.009	190%		
Blindness and vision defects	0.156	0.286	0.308	0.286	115%		*
Cancer	0.001	0.001	0.001	0.001	100%	YES	*
Cardiac dysrhythmias	0.005	0.012	0.021	0.012	196%		

**Harbor (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.024	0.017	0.025	0.017	-15%		*
Conduct Disorder	0.021	0.256	0.275	0.255	106%		*
Congestive heart failure; nonhypertensive	0.000	0.000	0.000	0.000	N/A	YES	N/A
Coronary atherosclerosis and other heart disease	0.000	0.000	0.000	0.000	-49%	YES	*
Cystic fibrosis	0.001	0.000	0.001	0.000	-1344%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.002	0.003	0.002	149%	YES	*
Depression	0.016	0.095	0.107	0.095	112%		*
Developmental disorders	0.050	0.147	0.177	0.146	125%		
Diabetes	0.005	0.010	0.018	0.010	206%		
Epilepsy; convulsions	0.012	0.021	0.035	0.021	222%		
Esophageal disorders	0.009	0.008	0.013	0.008	-295%		*
Essential hypertension	0.003	0.008	0.015	0.008	190%		
HIV infection	0.000	0.000	0.000	0.000	N/A	YES	N/A
Intracranial injury	0.005	0.008	0.010	0.008	157%		*

Harbor (Under 18, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.003	0.016	0.003	1276%	YES	
Neoplasms of unspecified nature or uncertain behavior	0.012	0.043	0.061	0.043	144%		
Obsessive-Compulsive Disorders	0.001	0.001	0.002	0.001	141%	YES	*
Osteoarthritis	0.000	0.000	0.001	0.000	-53%	YES	*
Other Developmental Disorder	0.005	0.098	0.086	0.098	91%		*
Other nervous system disorders	0.025	0.054	0.082	0.054	175%		
PTSD	0.004	0.018	0.025	0.018	133%		*
Pregnancy	0.003	0.001	0.002	0.001	54%	YES	*
Psychotic Disorder	0.002	0.009	0.010	0.009	110%		*
Spondylosis; intervertebral disc disorders; other back	0.018	0.027	0.040	0.027	219%		
Substance-related disorders	0.004	0.004	0.025	0.004	2037%	YES	
Thyroid disorders	0.003	0.006	0.006	0.006	100%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Harbor (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	42.341	35.460	36.252	35.460	87%		*
Female	0.639	0.646	0.682	0.646	627%		*
White	0.742	0.506	0.530	0.506	90%		*
Black	0.225	0.462	0.428	0.462	87%		*
County: Adams	0.042	0.000	0.018	0.000	35%	YES	
County: Butler	0.268	0.000	0.338	0.000	-18%	YES	
County: Lawrence	0.076	0.000	0.058	0.000	14%	YES	
County: Lucas	0.488	1.000	0.516	1.000	5%	YES	
Medicaid Member Months	8.527	10.844	11.184	10.844	123%		
MCP Member Months	5.146	6.974	6.894	6.974	96%		*
Dual Eligibility Member Months	0.506	0.528	0.628	0.528	523%		*
Waiver Member Months	0.631	0.644	0.668	0.644	277%		*
ABD Member Months	1.545	4.380	4.784	4.380	112%		*
CFC Member Months	4.371	4.688	4.462	4.688	29%		*

**Harbor (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.040	24.530	20.154	24.530	88%		
# ED Mental Health Visits	0.018	0.124	0.138	0.124	111%		*
# IP Mental Health Visits	0.003	0.058	0.074	0.058	120%		*
13 or More Mental Health Rx	0.048	0.336	0.342	0.336	102%		*
ADHD	0.010	0.056	0.070	0.056	122%		*
Acute bronchitis	0.055	0.072	0.066	0.072	67%		*
Alcohol-related disorders	0.010	0.006	0.034	0.006	-379%	YES	
Anxiety Disorders	0.044	0.080	0.114	0.080	176%		*
Asthma	0.048	0.136	0.156	0.136	118%		*
Autism	0.002	0.012	0.016	0.012	128%	YES	*
Bipolar Disorder	0.023	0.182	0.220	0.182	117%		*
Blindness and vision defects	0.146	0.274	0.254	0.274	86%		*
Cancer	0.024	0.022	0.030	0.022	-347%		*
Cardiac dysrhythmias	0.044	0.066	0.084	0.066	172%		*

**Harbor (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.088	0.108	0.100	0.108	61%		*
Conduct Disorder	0.003	0.038	0.020	0.038	58%		*
Congestive heart failure; nonhypertensive	0.025	0.018	0.012	0.018	205%	YES	*
Coronary atherosclerosis and other heart disease	0.042	0.022	0.016	0.022	139%		*
Cystic fibrosis	0.000	0.000	0.002	0.000	-200%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.017	0.012	0.014	0.012	55%	YES	*
Depression	0.072	0.506	0.570	0.506	112%		
Developmental disorders	0.027	0.088	0.092	0.088	105%		*
Diabetes	0.106	0.146	0.190	0.146	196%		*
Epilepsy; convulsions	0.025	0.068	0.082	0.068	126%		*
Esophageal disorders	0.041	0.068	0.076	0.068	126%		*
Essential hypertension	0.147	0.168	0.196	0.168	226%		*
HIV infection	0.003	0.004	0.008	0.004	333%	YES	*
Intracranial injury	0.007	0.018	0.012	0.018	52%	YES	*

Harbor (18 and Over, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.007	0.032	0.030	0.032	94%		*
Neoplasms of unspecified nature or uncertain behavior	0.053	0.094	0.088	0.094	87%		*
Obsessive-Compulsive Disorders	0.001	0.002	0.006	0.002	588%	YES	*
Osteoarthritis	0.055	0.100	0.118	0.100	134%		*
Other Developmental Disorder	0.001	0.012	0.014	0.012	113%	YES	*
Other nervous system disorders	0.091	0.146	0.170	0.146	138%		*
PTSD	0.005	0.024	0.022	0.024	91%		*
Pregnancy	0.070	0.050	0.054	0.050	79%		*
Psychotic Disorder	0.025	0.260	0.266	0.260	102%		*
Spondylosis; intervertebral disc disorders; other back	0.166	0.266	0.298	0.266	129%		*
Substance-related disorders	0.032	0.048	0.064	0.048	183%		*
Thyroid disorders	0.035	0.056	0.062	0.056	125%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Harbor (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	29.433	16.273	16.591	16.349	98%		*
Female	0.566	0.428	0.431	0.431	100%		*
White	0.773	0.540	0.539	0.547	103%		*
Black	0.201	0.442	0.441	0.434	102%		*
County: Adams	0.028	0.000	0.021	0.000	15%	YES	
County: Butler	0.394	0.000	0.369	0.000	5%	YES	
County: Lawrence	0.063	0.000	0.056	0.000	6%	YES	
County: Lucas	0.392	1.000	0.486	1.000	17%	YES	N/A
Medicaid Member Months	11.345	11.737	11.743	11.734	103%		*
MCP Member Months	7.691	8.679	8.773	8.751	102%		*
Dual Eligibility Member Months	0.418	0.147	0.153	0.149	98%		*
Waiver Member Months	0.540	0.159	0.158	0.161	101%		*
ABD Member Months	2.324	2.544	2.373	2.472	55%		*
CFC Member Months	6.993	8.763	8.928	8.827	106%		*

**Harbor (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	15.681	26.337	25.920	25.622	102%		*
# ED Mental Health Visits	0.095	0.060	0.062	0.061	94%		*
# IP Mental Health Visits	0.029	0.044	0.037	0.043	64%		*
13 or More Mental Health Rx	0.167	0.151	0.153	0.151	93%		*
ADHD	0.164	0.373	0.376	0.372	102%		*
Acute bronchitis	0.080	0.040	0.047	0.040	80%		*
Alcohol-related disorders	0.027	0.005	0.009	0.005	74%	YES	*
Anxiety Disorders	0.141	0.065	0.060	0.065	109%		*
Asthma	0.090	0.153	0.150	0.149	102%		*
Autism	0.009	0.023	0.022	0.023	91%		*
Bipolar Disorder	0.141	0.058	0.072	0.058	80%		*
Blindness and vision defects	0.249	0.305	0.310	0.306	107%		*
Cancer	0.019	0.006	0.006	0.006	100%		*
Cardiac dysrhythmias	0.046	0.028	0.028	0.027	97%		*

**Harbor (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.099	0.041	0.047	0.041	87%		*
Conduct Disorder	0.113	0.285	0.290	0.282	104%		*
Congestive heart failure; nonhypertensive	0.017	0.004	0.008	0.004	57%	YES	*
Coronary atherosclerosis and other heart disease	0.026	0.006	0.008	0.006	84%		*
Cystic fibrosis	0.001	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.016	0.005	0.007	0.005	75%	YES	*
Depression	0.385	0.231	0.230	0.233	102%		*
Developmental disorders	0.089	0.162	0.163	0.157	108%		*
Diabetes	0.101	0.043	0.045	0.043	96%		*
Epilepsy; convulsions	0.041	0.035	0.040	0.035	18%		*
Esophageal disorders	0.053	0.023	0.027	0.023	85%		*
Essential hypertension	0.135	0.044	0.053	0.045	88%		*
HIV infection	0.002	0.001	0.000	0.001	246%	YES	*
Intracranial injury	0.013	0.011	0.010	0.011	188%		*

Harbor (All Ages, CMHC Experience)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.046	0.012	0.008	0.012	121%		*
Neoplasms of unspecified nature or uncertain behavior	0.074	0.064	0.059	0.063	144%		*
Obsessive-Compulsive Disorders	0.005	0.002	0.002	0.002	100%	YES	*
Osteoarthritis	0.052	0.025	0.028	0.025	86%		*
Other Developmental Disorder	0.031	0.109	0.107	0.107	100%		*
Other nervous system disorders	0.133	0.085	0.082	0.085	108%		*
PTSD	0.058	0.026	0.028	0.026	92%		*
Pregnancy	0.048	0.010	0.012	0.010	91%		*
Psychotic Disorder	0.135	0.078	0.084	0.080	91%		*
Spondylosis; intervertebral disc disorders; other back	0.205	0.085	0.090	0.086	96%		*
Substance-related disorders	0.112	0.017	0.016	0.017	103%		*
Thyroid disorders	0.042	0.018	0.021	0.018	89%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Harbor (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.568	13.538	16.740	13.538	68%		
Female	0.577	0.438	0.379	0.438	142%		
White	0.724	0.496	0.507	0.496	96%		*
Black	0.241	0.481	0.453	0.481	89%		*
County: Adams	0.043	0.000	0.037	0.000	7%	YES	
County: Butler	0.293	0.000	0.296	0.000	-1%	YES	
County: Lawrence	0.075	0.000	0.065	0.000	7%	YES	
County: Lucas	0.477	1.000	0.516	1.000	8%	YES	
Medicaid Member Months	9.339	10.071	9.720	10.071	47%		*
MCP Member Months	7.117	8.487	7.059	8.487	-11%		
Dual Eligibility Member Months	0.272	0.022	0.017	0.022	111%		*
Waiver Member Months	0.350	0.043	0.139	0.043	53%		*
ABD Member Months	0.909	0.921	1.602	0.921	4816%		
CFC Member Months	7.019	8.986	7.787	8.986	34%		

**Harbor (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.000	0.000	0.000	0.000	N/A	YES	N/A
# ED Mental Health Visits	0.006	0.003	0.008	0.003	-95%		*
# IP Mental Health Visits	0.001	0.002	0.003	0.002	278%		*
13 or More Mental Health Rx	0.021	0.012	0.025	0.012	-41%	YES	*
ADHD	0.023	0.059	0.074	0.059	134%		*
Acute bronchitis	0.054	0.035	0.052	0.035	7%		*
Alcohol-related disorders	0.004	0.002	0.006	0.002	-49%	YES	*
Anxiety Disorders	0.020	0.011	0.009	0.011	122%	YES	*
Asthma	0.057	0.134	0.194	0.134	162%		
Autism	0.002	0.006	0.006	0.006	100%	YES	*
Bipolar Disorder	0.005	0.002	0.008	0.002	-59%	YES	*
Blindness and vision defects	0.143	0.222	0.291	0.222	177%		
Cancer	0.013	0.005	0.008	0.005	58%	YES	*
Cardiac dysrhythmias	0.025	0.006	0.022	0.006	14%	YES	

**Harbor (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.056	0.020	0.046	0.020	23%		
Conduct Disorder	0.003	0.006	0.012	0.006	240%	YES	*
Congestive heart failure; nonhypertensive	0.014	0.003	0.011	0.003	20%	YES	*
Coronary atherosclerosis and other heart disease	0.023	0.002	0.009	0.002	46%	YES	*
Cystic fibrosis	0.000	0.002	0.000	0.002	-44%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.009	0.003	0.002	0.003	141%	YES	*
Depression	0.022	0.020	0.029	0.020	-274%		*
Developmental disorders	0.033	0.060	0.080	0.060	162%		*
Diabetes	0.058	0.020	0.052	0.020	11%		
Epilepsy; convulsions	0.018	0.018	0.040	0.018	2341%		
Esophageal disorders	0.025	0.012	0.026	0.012	-7%	YES	*
Essential hypertension	0.079	0.026	0.074	0.026	7%		
HIV infection	0.002	0.000	0.002	0.000	-1%	YES	*
Intracranial injury	0.005	0.006	0.012	0.006	689%	YES	*

**Harbor (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.000	0.003	0.000	-34%	YES	*
Neoplasms of unspecified nature or uncertain behavior	0.032	0.022	0.045	0.022	-101%		
Obsessive-Compulsive Disorders	0.001	0.000	0.000	0.000	N/A	YES	N/A
Osteoarthritis	0.029	0.006	0.011	0.006	71%	YES	*
Other Developmental Disorder	0.001	0.000	0.000	0.000	N/A	YES	N/A
Other nervous system disorders	0.057	0.035	0.072	0.035	-63%		
PTSD	0.001	0.002	0.000	0.002	-312%	YES	*
Pregnancy	0.040	0.015	0.046	0.015	-20%	YES	
Psychotic Disorder	0.006	0.003	0.008	0.003	-38%	YES	*
Spondylosis; intervertebral disc disorders; other back	0.092	0.043	0.105	0.043	-21%		
Substance-related disorders	0.012	0.002	0.011	0.002	10%	YES	
Thyroid disorders	0.019	0.011	0.014	0.011	61%	YES	*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Shawnee (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.695	34.881	37.928	34.881	144%		
Female	0.576	0.574	0.581	0.574	-277%		*
White	0.727	0.964	0.971	0.964	106%		*
Black	0.239	0.027	0.023	0.027	104%		*
County: Adams	0.042	0.165	0.151	0.165	91%		*
County: Butler	0.300	0.000	0.251	0.000	12%	YES	
County: Lawrence	0.074	0.308	0.313	0.308	102%		*
County: Lucas	0.471	0.000	0.180	0.000	50%	YES	
Medicaid Member Months	9.475	11.116	11.409	11.116	128%		
MCP Member Months	7.156	7.846	7.497	7.846	49%		
Dual Eligibility Member Months	0.282	0.337	0.388	0.337	188%		*
Waiver Member Months	0.363	0.816	0.932	0.816	121%		*
ABD Member Months	1.005	4.599	4.925	4.599	107%		*
CFC Member Months	7.018	4.794	4.296	4.794	123%		

**Shawnee (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.069	16.468	13.751	16.468	90%		
# ED Mental Health Visits	0.012	0.074	0.081	0.074	109%		*
# IP Mental Health Visits	0.003	0.014	0.015	0.014	106%		*
13 or More Mental Health Rx	0.031	0.326	0.328	0.326	101%		*
ADHD	0.032	0.156	0.159	0.156	102%		*
Acute bronchitis	0.056	0.149	0.163	0.149	112%		*
Alcohol-related disorders	0.006	0.012	0.017	0.012	159%		*
Anxiety Disorders	0.028	0.153	0.172	0.153	112%		*
Asthma	0.060	0.119	0.131	0.119	118%		*
Autism	0.003	0.005	0.004	0.005	69%		*
Bipolar Disorder	0.014	0.132	0.132	0.132	100%		*
Blindness and vision defects	0.150	0.285	0.305	0.285	113%		*
Cancer	0.014	0.022	0.030	0.022	175%		*
Cardiac dysrhythmias	0.027	0.061	0.077	0.061	140%		

Shawnee (All Ages, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.059	0.208	0.233	0.208	113%		*
Conduct Disorder	0.011	0.082	0.087	0.082	105%		*
Congestive heart failure; nonhypertensive	0.014	0.027	0.026	0.027	90%		*
Coronary atherosclerosis and other heart disease	0.023	0.065	0.069	0.065	108%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.010	0.014	0.014	0.014	111%		*
Depression	0.047	0.339	0.358	0.339	105%		*
Developmental disorders	0.037	0.052	0.063	0.052	172%		*
Diabetes	0.061	0.171	0.195	0.171	118%		
Epilepsy; convulsions	0.019	0.048	0.054	0.048	117%		*
Esophageal disorders	0.027	0.090	0.106	0.090	120%		*
Essential hypertension	0.083	0.226	0.265	0.226	122%		
HIV infection	0.002	0.001	0.003	0.001	-167%	YES	*
Intracranial injury	0.006	0.013	0.016	0.013	132%		*

Shawnee (All Ages, All CMHC) Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.005	0.041	0.038	0.041	94%		*
Neoplasms of unspecified nature or uncertain behavior	0.035	0.111	0.129	0.111	119%		*
Obsessive-Compulsive Disorders	0.001	0.019	0.018	0.019	96%		*
Osteoarthritis	0.031	0.088	0.103	0.088	120%		*
Other Developmental Disorder	0.003	0.006	0.005	0.006	75%		*
Other nervous system disorders	0.062	0.133	0.159	0.133	130%		
PTSD	0.005	0.031	0.035	0.031	111%		*
Pregnancy	0.040	0.023	0.025	0.023	87%		*
Psychotic Disorder	0.015	0.174	0.158	0.174	93%		*
Spondylosis; intervertebral disc disorders; other back	0.100	0.282	0.318	0.282	117%		
Substance-related disorders	0.019	0.063	0.063	0.063	101%		*
Thyroid disorders	0.021	0.082	0.081	0.082	99%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Shawnee (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	9.427	12.297	12.635	12.288	113%		*
Female	0.498	0.409	0.414	0.409	95%		*
White	0.710	0.940	0.930	0.940	94%		*
Black	0.256	0.041	0.043	0.041	99%		*
County: Adams	0.042	0.096	0.125	0.097	142%		*
County: Butler	0.341	0.000	0.326	0.000	3%	YES	
County: Lawrence	0.071	0.315	0.242	0.314	76%		
County: Lucas	0.450	0.000	0.217	0.000	42%	YES	
Medicaid Member Months	10.659	11.421	11.376	11.418	92%		*
MCP Member Months	9.662	9.344	8.680	9.345	297%		
Dual Eligibility Member Months	0.003	0.002	0.005	0.002	-121%		*
Waiver Member Months	0.029	0.019	0.052	0.019	-182%		*
ABD Member Months	0.332	1.530	1.978	1.523	128%		
CFC Member Months	10.318	9.890	9.393	9.894	207%		

Shawnee (Under 18, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.105	15.319	14.157	15.225	96%		*
# ED Mental Health Visits	0.004	0.032	0.032	0.032	100%		*
# IP Mental Health Visits	0.002	0.011	0.011	0.010	115%		*
13 or More Mental Health Rx	0.008	0.090	0.065	0.089	77%		*
ADHD	0.060	0.453	0.474	0.450	105%		*
Acute bronchitis	0.056	0.132	0.154	0.132	124%		*
Alcohol-related disorders	0.001	0.006	0.003	0.006	50%	YES	*
Anxiety Disorders	0.008	0.066	0.073	0.065	110%		*
Asthma	0.075	0.123	0.122	0.122	100%		*
Autism	0.003	0.016	0.014	0.014	100%	YES	*
Bipolar Disorder	0.003	0.052	0.038	0.051	80%		*
Blindness and vision defects	0.156	0.304	0.358	0.304	132%		
Cancer	0.001	0.000	0.000	0.000	N/A	YES	N/A
Cardiac dysrhythmias	0.005	0.025	0.022	0.024	94%		*

<b>Shawnee (Under 18, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Chronic obstructive pulmonary disease and bronchiectasis	0.024	0.069	0.067	0.068	97%		*
Conduct Disorder	0.021	0.241	0.258	0.239	106%		*
Congestive heart failure; nonhypertensive	0.000	0.000	0.000	0.000	N/A	YES	N/A
Coronary atherosclerosis and other heart disease	0.000	0.000	0.002	0.000	-260%	YES	*
Cystic fibrosis	0.001	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.006	0.006	0.006	100%	YES	*
Depression	0.016	0.180	0.181	0.176	102%		*
Developmental disorders	0.050	0.117	0.151	0.116	142%		*
Diabetes	0.005	0.014	0.016	0.014	114%	YES	*
Epilepsy; convulsions	0.012	0.041	0.029	0.040	66%		*
Esophageal disorders	0.009	0.021	0.029	0.019	168%		*
Essential hypertension	0.003	0.011	0.010	0.010	100%	YES	*
HIV infection	0.000	0.000	0.000	0.000	N/A	YES	N/A
Intracranial injury	0.005	0.008	0.019	0.008	362%	YES	*

Shawnee (Under 18, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.043	0.057	0.041	127%		*
Neoplasms of unspecified nature or uncertain behavior	0.012	0.057	0.062	0.057	108%		*
Obsessive-Compulsive Disorders	0.001	0.046	0.017	0.041	54%		
Osteoarthritis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Other Developmental Disorder	0.005	0.016	0.030	0.014	205%	YES	*
Other nervous system disorders	0.025	0.033	0.041	0.032	210%		*
PTSD	0.004	0.014	0.029	0.014	195%	YES	*
Pregnancy	0.003	0.008	0.006	0.008	74%	YES	*
Psychotic Disorder	0.002	0.024	0.021	0.022	94%		*
Spondylosis; intervertebral disc disorders; other back	0.018	0.058	0.079	0.059	138%		*
Substance-related disorders	0.004	0.030	0.029	0.030	95%		*
Thyroid disorders	0.003	0.017	0.024	0.017	132%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Shawnee (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	42.341	45.000	46.008	45.000	142%		*
Female	0.639	0.649	0.649	0.649	100%		*
White	0.742	0.975	0.980	0.975	105%		*
Black	0.225	0.021	0.016	0.021	106%		*
County: Adams	0.042	0.196	0.186	0.196	95%		*
County: Butler	0.268	0.001	0.254	0.001	3%	YES	
County: Lawrence	0.076	0.305	0.307	0.305	101%		*
County: Lucas	0.488	0.000	0.149	0.000	57%	YES	
Medicaid Member Months	8.527	10.979	11.433	10.979	130%		
MCP Member Months	5.146	7.175	7.434	7.175	113%		*
Dual Eligibility Member Months	0.506	0.487	0.482	0.487	127%		*
Waiver Member Months	0.631	1.174	1.149	1.174	96%		*
ABD Member Months	1.545	5.974	6.189	5.974	104%		*
CFC Member Months	4.371	2.510	2.618	2.510	94%		*

**Shawnee (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.040	16.983	14.175	16.983	89%		
# ED Mental Health Visits	0.018	0.093	0.093	0.093	99%		*
# IP Mental Health Visits	0.003	0.016	0.027	0.016	160%		*
13 or More Mental Health Rx	0.048	0.431	0.461	0.431	106%		*
ADHD	0.010	0.023	0.023	0.023	105%		*
Acute bronchitis	0.055	0.157	0.172	0.157	112%		*
Alcohol-related disorders	0.010	0.015	0.018	0.015	148%		*
Anxiety Disorders	0.044	0.192	0.230	0.192	120%		
Asthma	0.048	0.117	0.122	0.117	106%		*
Autism	0.002	0.001	0.004	0.001	-102%	YES	*
Bipolar Disorder	0.023	0.167	0.167	0.167	100%		*
Blindness and vision defects	0.146	0.276	0.300	0.276	116%		*
Cancer	0.024	0.033	0.033	0.033	100%		*
Cardiac dysrhythmias	0.044	0.076	0.094	0.076	147%		*

**Shawnee (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.088	0.271	0.278	0.271	104%		*
Conduct Disorder	0.003	0.011	0.011	0.011	100%		*
Congestive heart failure; nonhypertensive	0.025	0.040	0.048	0.040	149%		*
Coronary atherosclerosis and other heart disease	0.042	0.094	0.090	0.094	94%		*
Cystic fibrosis	0.000	0.000	0.001	0.000	-78%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.017	0.017	0.020	0.017	1464%		*
Depression	0.072	0.411	0.433	0.411	105%		*
Developmental disorders	0.027	0.023	0.020	0.023	171%		*
Diabetes	0.106	0.241	0.249	0.241	105%		*
Epilepsy; convulsions	0.025	0.052	0.059	0.052	124%		*
Esophageal disorders	0.041	0.121	0.141	0.121	121%		*
Essential hypertension	0.147	0.323	0.349	0.323	113%		*
HIV infection	0.003	0.001	0.002	0.001	41%	YES	*
Intracranial injury	0.007	0.016	0.017	0.016	113%		*

Shawnee (18 and Over, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.007	0.040	0.042	0.040	105%		*
Neoplasms of unspecified nature or uncertain behavior	0.053	0.136	0.151	0.136	115%		*
Obsessive-Compulsive Disorders	0.001	0.007	0.003	0.007	30%	YES	*
Osteoarthritis	0.055	0.128	0.129	0.128	101%		*
Other Developmental Disorder	0.001	0.002	0.004	0.002	232%	YES	*
Other nervous system disorders	0.091	0.178	0.175	0.178	96%		*
PTSD	0.005	0.038	0.047	0.038	119%		*
Pregnancy	0.070	0.030	0.023	0.030	126%		*
Psychotic Disorder	0.025	0.241	0.224	0.241	94%		*
Spondylosis; intervertebral disc disorders; other back	0.166	0.382	0.413	0.382	113%		*
Substance-related disorders	0.032	0.078	0.091	0.078	124%		*
Thyroid disorders	0.035	0.110	0.118	0.110	108%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Shawnee (All Ages, CMHC Experience)**  
Summary of Covariate Averages Before and After Propensity Score Matching

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	29.433	36.026	34.677	35.232	92%		*
Female	0.566	0.575	0.571	0.575	57%		*
White	0.773	0.966	0.962	0.963	99%		*
Black	0.201	0.027	0.031	0.029	98%		*
County: Adams	0.028	0.172	0.149	0.149	100%		*
County: Butler	0.394	0.001	0.299	0.001	19%	YES	
County: Lawrence	0.063	0.293	0.272	0.270	101%		*
County: Lucas	0.392	0.000	0.177	0.000	42%	YES	
Medicaid Member Months	11.345	11.663	11.633	11.646	95%		*
MCP Member Months	7.691	8.076	8.007	7.999	102%		*
Dual Eligibility Member Months	0.418	0.354	0.334	0.369	157%		*
Waiver Member Months	0.540	0.919	0.794	0.883	78%		*
ABD Member Months	2.324	5.081	4.743	4.663	103%		*
CFC Member Months	6.993	4.608	4.877	4.922	102%		*

**Shawnee (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	15.681	20.500	20.024	19.970	101%		*
# ED Mental Health Visits	0.095	0.086	0.082	0.089	189%		*
# IP Mental Health Visits	0.029	0.016	0.018	0.016	87%		*
13 or More Mental Health Rx	0.167	0.371	0.347	0.347	100%		*
ADHD	0.164	0.180	0.203	0.187	201%		*
Acute bronchitis	0.080	0.156	0.136	0.149	84%		*
Alcohol-related disorders	0.027	0.013	0.014	0.015	106%		*
Anxiety Disorders	0.141	0.171	0.181	0.173	123%		*
Asthma	0.090	0.129	0.109	0.118	78%		*
Autism	0.009	0.005	0.007	0.005	45%	YES	*
Bipolar Disorder	0.141	0.158	0.171	0.159	166%		*
Blindness and vision defects	0.249	0.298	0.297	0.301	94%		*
Cancer	0.019	0.024	0.025	0.024	111%		*
Cardiac dysrhythmias	0.046	0.062	0.055	0.060	71%		*

**Shawnee (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.099	0.224	0.203	0.209	96%		*
Conduct Disorder	0.113	0.100	0.103	0.106	119%		*
Congestive heart failure; nonhypertensive	0.017	0.027	0.026	0.026	100%		*
Coronary atherosclerosis and other heart disease	0.026	0.073	0.065	0.070	92%		*
Cystic fibrosis	0.001	0.000	0.001	0.000	-14%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.016	0.015	0.009	0.015	618%		*
Depression	0.385	0.397	0.392	0.401	33%		*
Developmental disorders	0.089	0.055	0.060	0.057	92%		*
Diabetes	0.101	0.190	0.166	0.177	88%		*
Epilepsy; convulsions	0.041	0.055	0.055	0.055	105%		*
Esophageal disorders	0.053	0.100	0.093	0.097	92%		*
Essential hypertension	0.135	0.245	0.231	0.239	93%		*
HIV infection	0.002	0.001	0.006	0.001	-232%	YES	
Intracranial injury	0.013	0.013	0.016	0.014	1204%		*

**Shawnee (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.046	0.049	0.045	0.049	-71%		*
Neoplasms of unspecified nature or uncertain behavior	0.074	0.123	0.119	0.121	95%		*
Obsessive-Compulsive Disorders	0.005	0.023	0.021	0.020	103%		*
Osteoarthritis	0.052	0.094	0.084	0.089	90%		*
Other Developmental Disorder	0.031	0.008	0.009	0.009	96%		*
Other nervous system disorders	0.133	0.144	0.137	0.147	3%		*
PTSD	0.058	0.038	0.040	0.040	100%		*
Pregnancy	0.048	0.020	0.016	0.022	125%		*
Psychotic Disorder	0.135	0.210	0.194	0.191	103%		*
Spondylosis; intervertebral disc disorders; other back	0.205	0.293	0.282	0.284	97%		*
Substance-related disorders	0.112	0.069	0.080	0.073	83%		*
Thyroid disorders	0.042	0.092	0.081	0.082	99%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Shawnee (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.568	30.203	35.921	30.203	323%		
Female	0.577	0.571	0.566	0.571	181%		*
White	0.724	0.955	0.945	0.955	93%		*
Black	0.241	0.030	0.025	0.030	105%		*
County: Adams	0.043	0.139	0.141	0.139	102%		*
County: Butler	0.293	0.000	0.161	0.000	32%	YES	
County: Lawrence	0.075	0.372	0.347	0.372	93%		*
County: Lucas	0.477	0.000	0.199	0.000	48%	YES	
Medicaid Member Months	9.339	8.878	9.722	8.878	-99%		
MCP Member Months	7.117	6.908	6.524	6.908	288%		*
Dual Eligibility Member Months	0.272	0.266	0.392	0.266	-1611%		*
Waiver Member Months	0.350	0.400	0.648	0.400	524%		*
ABD Member Months	0.909	2.630	3.444	2.630	138%		
CFC Member Months	7.019	5.551	5.112	5.551	131%		*

**Shawnee (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.000	0.000	0.000	0.000	N/A	YES	N/A
# ED Mental Health Visits	0.006	0.025	0.030	0.025	118%		*
# IP Mental Health Visits	0.001	0.007	0.002	0.007	30%		*
13 or More Mental Health Rx	0.021	0.141	0.181	0.141	124%		*
ADHD	0.023	0.057	0.077	0.057	145%		*
Acute bronchitis	0.054	0.122	0.136	0.122	118%		*
Alcohol-related disorders	0.004	0.007	0.005	0.007	25%	YES	*
Anxiety Disorders	0.020	0.079	0.084	0.079	106%		*
Asthma	0.057	0.079	0.119	0.079	253%		*
Autism	0.002	0.007	0.000	0.007	-57%	YES	*
Bipolar Disorder	0.005	0.025	0.032	0.025	127%	YES	*
Blindness and vision defects	0.143	0.231	0.251	0.231	120%		*
Cancer	0.013	0.015	0.035	0.015	1125%	YES	*
Cardiac dysrhythmias	0.025	0.055	0.072	0.055	148%		*

**Shawnee (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.056	0.144	0.166	0.144	121%		*
Conduct Disorder	0.003	0.012	0.012	0.012	100%	YES	*
Congestive heart failure; nonhypertensive	0.014	0.027	0.030	0.027	115%		*
Coronary atherosclerosis and other heart disease	0.023	0.032	0.065	0.032	363%		
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.009	0.010	0.020	0.010	1248%	YES	*
Depression	0.022	0.102	0.127	0.102	123%		*
Developmental disorders	0.033	0.040	0.040	0.040	100%		*
Diabetes	0.058	0.092	0.139	0.092	214%		
Epilepsy; convulsions	0.018	0.022	0.052	0.022	580%	YES	
Esophageal disorders	0.025	0.050	0.060	0.050	134%		*
Essential hypertension	0.079	0.149	0.199	0.149	159%		*
HIV infection	0.002	0.000	0.002	0.000	-28%	YES	*
Intracranial injury	0.005	0.012	0.012	0.012	100%	YES	*

Shawnee (All Ages, No CMHC Experience)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.010	0.007	0.010	75%	YES	*
Neoplasms of unspecified nature or uncertain behavior	0.032	0.065	0.109	0.065	204%		
Obsessive-Compulsive Disorders	0.001	0.002	0.000	0.002	-64%	YES	*
Osteoarthritis	0.029	0.065	0.092	0.065	161%		*
Other Developmental Disorder	0.001	0.000	0.005	0.000	-138%	YES	*
Other nervous system disorders	0.057	0.089	0.099	0.089	127%		*
PTSD	0.001	0.000	0.000	0.000	N/A	YES	N/A
Pregnancy	0.040	0.037	0.045	0.037	-194%		*
Psychotic Disorder	0.006	0.025	0.020	0.025	78%	YES	*
Spondylosis; intervertebral disc disorders; other back	0.092	0.233	0.270	0.233	122%		*
Substance-related disorders	0.012	0.040	0.047	0.040	121%		*
Thyroid disorders	0.019	0.037	0.062	0.037	207%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Unison (All Ages, All CMHC)**  
Summary of Covariate Averages Before and After Propensity Score Matching

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.695	41.072	42.883	40.946	115%		
Female	0.576	0.560	0.583	0.561	-37%		*
White	0.727	0.559	0.645	0.562	52%		
Black	0.239	0.415	0.324	0.411	53%		
County: Adams	0.042	0.000	0.042	0.000	0%	YES	
County: Butler	0.300	0.000	0.371	0.000	-17%	YES	
County: Lawrence	0.074	0.000	0.082	0.000	-6%	YES	
County: Lucas	0.471	1.000	0.403	1.000	-15%	YES	N/A
Medicaid Member Months	9.475	10.968	11.260	10.958	130%		
MCP Member Months	7.156	6.916	6.544	6.881	239%		*
Dual Eligibility Member Months	0.282	0.513	0.614	0.518	136%		*
Waiver Member Months	0.363	0.499	0.659	0.504	199%		*
ABD Member Months	1.005	5.032	5.149	4.968	104%		*
CFC Member Months	7.018	3.293	2.978	3.327	110%		

Unison (All Ages, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.069	21.664	18.950	21.064	94%		*
# ED Mental Health Visits	0.012	0.123	0.138	0.124	110%		*
# IP Mental Health Visits	0.003	0.042	0.045	0.041	108%		*
13 or More Mental Health Rx	0.031	0.336	0.339	0.331	102%		*
ADHD	0.032	0.081	0.094	0.082	119%		*
Acute bronchitis	0.056	0.078	0.097	0.078	174%		*
Alcohol-related disorders	0.006	0.055	0.053	0.053	100%		*
Anxiety Disorders	0.028	0.077	0.097	0.078	130%		*
Asthma	0.060	0.117	0.128	0.118	114%		*
Autism	0.003	0.000	0.008	0.000	-84%	YES	
Bipolar Disorder	0.014	0.195	0.208	0.193	106%		*
Blindness and vision defects	0.150	0.261	0.281	0.260	118%		*
Cancer	0.014	0.026	0.035	0.026	161%		*
Cardiac dysrhythmias	0.027	0.080	0.083	0.080	105%		*

<b>Unison (All Ages, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Chronic obstructive pulmonary disease and bronchiectasis	0.059	0.144	0.171	0.144	126%		
Conduct Disorder	0.011	0.035	0.041	0.036	115%		*
Congestive heart failure; nonhypertensive	0.014	0.025	0.034	0.025	161%		*
Coronary atherosclerosis and other heart disease	0.023	0.050	0.065	0.050	147%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.010	0.014	0.020	0.014	224%		*
Depression	0.047	0.373	0.423	0.369	113%		
Developmental disorders	0.037	0.053	0.060	0.053	139%		*
Diabetes	0.061	0.165	0.204	0.165	130%		
Epilepsy; convulsions	0.019	0.041	0.050	0.041	135%		*
Esophageal disorders	0.027	0.073	0.097	0.072	143%		
Essential hypertension	0.083	0.253	0.278	0.249	114%		*
HIV infection	0.002	0.005	0.005	0.005	100%	YES	*
Intracranial injury	0.006	0.014	0.014	0.014	100%		*

Unison (All Ages, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.005	0.037	0.037	0.037	100%		*
Neoplasms of unspecified nature or uncertain behavior	0.035	0.080	0.087	0.081	112%		*
Obsessive-Compulsive Disorders	0.001	0.004	0.006	0.004	166%	YES	*
Osteoarthritis	0.031	0.098	0.109	0.097	114%		*
Other Developmental Disorder	0.003	0.001	0.018	0.001	-348%	YES	
Other nervous system disorders	0.062	0.167	0.180	0.166	111%		*
PTSD	0.005	0.027	0.031	0.027	114%		*
Pregnancy	0.040	0.028	0.028	0.028	100%		*
Psychotic Disorder	0.015	0.398	0.383	0.392	98%		*
Spondylosis; intervertebral disc disorders; other back	0.100	0.287	0.344	0.287	125%		
Substance-related disorders	0.019	0.087	0.090	0.087	103%		*
Thyroid disorders	0.021	0.056	0.070	0.055	133%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Unison (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	9.427	11.251	11.336	11.251	105%		*
Female	0.498	0.379	0.366	0.379	111%		*
White	0.710	0.540	0.587	0.540	73%		*
Black	0.256	0.400	0.370	0.400	80%		*
County: Adams	0.042	0.000	0.034	0.000	10%	YES	
County: Butler	0.341	0.000	0.391	0.000	-12%	YES	
County: Lawrence	0.071	0.000	0.055	0.000	12%	YES	
County: Lucas	0.450	1.000	0.451	1.000	0%	YES	
Medicaid Member Months	10.659	11.430	11.485	11.430	110%		*
MCP Member Months	9.662	9.217	8.860	9.217	175%		*
Dual Eligibility Member Months	0.003	0.013	0.004	0.013	-9%		*
Waiver Member Months	0.029	0.000	0.000	0.000	N/A		N/A
ABD Member Months	0.332	1.515	1.387	1.515	91%		*
CFC Member Months	10.318	9.902	10.094	9.902	55%		*

**Unison (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.105	16.187	19.545	16.187	115%		*
# ED Mental Health Visits	0.004	0.000	0.072	0.000	-244%		
# IP Mental Health Visits	0.002	0.017	0.055	0.017	223%		
13 or More Mental Health Rx	0.008	0.060	0.085	0.060	135%		*
ADHD	0.060	0.511	0.528	0.511	103%		*
Acute bronchitis	0.056	0.021	0.038	0.021	45%	YES	*
Alcohol-related disorders	0.001	0.000	0.000	0.000	N/A	YES	N/A
Anxiety Disorders	0.008	0.030	0.051	0.030	168%	YES	*
Asthma	0.075	0.128	0.085	0.128	21%		*
Autism	0.003	0.000	0.017	0.000	-124%	YES	
Bipolar Disorder	0.003	0.004	0.043	0.004	1557%	YES	
Blindness and vision defects	0.156	0.349	0.306	0.349	80%		*
Cancer	0.001	0.000	0.013	0.000	-200%	YES	*
Cardiac dysrhythmias	0.005	0.013	0.009	0.013	51%	YES	*

<b>Unison (Under 18, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Chronic obstructive pulmonary disease and bronchiectasis	0.024	0.017	0.030	0.017	-79%	YES	*
Conduct Disorder	0.021	0.234	0.209	0.234	91%		*
Congestive heart failure; nonhypertensive	0.000	0.000	0.000	0.000	N/A	YES	N/A
Coronary atherosclerosis and other heart disease	0.000	0.000	0.000	0.000	N/A	YES	N/A
Cystic fibrosis	0.001	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.004	0.004	0.004	100%	YES	*
Depression	0.016	0.132	0.213	0.132	148%		
Developmental disorders	0.050	0.081	0.123	0.081	213%		*
Diabetes	0.005	0.009	0.013	0.009	193%	YES	*
Epilepsy; convulsions	0.012	0.004	0.030	0.004	-121%	YES	
Esophageal disorders	0.009	0.004	0.017	0.004	-98%	YES	*
Essential hypertension	0.003	0.004	0.004	0.004	100%	YES	*
HIV infection	0.000	0.000	0.000	0.000	N/A	YES	N/A
Intracranial injury	0.005	0.009	0.009	0.009	100%	YES	*

**Unison (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.000	0.026	0.000	-232%	YES	
Neoplasms of unspecified nature or uncertain behavior	0.012	0.038	0.072	0.038	190%	YES	*
Obsessive-Compulsive Disorders	0.001	0.004	0.000	0.004	-22%	YES	*
Osteoarthritis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Other Developmental Disorder	0.005	0.009	0.055	0.009	798%	YES	
Other nervous system disorders	0.025	0.017	0.068	0.017	-341%	YES	
PTSD	0.004	0.017	0.051	0.017	251%	YES	
Pregnancy	0.003	0.009	0.004	0.009	32%	YES	*
Psychotic Disorder	0.002	0.009	0.021	0.009	218%	YES	*
Spondylosis; intervertebral disc disorders; other back	0.018	0.013	0.017	0.013	16%	YES	*
Substance-related disorders	0.004	0.026	0.021	0.026	84%	YES	*
Thyroid disorders	0.003	0.004	0.004	0.004	100%	YES	*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Unison (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	42.341	45.959	45.867	45.928	98%		*
Female	0.639	0.590	0.612	0.589	54%		*
White	0.742	0.562	0.614	0.570	76%		
Black	0.225	0.417	0.363	0.409	78%		
County: Adams	0.042	0.000	0.031	0.000	14%	YES	
County: Butler	0.268	0.000	0.357	0.000	-23%	YES	
County: Lawrence	0.076	0.000	0.082	0.000	-4%	YES	
County: Lucas	0.488	1.000	0.437	1.000	-11%	YES	N/A
Medicaid Member Months	8.527	10.893	11.237	10.862	125%		
MCP Member Months	5.146	6.539	6.429	6.445	99%		*
Dual Eligibility Member Months	0.506	0.596	0.749	0.604	249%		*
Waiver Member Months	0.631	0.580	0.632	0.594	24%		*
ABD Member Months	1.545	5.608	5.569	5.471	102%		*
CFC Member Months	4.371	2.210	2.361	2.259	95%		*

**Unison (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.040	22.562	18.303	20.940	91%		
# ED Mental Health Visits	0.018	0.144	0.156	0.139	111%		*
# IP Mental Health Visits	0.003	0.046	0.043	0.043	100%		*
13 or More Mental Health Rx	0.048	0.381	0.388	0.366	105%		*
ADHD	0.010	0.011	0.019	0.011	502%		*
Acute bronchitis	0.055	0.087	0.103	0.087	142%		*
Alcohol-related disorders	0.010	0.063	0.063	0.059	105%		*
Anxiety Disorders	0.044	0.085	0.122	0.085	171%		
Asthma	0.048	0.116	0.133	0.117	119%		*
Autism	0.002	0.000	0.004	0.000	-56%	YES	
Bipolar Disorder	0.023	0.227	0.257	0.219	114%		
Blindness and vision defects	0.146	0.247	0.277	0.244	130%		
Cancer	0.024	0.030	0.037	0.029	213%		*
Cardiac dysrhythmias	0.044	0.091	0.087	0.090	95%		*

**Unison (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.088	0.165	0.205	0.163	147%		
Conduct Disorder	0.003	0.003	0.019	0.002	4921%	YES	
Congestive heart failure; nonhypertensive	0.025	0.029	0.034	0.029	203%		*
Coronary atherosclerosis and other heart disease	0.042	0.058	0.070	0.059	158%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.017	0.015	0.022	0.016	-332%		*
Depression	0.072	0.412	0.480	0.404	118%		
Developmental disorders	0.027	0.048	0.047	0.047	100%		*
Diabetes	0.106	0.191	0.218	0.193	126%		*
Epilepsy; convulsions	0.025	0.047	0.059	0.047	146%		*
Esophageal disorders	0.041	0.084	0.090	0.082	114%		*
Essential hypertension	0.147	0.294	0.324	0.288	122%		
HIV infection	0.003	0.006	0.008	0.006	132%	YES	*
Intracranial injury	0.007	0.015	0.018	0.015	127%		*

**Unison (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.007	0.043	0.047	0.042	112%		*
Neoplasms of unspecified nature or uncertain behavior	0.053	0.087	0.100	0.087	135%		*
Obsessive-Compulsive Disorders	0.001	0.003	0.004	0.004	128%	YES	*
Osteoarthritis	0.055	0.114	0.131	0.111	129%		*
Other Developmental Disorder	0.001	0.000	0.002	0.000	-47%	YES	*
Other nervous system disorders	0.091	0.191	0.204	0.191	112%		*
PTSD	0.005	0.029	0.021	0.027	79%		*
Pregnancy	0.070	0.031	0.038	0.030	76%		*
Psychotic Disorder	0.025	0.462	0.434	0.448	98%		*
Spondylosis; intervertebral disc disorders; other back	0.166	0.332	0.376	0.329	125%		*
Substance-related disorders	0.032	0.097	0.103	0.092	113%		*
Thyroid disorders	0.035	0.064	0.073	0.062	134%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Unison (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	29.433	42.518	41.051	41.751	95%		*
Female	0.566	0.554	0.549	0.557	162%		*
White	0.773	0.558	0.590	0.592	101%		*
Black	0.201	0.417	0.377	0.381	98%		*
County: Adams	0.028	0.000	0.021	0.000	15%	YES	
County: Butler	0.394	0.000	0.440	0.000	-10%	YES	
County: Lawrence	0.063	0.000	0.045	0.000	17%	YES	
County: Lucas	0.392	1.000	0.409	1.000	3%	YES	N/A
Medicaid Member Months	11.345	11.477	11.436	11.446	92%		*
MCP Member Months	7.691	7.123	6.875	6.880	101%		*
Dual Eligibility Member Months	0.418	0.557	0.563	0.587	84%		*
Waiver Member Months	0.540	0.572	0.507	0.604	-200%		*
ABD Member Months	2.324	5.699	5.156	5.282	97%		*
CFC Member Months	6.993	2.857	3.247	3.064	95%		*

**Unison (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	15.681	26.069	24.497	23.658	107%		*
# ED Mental Health Visits	0.095	0.146	0.163	0.144	133%		*
# IP Mental Health Visits	0.029	0.050	0.046	0.045	107%		*
13 or More Mental Health Rx	0.167	0.394	0.351	0.360	97%		*
ADHD	0.164	0.094	0.115	0.101	78%		*
Acute bronchitis	0.080	0.084	0.081	0.087	-17%		*
Alcohol-related disorders	0.027	0.062	0.049	0.061	69%		*
Anxiety Disorders	0.141	0.084	0.093	0.088	91%		*
Asthma	0.090	0.126	0.118	0.129	69%		*
Autism	0.009	0.000	0.005	0.000	26%	YES	
Bipolar Disorder	0.141	0.234	0.240	0.233	107%		*
Blindness and vision defects	0.249	0.280	0.265	0.280	53%		*
Cancer	0.019	0.029	0.036	0.026	187%		*
Cardiac dysrhythmias	0.046	0.089	0.076	0.083	85%		*

**Unison (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.099	0.159	0.147	0.159	81%		*
Conduct Disorder	0.113	0.043	0.050	0.045	90%		*
Congestive heart failure; nonhypertensive	0.017	0.026	0.026	0.026	100%		*
Coronary atherosclerosis and other heart disease	0.026	0.054	0.045	0.053	75%		*
Cystic fibrosis	0.001	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.016	0.014	0.014	0.015	198%		*
Depression	0.385	0.435	0.435	0.443	83%		*
Developmental disorders	0.089	0.059	0.067	0.063	84%		*
Diabetes	0.101	0.185	0.164	0.184	78%		*
Epilepsy; convulsions	0.041	0.045	0.043	0.048	-11%		*
Esophageal disorders	0.053	0.079	0.063	0.079	40%		*
Essential hypertension	0.135	0.280	0.258	0.265	96%		*
HIV infection	0.002	0.006	0.005	0.005	100%	YES	*
Intracranial injury	0.013	0.015	0.010	0.015	-193%		*

Unison (All Ages, CMHC Experience)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.046	0.043	0.039	0.043	196%		*
Neoplasms of unspecified nature or uncertain behavior	0.074	0.087	0.083	0.089	53%		*
Obsessive-Compulsive Disorders	0.005	0.004	0.006	0.004	-153%	YES	*
Osteoarthritis	0.052	0.108	0.104	0.104	100%		*
Other Developmental Disorder	0.031	0.001	0.023	0.002	16%	YES	
Other nervous system disorders	0.133	0.184	0.179	0.186	88%		*
PTSD	0.058	0.032	0.029	0.035	129%		*
Pregnancy	0.048	0.022	0.021	0.023	111%		*
Psychotic Disorder	0.135	0.474	0.462	0.439	106%		*
Spondylosis; intervertebral disc disorders; other back	0.205	0.306	0.285	0.302	85%		*
Substance-related disorders	0.112	0.096	0.100	0.098	90%		*
Thyroid disorders	0.042	0.061	0.056	0.060	81%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Unison (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.568	33.961	39.092	33.961	179%		
Female	0.577	0.592	0.613	0.592	240%		*
White	0.724	0.564	0.610	0.564	72%		*
Black	0.241	0.404	0.340	0.404	63%		*
County: Adams	0.043	0.000	0.060	0.000	-20%	YES	
County: Butler	0.293	0.000	0.262	0.000	7%	YES	
County: Lawrence	0.075	0.000	0.078	0.000	-3%	YES	
County: Lucas	0.477	1.000	0.511	1.000	7%	YES	
Medicaid Member Months	9.339	8.465	9.918	8.465	-86%		
MCP Member Months	7.117	5.901	5.755	5.901	112%		*
Dual Eligibility Member Months	0.272	0.298	0.610	0.298	1074%		*
Waiver Member Months	0.350	0.135	0.163	0.135	82%		*
ABD Member Months	0.909	1.748	1.752	1.748	100%		*
CFC Member Months	7.019	5.440	5.309	5.440	109%		*

**Unison (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.000	0.000	0.000	0.000	N/A	YES	N/A
# ED Mental Health Visits	0.006	0.011	0.018	0.011	209%		*
# IP Mental Health Visits	0.001	0.000	0.000	0.000	N/A		N/A
13 or More Mental Health Rx	0.021	0.050	0.060	0.050	130%		*
ADHD	0.023	0.021	0.011	0.021	1051%	YES	*
Acute bronchitis	0.054	0.046	0.106	0.046	-551%		
Alcohol-related disorders	0.004	0.018	0.025	0.018	138%	YES	*
Anxiety Disorders	0.020	0.043	0.078	0.043	212%		*
Asthma	0.057	0.074	0.085	0.074	157%		*
Autism	0.002	0.000	0.000	0.000	N/A	YES	N/A
Bipolar Disorder	0.005	0.004	0.011	0.004	-353%	YES	*
Blindness and vision defects	0.143	0.170	0.188	0.170	161%		*
Cancer	0.013	0.011	0.043	0.011	-683%	YES	
Cardiac dysrhythmias	0.025	0.039	0.071	0.039	281%		*

**Unison (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.056	0.071	0.149	0.071	523%		
Conduct Disorder	0.003	0.000	0.000	0.000	N/A	YES	N/A
Congestive heart failure; nonhypertensive	0.014	0.021	0.039	0.021	277%	YES	*
Coronary atherosclerosis and other heart disease	0.023	0.028	0.053	0.028	463%	YES	*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.009	0.011	0.032	0.011	1141%	YES	*
Depression	0.022	0.067	0.103	0.067	158%		*
Developmental disorders	0.033	0.021	0.025	0.021	68%	YES	*
Diabetes	0.058	0.071	0.142	0.071	532%		
Epilepsy; convulsions	0.018	0.018	0.050	0.018	652398%	YES	
Esophageal disorders	0.025	0.043	0.092	0.043	307%		
Essential hypertension	0.079	0.117	0.195	0.117	268%		
HIV infection	0.002	0.004	0.007	0.004	220%	YES	*
Intracranial injury	0.005	0.011	0.011	0.011	100%	YES	*

Unison (All Ages, No CMHC Experience)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.007	0.000	0.007	-47%	YES	*
Neoplasms of unspecified nature or uncertain behavior	0.032	0.050	0.092	0.050	286%		
Obsessive-Compulsive Disorders	0.001	0.000	0.004	0.000	-117%	YES	*
Osteoarthritis	0.029	0.046	0.064	0.046	187%		*
Other Developmental Disorder	0.001	0.000	0.000	0.000	N/A	YES	N/A
Other nervous system disorders	0.057	0.082	0.160	0.082	344%		
PTSD	0.001	0.000	0.004	0.000	-84%	YES	*
Pregnancy	0.040	0.060	0.082	0.060	188%		*
Psychotic Disorder	0.006	0.028	0.032	0.028	112%	YES	*
Spondylosis; intervertebral disc disorders; other back	0.092	0.191	0.280	0.191	173%		
Substance-related disorders	0.012	0.043	0.032	0.043	70%		*
Thyroid disorders	0.019	0.028	0.018	0.028	-21%	YES	*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Zepf (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.695	32.870	35.837	32.878	160%		
Female	0.576	0.544	0.560	0.544	52%		*
White	0.727	0.531	0.597	0.531	68%		
Black	0.239	0.453	0.384	0.453	70%		
County: Adams	0.042	0.000	0.022	0.000	27%	YES	
County: Butler	0.300	0.000	0.380	0.000	-20%	YES	N/A
County: Lawrence	0.074	0.000	0.074	0.000	0%	YES	
County: Lucas	0.471	0.999	0.442	0.999	-6%	YES	N/A
Medicaid Member Months	9.475	11.011	11.145	11.011	113%		
MCP Member Months	7.156	7.172	6.717	7.174	-2792%		
Dual Eligibility Member Months	0.282	0.429	0.573	0.429	185%		
Waiver Member Months	0.363	0.499	0.539	0.499	127%		*
ABD Member Months	1.005	4.076	4.317	4.073	106%		*
CFC Member Months	7.018	4.874	4.322	4.876	126%		

**Zepf (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.069	27.499	23.998	27.463	91%		
# ED Mental Health Visits	0.012	0.084	0.110	0.084	127%		
# IP Mental Health Visits	0.003	0.042	0.042	0.042	99%		*
13 or More Mental Health Rx	0.031	0.270	0.274	0.270	101%		*
ADHD	0.032	0.172	0.179	0.172	104%		*
Acute bronchitis	0.056	0.060	0.075	0.060	381%		
Alcohol-related disorders	0.006	0.026	0.031	0.026	118%		*
Anxiety Disorders	0.028	0.056	0.077	0.056	162%		
Asthma	0.060	0.117	0.126	0.117	113%		*
Autism	0.003	0.004	0.005	0.004	175%		*
Bipolar Disorder	0.014	0.157	0.177	0.157	110%		
Blindness and vision defects	0.150	0.237	0.273	0.237	137%		
Cancer	0.014	0.015	0.021	0.015	515%		*
Cardiac dysrhythmias	0.027	0.064	0.070	0.064	113%		*

**Zepf (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.059	0.096	0.112	0.096	138%		
Conduct Disorder	0.011	0.088	0.096	0.088	108%		*
Congestive heart failure; nonhypertensive	0.014	0.018	0.019	0.018	140%		*
Coronary atherosclerosis and other heart disease	0.023	0.029	0.038	0.029	227%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.010	0.011	0.015	0.011	466%		*
Depression	0.047	0.347	0.422	0.346	119%		
Developmental disorders	0.037	0.080	0.081	0.080	101%		*
Diabetes	0.061	0.120	0.143	0.120	133%		
Epilepsy; convulsions	0.019	0.039	0.044	0.039	121%		*
Esophageal disorders	0.027	0.058	0.069	0.058	131%		*
Essential hypertension	0.083	0.177	0.211	0.178	129%		
HIV infection	0.002	0.004	0.005	0.004	138%		*
Intracranial injury	0.006	0.014	0.019	0.014	151%		*

<b>Zepf (All Ages, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Mental Disorder Not Otherwise Specified (NOS)	0.005	0.020	0.029	0.020	143%		
Neoplasms of unspecified nature or uncertain behavior	0.035	0.073	0.088	0.073	132%		
Obsessive-Compulsive Disorders	0.001	0.002	0.005	0.002	292%	YES	*
Osteoarthritis	0.031	0.073	0.080	0.073	115%		*
Other Developmental Disorder	0.003	0.027	0.026	0.027	98%		*
Other nervous system disorders	0.062	0.127	0.152	0.126	133%		
PTSD	0.005	0.034	0.038	0.034	112%		*
Pregnancy	0.040	0.029	0.037	0.029	30%		*
Psychotic Disorder	0.015	0.282	0.306	0.282	107%		
Spondylosis; intervertebral disc disorders; other back	0.100	0.207	0.249	0.207	133%		
Substance-related disorders	0.019	0.051	0.058	0.051	118%		*
Thyroid disorders	0.021	0.038	0.052	0.038	166%		

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Zepf (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	9.427	12.142	12.329	12.151	107%		*
Female	0.498	0.404	0.364	0.407	147%		
White	0.710	0.495	0.553	0.499	76%		
Black	0.256	0.487	0.425	0.484	76%		
County: Adams	0.042	0.000	0.018	0.000	36%	YES	
County: Butler	0.341	0.000	0.416	0.000	-17%	YES	
County: Lawrence	0.071	0.000	0.075	0.000	-3%	YES	
County: Lucas	0.450	0.998	0.422	0.998	-6%	YES	
Medicaid Member Months	10.659	11.296	11.337	11.289	110%		*
MCP Member Months	9.662	8.722	8.073	8.760	168%		
Dual Eligibility Member Months	0.003	0.005	0.008	0.005	309%		*
Waiver Member Months	0.029	0.005	0.015	0.005	41%		*
ABD Member Months	0.332	1.739	2.100	1.709	121%		
CFC Member Months	10.318	9.551	9.228	9.574	141%		*

**Zepf (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.105	34.967	30.944	33.991	94%		*
# ED Mental Health Visits	0.004	0.033	0.055	0.033	148%		
# IP Mental Health Visits	0.002	0.047	0.048	0.044	107%		*
13 or More Mental Health Rx	0.008	0.142	0.137	0.140	98%		*
ADHD	0.060	0.460	0.518	0.455	112%		
Acute bronchitis	0.056	0.023	0.031	0.023	72%		*
Alcohol-related disorders	0.001	0.009	0.004	0.008	55%	YES	*
Anxiety Disorders	0.008	0.031	0.052	0.031	162%		
Asthma	0.075	0.116	0.145	0.116	162%		
Autism	0.003	0.009	0.010	0.009	115%	YES	*
Bipolar Disorder	0.003	0.053	0.057	0.053	106%		*
Blindness and vision defects	0.156	0.258	0.283	0.260	121%		*
Cancer	0.001	0.000	0.001	0.000	18%	YES	*
Cardiac dysrhythmias	0.005	0.024	0.024	0.022	108%		*

**Zepf (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.024	0.012	0.024	0.012	-4%		
Conduct Disorder	0.021	0.231	0.273	0.226	116%		
Congestive heart failure; nonhypertensive	0.000	0.000	0.000	0.000	N/A	YES	N/A
Coronary atherosclerosis and other heart disease	0.000	0.000	0.000	0.000	N/A	YES	N/A
Cystic fibrosis	0.001	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.005	0.006	0.004	139%	YES	*
Depression	0.016	0.208	0.248	0.204	117%		
Developmental disorders	0.050	0.133	0.170	0.132	137%		
Diabetes	0.005	0.011	0.017	0.011	177%		*
Epilepsy; convulsions	0.012	0.031	0.032	0.031	104%		*
Esophageal disorders	0.009	0.010	0.011	0.010	547%	YES	*
Essential hypertension	0.003	0.006	0.013	0.006	246%	YES	*
HIV infection	0.000	0.000	0.001	0.000	-171%	YES	*
Intracranial injury	0.005	0.007	0.012	0.007	316%	YES	*

<b>Zepf (Under 18, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.007	0.020	0.007	281%	YES	
Neoplasms of unspecified nature or uncertain behavior	0.012	0.049	0.075	0.049	151%		
Obsessive-Compulsive Disorders	0.001	0.004	0.004	0.004	100%	YES	*
Osteoarthritis	0.000	0.000	0.001	0.000	-52%	YES	*
Other Developmental Disorder	0.005	0.069	0.076	0.066	111%		*
Other nervous system disorders	0.025	0.046	0.059	0.047	146%		*
PTSD	0.004	0.072	0.074	0.071	103%		*
Pregnancy	0.003	0.009	0.004	0.009	23%	YES	*
Psychotic Disorder	0.002	0.015	0.020	0.016	121%		*
Spondylosis; intervertebral disc disorders; other back	0.018	0.027	0.045	0.027	253%		
Substance-related disorders	0.004	0.030	0.042	0.029	134%		*
Thyroid disorders	0.003	0.006	0.012	0.006	271%	YES	*

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Zepf (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	42.341	43.815	44.023	43.823	115%		*
Female	0.639	0.618	0.632	0.617	33%		*
White	0.742	0.550	0.622	0.552	65%		
Black	0.225	0.434	0.363	0.433	69%		
County: Adams	0.042	0.000	0.024	0.000	25%	YES	
County: Butler	0.268	0.000	0.364	0.000	-25%	YES	
County: Lawrence	0.076	0.000	0.076	0.000	0%	YES	
County: Lucas	0.488	1.000	0.447	1.000	-9%	YES	N/A
Medicaid Member Months	8.527	10.860	11.214	10.854	124%		
MCP Member Months	5.146	6.353	6.129	6.333	83%		*
Dual Eligibility Member Months	0.506	0.652	0.818	0.646	207%		
Waiver Member Months	0.631	0.759	0.751	0.758	95%		*
ABD Member Months	1.545	5.309	5.301	5.279	100%		*
CFC Member Months	4.371	2.404	2.394	2.419	101%		*

**Zepf (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.040	23.556	20.112	23.252	91%		
# ED Mental Health Visits	0.018	0.111	0.132	0.110	119%		*
# IP Mental Health Visits	0.003	0.039	0.043	0.038	111%		*
13 or More Mental Health Rx	0.048	0.337	0.350	0.334	104%		*
ADHD	0.010	0.019	0.026	0.019	151%		*
Acute bronchitis	0.055	0.080	0.088	0.079	129%		*
Alcohol-related disorders	0.010	0.036	0.045	0.035	128%		*
Anxiety Disorders	0.044	0.069	0.089	0.069	166%		
Asthma	0.048	0.118	0.134	0.118	119%		*
Autism	0.002	0.002	0.006	0.002	-1104%	YES	
Bipolar Disorder	0.023	0.213	0.249	0.211	115%		
Blindness and vision defects	0.146	0.226	0.249	0.224	129%		*
Cancer	0.024	0.023	0.027	0.023	-368%		*
Cardiac dysrhythmias	0.044	0.086	0.107	0.086	141%		

**Zepf (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.088	0.141	0.166	0.141	142%		
Conduct Disorder	0.003	0.012	0.017	0.012	138%		*
Congestive heart failure; nonhypertensive	0.025	0.027	0.029	0.027	188%		*
Coronary atherosclerosis and other heart disease	0.042	0.045	0.045	0.045	85%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.017	0.014	0.018	0.014	-52%		*
Depression	0.072	0.420	0.510	0.418	121%		
Developmental disorders	0.027	0.052	0.057	0.052	115%		*
Diabetes	0.106	0.178	0.185	0.177	110%		*
Epilepsy; convulsions	0.025	0.043	0.055	0.043	156%		*
Esophageal disorders	0.041	0.083	0.088	0.084	109%		*
Essential hypertension	0.147	0.268	0.296	0.267	122%		
HIV infection	0.003	0.006	0.006	0.006	100%		*
Intracranial injury	0.007	0.018	0.018	0.018	100%		*

Zepf (18 and Over, All CMHC) Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.007	0.027	0.031	0.027	116%		*
Neoplasms of unspecified nature or uncertain behavior	0.053	0.086	0.092	0.086	117%		*
Obsessive-Compulsive Disorders	0.001	0.001	0.008	0.001	-708%	YES	
Osteoarthritis	0.055	0.111	0.114	0.111	105%		*
Other Developmental Disorder	0.001	0.005	0.005	0.005	100%	YES	*
Other nervous system disorders	0.091	0.169	0.206	0.169	140%		
PTSD	0.005	0.013	0.017	0.013	141%		*
Pregnancy	0.070	0.040	0.036	0.040	116%		*
Psychotic Disorder	0.025	0.422	0.431	0.418	102%		*
Spondylosis; intervertebral disc disorders; other back	0.166	0.302	0.339	0.301	125%		
Substance-related disorders	0.032	0.063	0.075	0.063	133%		*
Thyroid disorders	0.035	0.055	0.064	0.054	141%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Zepf (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	29.433	34.873	35.192	34.554	112%		*
Female	0.566	0.544	0.552	0.544	65%		*
White	0.773	0.541	0.575	0.563	95%		*
Black	0.201	0.444	0.412	0.422	96%		*
County: Adams	0.028	0.000	0.015	0.000	28%	YES	
County: Butler	0.394	0.000	0.444	0.000	-11%	YES	N/A
County: Lawrence	0.063	0.000	0.052	0.000	9%	YES	
County: Lucas	0.392	1.000	0.417	1.000	5%	YES	N/A
Medicaid Member Months	11.345	11.546	11.530	11.525	103%		*
MCP Member Months	7.691	7.237	6.971	7.178	144%		*
Dual Eligibility Member Months	0.418	0.509	0.599	0.513	186%		*
Waiver Member Months	0.540	0.581	0.578	0.588	78%		*
ABD Member Months	2.324	4.722	4.466	4.490	99%		*
CFC Member Months	6.993	4.407	4.362	4.571	108%		*

**Zepf (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	15.681	34.223	32.332	32.689	99%		*
# ED Mental Health Visits	0.095	0.099	0.110	0.100	343%		*
# IP Mental Health Visits	0.029	0.051	0.051	0.049	107%		*
13 or More Mental Health Rx	0.167	0.328	0.311	0.311	100%		*
ADHD	0.164	0.203	0.195	0.203	79%		*
Acute bronchitis	0.080	0.067	0.064	0.069	140%		*
Alcohol-related disorders	0.027	0.030	0.031	0.030	151%		*
Anxiety Disorders	0.141	0.063	0.067	0.066	98%		*
Asthma	0.090	0.122	0.118	0.117	103%		*
Autism	0.009	0.005	0.007	0.005	23%		*
Bipolar Disorder	0.141	0.194	0.195	0.194	102%		*
Blindness and vision defects	0.249	0.255	0.253	0.258	28%		*
Cancer	0.019	0.017	0.022	0.017	-132%		*
Cardiac dysrhythmias	0.046	0.070	0.063	0.067	82%		*

**Zepf (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.099	0.110	0.117	0.113	139%		*
Conduct Disorder	0.113	0.108	0.108	0.109	117%		*
Congestive heart failure; nonhypertensive	0.017	0.021	0.019	0.020	69%		*
Coronary atherosclerosis and other heart disease	0.026	0.034	0.028	0.034	22%		*
Cystic fibrosis	0.001	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.016	0.011	0.011	0.010	59%		*
Depression	0.385	0.423	0.432	0.424	122%		*
Developmental disorders	0.089	0.090	0.087	0.091	-134%		*
Diabetes	0.101	0.140	0.144	0.139	113%		*
Epilepsy; convulsions	0.041	0.044	0.046	0.044	155%		*
Esophageal disorders	0.053	0.067	0.069	0.066	118%		*
Essential hypertension	0.135	0.205	0.207	0.202	107%		*
HIV infection	0.002	0.005	0.006	0.005	133%		*
Intracranial injury	0.013	0.016	0.017	0.015	180%		*

**Zepf (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.046	0.023	0.026	0.024	86%		*
Neoplasms of unspecified nature or uncertain behavior	0.074	0.081	0.080	0.081	83%		*
Obsessive-Compulsive Disorders	0.005	0.002	0.006	0.002	-7%	YES	*
Osteoarthritis	0.052	0.085	0.081	0.080	101%		*
Other Developmental Disorder	0.031	0.033	0.031	0.034	-9%		*
Other nervous system disorders	0.133	0.141	0.137	0.140	54%		*
PTSD	0.058	0.042	0.038	0.043	129%		*
Pregnancy	0.048	0.026	0.025	0.027	109%		*
Psychotic Disorder	0.135	0.347	0.344	0.326	107%		*
Spondylosis; intervertebral disc disorders; other back	0.205	0.233	0.241	0.231	134%		*
Substance-related disorders	0.112	0.060	0.057	0.061	109%		*
Thyroid disorders	0.042	0.045	0.047	0.045	200%		*

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Zepf (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.568	24.677	31.752	24.677	-164%		
Female	0.577	0.545	0.567	0.545	31%		*
White	0.724	0.492	0.499	0.492	97%		*
Black	0.241	0.487	0.453	0.487	87%		*
County: Adams	0.043	0.000	0.041	0.000	2%	YES	
County: Butler	0.293	0.000	0.250	0.000	10%	YES	
County: Lawrence	0.075	0.000	0.066	0.000	6%	YES	
County: Lucas	0.477	0.997	0.564	0.997	16%	YES	
Medicaid Member Months	9.339	8.823	9.801	8.823	-111%		
MCP Member Months	7.117	6.903	6.241	6.903	420%		
Dual Eligibility Member Months	0.272	0.098	0.258	0.098	-2%		
Waiver Member Months	0.350	0.163	0.479	0.163	-51%		
ABD Member Months	0.909	1.433	2.868	1.433	316%		
CFC Member Months	7.019	6.784	5.669	6.784	589%		

**Zepf (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.000	0.000	0.000	0.000	N/A	YES	N/A
# ED Mental Health Visits	0.006	0.022	0.025	0.022	116%		*
# IP Mental Health Visits	0.001	0.003	0.005	0.003	141%		*
13 or More Mental Health Rx	0.021	0.034	0.068	0.034	289%		
ADHD	0.023	0.044	0.054	0.044	139%		*
Acute bronchitis	0.054	0.032	0.046	0.032	34%		*
Alcohol-related disorders	0.004	0.012	0.008	0.012	61%	YES	*
Anxiety Disorders	0.020	0.027	0.054	0.027	373%		
Asthma	0.057	0.097	0.119	0.097	148%		*
Autism	0.002	0.000	0.007	0.000	-81%	YES	
Bipolar Disorder	0.005	0.008	0.012	0.008	173%	YES	*
Blindness and vision defects	0.143	0.161	0.258	0.161	564%		
Cancer	0.013	0.008	0.017	0.008	-60%	YES	*
Cardiac dysrhythmias	0.025	0.042	0.071	0.042	232%		

**Zepf (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.056	0.041	0.092	0.041	-182%		
Conduct Disorder	0.003	0.003	0.005	0.003	522%	YES	*
Congestive heart failure; nonhypertensive	0.014	0.003	0.032	0.003	-97%	YES	
Coronary atherosclerosis and other heart disease	0.023	0.012	0.037	0.012	-96%	YES	
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.009	0.008	0.012	0.008	-328%	YES	*
Depression	0.022	0.036	0.073	0.036	308%		
Developmental disorders	0.033	0.039	0.048	0.039	239%		*
Diabetes	0.058	0.039	0.087	0.039	-125%		
Epilepsy; convulsions	0.018	0.017	0.048	0.017	-2927%	YES	
Esophageal disorders	0.025	0.019	0.061	0.019	-393%		
Essential hypertension	0.079	0.063	0.127	0.063	-252%		
HIV infection	0.002	0.000	0.005	0.000	-84%	YES	*
Intracranial injury	0.005	0.007	0.007	0.007	100%	YES	*

**Zepf (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.005	0.005	0.005	100%	YES	*
Neoplasms of unspecified nature or uncertain behavior	0.032	0.039	0.066	0.039	419%		
Obsessive-Compulsive Disorders	0.001	0.002	0.002	0.002	100%	YES	*
Osteoarthritis	0.029	0.024	0.073	0.024	-594%		
Other Developmental Disorder	0.001	0.000	0.002	0.000	-39%	YES	*
Other nervous system disorders	0.057	0.070	0.139	0.070	525%		
PTSD	0.001	0.002	0.000	0.002	-237%	YES	*
Pregnancy	0.040	0.041	0.063	0.041	1929%		*
Psychotic Disorder	0.006	0.014	0.010	0.014	58%	YES	*
Spondylosis; intervertebral disc disorders; other back	0.092	0.098	0.199	0.098	1459%		
Substance-related disorders	0.012	0.017	0.024	0.017	229%	YES	*
Thyroid disorders	0.019	0.010	0.036	0.010	-123%	YES	

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Pharmacist on Site (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.695	19.449	23.517	19.493	45%		N/A
Female	0.576	0.471	0.468	0.470	102%		*
White	0.727	0.589	0.637	0.589	67%		
Black	0.239	0.392	0.344	0.391	71%		
County: Adams	0.042	0.000	0.000	0.000	N/A	YES	N/A
County: Butler	0.300	0.196	0.265	0.197	33%		
County: Lawrence	0.074	0.000	0.000	0.000	N/A	YES	N/A
County: Lucas	0.471	0.804	0.735	0.803	78%		
Medicaid Member Months	9.475	11.197	11.320	11.192	111%		
MCP Member Months	7.156	8.408	7.900	8.412	58%		
Dual Eligibility Member Months	0.282	0.177	0.314	0.178	-26%		
Waiver Member Months	0.363	0.198	0.340	0.199	14%		
ABD Member Months	1.005	2.408	2.890	2.391	130%		
CFC Member Months	7.018	8.107	7.298	8.114	25%		

**Pharmacist on Site (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.069	18.412	15.930	18.181	91%		
# ED Mental Health Visits	0.012	0.055	0.075	0.055	136%		
# IP Mental Health Visits	0.003	0.032	0.029	0.032	92%		*
13 or More Mental Health Rx	0.031	0.146	0.175	0.146	119%		
ADHD	0.032	0.257	0.281	0.254	109%		
Acute bronchitis	0.056	0.053	0.073	0.052	-659%		
Alcohol-related disorders	0.006	0.007	0.012	0.007	395%		*
Anxiety Disorders	0.028	0.066	0.100	0.066	168%		
Asthma	0.060	0.139	0.152	0.137	115%		*
Autism	0.003	0.016	0.022	0.016	132%		*
Bipolar Disorder	0.014	0.063	0.076	0.062	121%		
Blindness and vision defects	0.150	0.281	0.335	0.280	137%		
Cancer	0.014	0.012	0.018	0.012	-207%		*
Cardiac dysrhythmias	0.027	0.030	0.044	0.030	518%		

**Pharmacist on Site (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.059	0.053	0.082	0.053	-336%		
Conduct Disorder	0.011	0.181	0.187	0.178	104%		*
Congestive heart failure; nonhypertensive	0.014	0.005	0.008	0.005	54%		*
Coronary atherosclerosis and other heart disease	0.023	0.011	0.019	0.011	29%		
Cystic fibrosis	0.000	0.000	0.001	0.000	-479%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.010	0.004	0.007	0.004	48%		*
Depression	0.047	0.203	0.275	0.203	135%		
Developmental disorders	0.037	0.122	0.138	0.121	116%		
Diabetes	0.061	0.060	0.085	0.061	-4956%		
Epilepsy; convulsions	0.019	0.035	0.049	0.035	173%		
Esophageal disorders	0.027	0.032	0.048	0.032	387%		
Essential hypertension	0.083	0.070	0.106	0.070	-158%		
HIV infection	0.002	0.002	0.004	0.002	5490%	YES	*
Intracranial injury	0.006	0.010	0.011	0.010	121%		*

**Pharmacist on Site (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.005	0.013	0.022	0.013	167%		
Neoplasms of unspecified nature or uncertain behavior	0.035	0.061	0.083	0.060	173%		
Obsessive-Compulsive Disorders	0.001	0.003	0.005	0.003	155%	YES	*
Osteoarthritis	0.031	0.028	0.045	0.028	-572%		
Other Developmental Disorder	0.003	0.069	0.069	0.069	100%		*
Other nervous system disorders	0.062	0.098	0.144	0.098	205%		
PTSD	0.005	0.030	0.042	0.030	135%		
Pregnancy	0.040	0.016	0.021	0.016	73%		*
Psychotic Disorder	0.015	0.071	0.099	0.071	136%		
Spondylosis; intervertebral disc disorders; other back	0.100	0.120	0.172	0.120	337%		
Substance-related disorders	0.019	0.020	0.034	0.020	2272%		
Thyroid disorders	0.021	0.021	0.028	0.022	1785%		*

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**No Pharmacist on Site (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.695	35.522	37.392	34.839	134%		
Female	0.576	0.557	0.564	0.559	76%		*
White	0.727	0.670	0.732	0.684	15%		
Black	0.239	0.313	0.250	0.299	34%		
County: Adams	0.042	0.050	0.060	0.053	170%		*
County: Butler	0.300	0.000	0.189	0.000	26%	YES	
County: Lawrence	0.074	0.094	0.120	0.099	190%		
County: Lucas	0.471	0.695	0.579	0.669	60%		
Medicaid Member Months	9.475	11.032	11.154	10.926	120%		
MCP Member Months	7.156	7.314	6.752	7.220	-195%		
Dual Eligibility Member Months	0.282	0.422	0.555	0.430	177%		
Waiver Member Months	0.363	0.596	0.753	0.601	156%		
ABD Member Months	1.005	4.473	4.255	4.073	104%		*
CFC Member Months	7.018	4.457	4.326	4.734	116%		

**No Pharmacist on Site (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.069	22.684	16.078	18.404	92%		
# ED Mental Health Visits	0.012	0.091	0.099	0.085	114%		*
# IP Mental Health Visits	0.003	0.034	0.033	0.031	104%		*
13 or More Mental Health Rx	0.031	0.303	0.269	0.263	102%		*
ADHD	0.032	0.144	0.166	0.141	117%		
Acute bronchitis	0.056	0.092	0.101	0.092	123%		*
Alcohol-related disorders	0.006	0.029	0.031	0.026	118%		*
Anxiety Disorders	0.028	0.091	0.117	0.091	132%		
Asthma	0.060	0.118	0.117	0.114	104%		*
Autism	0.003	0.003	0.005	0.004	224%		*
Bipolar Disorder	0.014	0.159	0.159	0.141	109%		
Blindness and vision defects	0.150	0.258	0.273	0.251	119%		
Cancer	0.014	0.020	0.028	0.019	222%		
Cardiac dysrhythmias	0.027	0.067	0.070	0.060	121%		

**No Pharmacist on Site (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.059	0.142	0.163	0.137	126%		
Conduct Disorder	0.011	0.073	0.088	0.070	120%		
Congestive heart failure; nonhypertensive	0.014	0.022	0.025	0.022	130%		*
Coronary atherosclerosis and other heart disease	0.023	0.045	0.054	0.045	134%		
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.010	0.012	0.015	0.013	162%		*
Depression	0.047	0.351	0.402	0.332	118%		
Developmental disorders	0.037	0.065	0.073	0.063	133%		
Diabetes	0.061	0.147	0.158	0.137	121%		
Epilepsy; convulsions	0.019	0.042	0.048	0.041	127%		*
Esophageal disorders	0.027	0.071	0.081	0.067	126%		
Essential hypertension	0.083	0.211	0.232	0.198	122%		
HIV infection	0.002	0.003	0.004	0.003	155%		*
Intracranial injury	0.006	0.014	0.016	0.013	129%		*

**No Pharmacist on Site (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.005	0.030	0.031	0.029	108%		*
Neoplasms of unspecified nature or uncertain behavior	0.035	0.087	0.104	0.085	130%		
Obsessive-Compulsive Disorders	0.001	0.008	0.010	0.008	123%		*
Osteoarthritis	0.031	0.084	0.095	0.077	128%		
Other Developmental Disorder	0.003	0.014	0.014	0.014	102%		*
Other nervous system disorders	0.062	0.139	0.153	0.131	124%		
PTSD	0.005	0.031	0.034	0.029	113%		*
Pregnancy	0.040	0.027	0.031	0.028	78%		*
Psychotic Disorder	0.015	0.278	0.232	0.232	100%		*
Spondylosis; intervertebral disc disorders; other back	0.100	0.250	0.278	0.240	122%		
Substance-related disorders	0.019	0.064	0.074	0.062	122%		
Thyroid disorders	0.021	0.056	0.062	0.053	120%		

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Lucas County (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.809	28.711	29.781	27.162	403%		
Female	0.580	0.508	0.518	0.518	99%		*
White	0.568	0.537	0.558	0.540	42%		*
Black	0.395	0.444	0.420	0.437	64%		*
County: Adams	0.000	0.000	0.000	0.000	N/A		N/A
County: Butler	0.000	0.000	0.000	0.000	N/A		N/A
County: Lawrence	0.000	0.000	0.000	0.000	N/A		N/A
County: Lucas	1.000	1.000	1.000	1.000	N/A		N/A
Medicaid Member Months	9.324	11.105	11.100	10.764	125%		
MCP Member Months	7.066	7.623	7.117	7.620	9%		
Dual Eligibility Member Months	0.284	0.338	0.460	0.322	329%		
Waiver Member Months	0.319	0.369	0.513	0.359	372%		
ABD Member Months	0.917	3.615	2.859	2.668	106%		*
CFC Member Months	6.949	5.890	6.161	6.575	139%		

**Lucas County (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.602	23.366	8.791	11.132	87%		
# ED Mental Health Visits	0.008	0.079	0.060	0.054	107%		*
# IP Mental Health Visits	0.003	0.039	0.029	0.027	105%		*
13 or More Mental Health Rx	0.018	0.231	0.147	0.137	104%		*
ADHD	0.022	0.193	0.181	0.154	112%		
Acute bronchitis	0.041	0.057	0.059	0.054	128%		*
Alcohol-related disorders	0.005	0.025	0.026	0.021	122%		*
Anxiety Disorders	0.020	0.059	0.078	0.056	146%		
Asthma	0.065	0.128	0.129	0.118	115%		*
Autism	0.002	0.008	0.012	0.009	133%		*
Bipolar Disorder	0.009	0.126	0.103	0.085	113%		
Blindness and vision defects	0.147	0.259	0.284	0.236	139%		
Cancer	0.013	0.014	0.019	0.014	390%		
Cardiac dysrhythmias	0.027	0.053	0.053	0.041	143%		

**Lucas County (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.043	0.086	0.089	0.072	136%		
Conduct Disorder	0.010	0.120	0.111	0.095	111%		
Congestive heart failure; nonhypertensive	0.014	0.014	0.018	0.014	840%		*
Coronary atherosclerosis and other heart disease	0.019	0.025	0.029	0.023	201%		
Cystic fibrosis	0.000	0.000	0.000	0.000	350%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.009	0.009	0.013	0.009	4798%		
Depression	0.043	0.293	0.308	0.242	121%		
Developmental disorders	0.033	0.093	0.098	0.079	127%		
Diabetes	0.056	0.102	0.114	0.084	159%		
Epilepsy; convulsions	0.019	0.036	0.044	0.032	159%		
Esophageal disorders	0.022	0.048	0.051	0.039	140%		
Essential hypertension	0.076	0.147	0.158	0.121	147%		
HIV infection	0.002	0.003	0.004	0.003	347%		*
Intracranial injury	0.006	0.013	0.014	0.010	156%		*

**Lucas County (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.020	0.016	0.014	111%		*
Neoplasms of unspecified nature or uncertain behavior	0.029	0.068	0.075	0.054	146%		
Obsessive-Compulsive Disorders	0.001	0.002	0.003	0.002	198%		*
Osteoarthritis	0.031	0.060	0.062	0.048	144%		
Other Developmental Disorder	0.003	0.040	0.038	0.033	110%		*
Other nervous system disorders	0.054	0.117	0.124	0.096	139%		
PTSD	0.003	0.027	0.021	0.021	99%		*
Pregnancy	0.043	0.023	0.031	0.025	71%		*
Psychotic Disorder	0.013	0.231	0.165	0.148	107%		
Spondylosis; intervertebral disc disorders; other back	0.090	0.179	0.202	0.155	147%		
Substance-related disorders	0.014	0.046	0.049	0.042	117%		*
Thyroid disorders	0.017	0.035	0.042	0.029	162%		

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Lucas County (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	9.293	11.166	11.335	10.856	128%		
Female	0.502	0.386	0.395	0.406	109%		*
White	0.545	0.522	0.533	0.526	66%		*
Black	0.421	0.458	0.447	0.453	85%		*
County: Adams	0.000	0.000	0.000	0.000	N/A		N/A
County: Butler	0.000	0.000	0.000	0.000	N/A		N/A
County: Lawrence	0.000	0.000	0.000	0.000	N/A		N/A
County: Lucas	1.000	1.000	1.000	1.000	N/A		N/A
Medicaid Member Months	10.775	11.383	11.205	11.212	99%		*
MCP Member Months	9.835	8.950	8.648	9.264	167%		
Dual Eligibility Member Months	0.004	0.010	0.014	0.010	138%		*
Waiver Member Months	0.020	0.003	0.006	0.004	75%		*
ABD Member Months	0.390	1.620	1.321	1.142	113%		*
CFC Member Months	10.378	9.754	9.877	10.061	129%		*

**Lucas County (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.664	23.426	8.805	11.476	86%		
# ED Mental Health Visits	0.002	0.026	0.019	0.017	107%		*
# IP Mental Health Visits	0.002	0.033	0.019	0.018	104%		*
13 or More Mental Health Rx	0.005	0.086	0.036	0.045	89%		*
ADHD	0.040	0.397	0.338	0.296	110%		
Acute bronchitis	0.044	0.027	0.038	0.029	43%		*
Alcohol-related disorders	0.001	0.005	0.003	0.003	100%		*
Anxiety Disorders	0.006	0.039	0.044	0.036	119%		*
Asthma	0.090	0.139	0.155	0.130	148%		
Autism	0.003	0.015	0.015	0.009	135%		*
Bipolar Disorder	0.001	0.022	0.009	0.014	78%		*
Blindness and vision defects	0.158	0.282	0.289	0.266	117%		*
Cancer	0.001	0.001	0.003	0.001	-289%	YES	*
Cardiac dysrhythmias	0.005	0.016	0.015	0.012	127%		*

**Lucas County (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.014	0.015	0.023	0.015	547%		*
Conduct Disorder	0.019	0.247	0.211	0.184	109%		
Congestive heart failure; nonhypertensive	0.000	0.000	0.000	0.000	-28%	YES	*
Coronary atherosclerosis and other heart disease	0.000	0.000	0.000	0.000	100%	YES	*
Cystic fibrosis	0.000	0.000	0.000	0.000	439%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.003	0.003	0.003	100%		*
Depression	0.012	0.133	0.110	0.087	116%		
Developmental disorders	0.040	0.138	0.130	0.108	120%		
Diabetes	0.004	0.010	0.011	0.009	117%		*
Epilepsy; convulsions	0.012	0.023	0.022	0.017	143%		*
Esophageal disorders	0.009	0.009	0.007	0.008	719%		*
Essential hypertension	0.003	0.007	0.007	0.006	124%		*
HIV infection	0.000	0.000	0.000	0.000	-28%	YES	*
Intracranial injury	0.005	0.008	0.007	0.006	169%		*

**Lucas County (Under 18, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.001	0.004	0.004	0.003	120%		*
Neoplasms of unspecified nature or uncertain behavior	0.011	0.044	0.035	0.037	94%		*
Obsessive-Compulsive Disorders	0.000	0.002	0.001	0.002	60%	YES	*
Osteoarthritis	0.000	0.000	0.000	0.000	2%	YES	*
Other Developmental Disorder	0.005	0.083	0.068	0.060	108%		*
Other nervous system disorders	0.017	0.049	0.052	0.039	135%		
PTSD	0.002	0.035	0.023	0.026	94%		*
Pregnancy	0.003	0.004	0.006	0.005	138%		*
Psychotic Disorder	0.001	0.011	0.006	0.008	89%		*
Spondylosis; intervertebral disc disorders; other back	0.015	0.026	0.026	0.024	123%		*
Substance-related disorders	0.004	0.014	0.014	0.011	122%		*
Thyroid disorders	0.002	0.006	0.007	0.004	153%		*

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Lucas County (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	41.492	43.532	42.819	42.607	111%		*
Female	0.638	0.611	0.643	0.621	20%		*
White	0.586	0.549	0.582	0.551	14%		
Black	0.376	0.431	0.391	0.426	39%		
County: Adams	0.000	0.000	0.000	0.000	N/A		N/A
County: Butler	0.000	0.000	0.000	0.000	N/A		N/A
County: Lawrence	0.000	0.000	0.000	0.000	N/A		N/A
County: Lucas	1.000	1.000	1.000	1.000	N/A		N/A
Medicaid Member Months	8.251	10.870	10.756	10.266	124%		
MCP Member Months	5.020	6.501	5.555	5.930	75%		
Dual Eligibility Member Months	0.491	0.616	0.737	0.663	154%		*
Waiver Member Months	0.540	0.679	0.743	0.670	149%		*
ABD Member Months	1.306	5.300	3.832	3.988	97%		*
CFC Member Months	4.415	2.626	3.366	3.257	94%		*

**Lucas County (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.557	23.315	8.804	10.534	90%		
# ED Mental Health Visits	0.012	0.124	0.095	0.092	102%		*
# IP Mental Health Visits	0.003	0.044	0.036	0.035	103%		*
13 or More Mental Health Rx	0.028	0.353	0.230	0.214	104%		*
ADHD	0.009	0.021	0.026	0.023	116%		*
Acute bronchitis	0.038	0.082	0.081	0.074	114%		*
Alcohol-related disorders	0.009	0.042	0.039	0.034	112%		*
Anxiety Disorders	0.031	0.076	0.097	0.075	138%		
Asthma	0.046	0.120	0.109	0.107	103%		*
Autism	0.002	0.002	0.009	0.003	1221%	YES	
Bipolar Disorder	0.015	0.214	0.181	0.155	111%		
Blindness and vision defects	0.139	0.240	0.237	0.214	121%		*
Cancer	0.021	0.025	0.030	0.027	157%		*
Cardiac dysrhythmias	0.043	0.085	0.081	0.068	128%		*

**Lucas County (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.065	0.146	0.142	0.124	120%		*
Conduct Disorder	0.003	0.012	0.015	0.010	138%		*
Congestive heart failure; nonhypertensive	0.024	0.027	0.032	0.026	305%		*
Coronary atherosclerosis and other heart disease	0.034	0.047	0.041	0.040	110%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.015	0.014	0.019	0.014	-295%		*
Depression	0.065	0.428	0.471	0.383	119%		
Developmental disorders	0.028	0.055	0.054	0.051	110%		*
Diabetes	0.094	0.179	0.167	0.147	122%		*
Epilepsy; convulsions	0.023	0.048	0.057	0.043	148%		
Esophageal disorders	0.031	0.082	0.072	0.068	107%		*
Essential hypertension	0.131	0.265	0.252	0.227	117%		
HIV infection	0.004	0.006	0.009	0.006	261%		*
Intracranial injury	0.006	0.017	0.018	0.014	131%		*

**Lucas County (18 and Over, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.004	0.033	0.026	0.024	105%		*
Neoplasms of unspecified nature or uncertain behavior	0.042	0.087	0.096	0.074	144%		
Obsessive-Compulsive Disorders	0.002	0.002	0.006	0.002	952%	YES	*
Osteoarthritis	0.054	0.111	0.106	0.092	124%		*
Other Developmental Disorder	0.001	0.004	0.003	0.005	49%		*
Other nervous system disorders	0.082	0.174	0.179	0.152	126%		
PTSD	0.003	0.020	0.017	0.017	104%		*
Pregnancy	0.073	0.038	0.055	0.048	77%		*
Psychotic Disorder	0.022	0.416	0.301	0.278	105%		*
Spondylosis; intervertebral disc disorders; other back	0.146	0.308	0.314	0.278	120%		
Substance-related disorders	0.022	0.073	0.081	0.069	118%		*
Thyroid disorders	0.028	0.059	0.060	0.050	127%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Lucas County (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	28.699	30.598	28.407	28.153	113%		*
Female	0.561	0.508	0.502	0.518	129%		*
White	0.597	0.545	0.562	0.570	115%		*
Black	0.375	0.437	0.417	0.407	116%		*
County: Adams	0.000	0.000	0.000	0.000	N/A		N/A
County: Butler	0.000	0.000	0.000	0.000	N/A		N/A
County: Lawrence	0.000	0.000	0.000	0.000	N/A		N/A
County: Lucas	1.000	1.000	1.000	1.000	N/A		N/A
Medicaid Member Months	11.243	11.592	11.398	11.375	106%		*
MCP Member Months	7.637	7.685	7.462	7.456	112%		*
Dual Eligibility Member Months	0.334	0.401	0.401	0.387	121%		*
Waiver Member Months	0.359	0.439	0.441	0.441	99%		*
ABD Member Months	1.855	4.241	2.765	2.551	109%		*
CFC Member Months	7.272	5.467	6.514	6.708	111%		*

**Lucas County (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	10.604	29.623	14.672	15.943	91%		
# ED Mental Health Visits	0.078	0.098	0.079	0.081	93%		*
# IP Mental Health Visits	0.034	0.049	0.042	0.043	90%		*
13 or More Mental Health Rx	0.088	0.285	0.138	0.127	106%		*
ADHD	0.148	0.232	0.212	0.212	101%		*
Acute bronchitis	0.053	0.062	0.057	0.055	128%		*
Alcohol-related disorders	0.026	0.029	0.024	0.024	90%		*
Anxiety Disorders	0.116	0.069	0.084	0.085	101%		*
Asthma	0.098	0.134	0.119	0.114	114%		*
Autism	0.009	0.010	0.010	0.010	39%		*
Bipolar Disorder	0.111	0.159	0.128	0.118	121%		*
Blindness and vision defects	0.233	0.278	0.267	0.257	122%		*
Cancer	0.018	0.016	0.016	0.017	165%		*
Cardiac dysrhythmias	0.043	0.061	0.046	0.045	106%		*

**Lucas County (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.071	0.099	0.085	0.080	115%		*
Conduct Disorder	0.134	0.150	0.155	0.157	87%		*
Congestive heart failure; nonhypertensive	0.014	0.017	0.017	0.014	203%		*
Coronary atherosclerosis and other heart disease	0.021	0.029	0.025	0.025	96%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.011	0.010	0.012	0.011	-8%		*
Depression	0.399	0.362	0.363	0.365	104%		*
Developmental disorders	0.067	0.106	0.093	0.094	99%		*
Diabetes	0.087	0.119	0.099	0.098	105%		*
Epilepsy; convulsions	0.037	0.041	0.038	0.036	136%		*
Esophageal disorders	0.040	0.056	0.047	0.043	121%		*
Essential hypertension	0.120	0.171	0.142	0.139	104%		*
HIV infection	0.005	0.004	0.004	0.004	131%		*
Intracranial injury	0.013	0.014	0.013	0.014	-19%		*

**Lucas County (All Ages, CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.022	0.024	0.020	0.021	38%		*
Neoplasms of unspecified nature or uncertain behavior	0.059	0.077	0.068	0.066	112%		*
Obsessive-Compulsive Disorders	0.003	0.003	0.001	0.002	284%		*
Osteoarthritis	0.053	0.071	0.057	0.056	106%		*
Other Developmental Disorder	0.039	0.051	0.053	0.053	102%		*
Other nervous system disorders	0.113	0.133	0.118	0.114	123%		*
PTSD	0.039	0.034	0.031	0.034	168%		*
Pregnancy	0.058	0.020	0.023	0.028	115%		*
Psychotic Disorder	0.135	0.289	0.200	0.186	109%		*
Spondylosis; intervertebral disc disorders; other back	0.193	0.202	0.187	0.180	176%		*
Substance-related disorders	0.093	0.055	0.055	0.060	114%		*
Thyroid disorders	0.032	0.040	0.036	0.034	130%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**Lucas County (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.755	21.663	25.397	21.663	31%		
Female	0.581	0.508	0.555	0.508	36%		
White	0.567	0.507	0.569	0.507	-3%		
Black	0.396	0.470	0.409	0.470	18%		
County: Adams	0.000	0.000	0.000	0.000	N/A		N/A
County: Butler	0.000	0.000	0.000	0.000	N/A		N/A
County: Lawrence	0.000	0.000	0.000	0.000	N/A		N/A
County: Lucas	1.000	1.000	1.000	1.000	N/A		N/A
Medicaid Member Months	9.208	9.286	9.610	9.286	550%		
MCP Member Months	7.031	7.387	7.065	7.387	6%		*
Dual Eligibility Member Months	0.281	0.103	0.161	0.103	60%		*
Waiver Member Months	0.316	0.107	0.112	0.107	97%		*
ABD Member Months	0.860	1.275	1.648	1.275	179%		
CFC Member Months	6.929	7.469	7.171	7.469	43%		*

**Lucas County (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.000	0.000	0.000	0.000	N/A	YES	N/A
# ED Mental Health Visits	0.004	0.012	0.013	0.012	106%		*
# IP Mental Health Visits	0.001	0.002	0.003	0.002	190%		*
13 or More Mental Health Rx	0.014	0.028	0.040	0.028	169%		*
ADHD	0.015	0.046	0.045	0.046	98%		*
Acute bronchitis	0.040	0.036	0.045	0.036	-107%		*
Alcohol-related disorders	0.004	0.009	0.009	0.009	113%		*
Anxiety Disorders	0.015	0.023	0.029	0.023	160%		*
Asthma	0.063	0.109	0.122	0.109	125%		*
Autism	0.002	0.003	0.003	0.003	170%	YES	*
Bipolar Disorder	0.003	0.005	0.006	0.005	164%	YES	*
Blindness and vision defects	0.142	0.189	0.262	0.189	236%		
Cancer	0.012	0.007	0.014	0.007	-28%		*
Cardiac dysrhythmias	0.026	0.026	0.042	0.026	2244%		

**Lucas County (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.042	0.038	0.068	0.038	-541%		
Conduct Disorder	0.002	0.004	0.005	0.004	159%	YES	*
Congestive heart failure; nonhypertensive	0.014	0.007	0.016	0.007	-21%	YES	
Coronary atherosclerosis and other heart disease	0.019	0.011	0.012	0.011	83%		*
Cystic fibrosis	0.000	0.001	0.000	0.001	-86%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.009	0.007	0.006	0.007	130%	YES	*
Depression	0.021	0.035	0.055	0.035	218%		
Developmental disorders	0.031	0.045	0.046	0.045	109%		*
Diabetes	0.054	0.037	0.069	0.037	-73%		
Epilepsy; convulsions	0.018	0.018	0.024	0.018	3539%		*
Esophageal disorders	0.020	0.020	0.027	0.020	435241%		*
Essential hypertension	0.074	0.057	0.110	0.057	-187%		
HIV infection	0.002	0.001	0.004	0.001	-58%	YES	*
Intracranial injury	0.006	0.007	0.011	0.007	263%		*

**Lucas County (All Ages, No CMHC Experience)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.001	0.003	0.004	0.003	124%	YES	*
Neoplasms of unspecified nature or uncertain behavior	0.027	0.034	0.057	0.034	396%		
Obsessive-Compulsive Disorders	0.001	0.001	0.002	0.001	-197%	YES	*
Osteoarthritis	0.030	0.020	0.031	0.020	-8%		*
Other Developmental Disorder	0.001	0.000	0.001	0.000	9%	YES	*
Other nervous system disorders	0.050	0.057	0.094	0.057	559%		
PTSD	0.001	0.001	0.001	0.001	100%	YES	*
Pregnancy	0.042	0.034	0.069	0.034	-253%		
Psychotic Disorder	0.006	0.012	0.012	0.012	100%		*
Spondylosis; intervertebral disc disorders; other back	0.084	0.092	0.159	0.092	810%		
Substance-related disorders	0.009	0.015	0.021	0.015	182%		*
Thyroid disorders	0.016	0.014	0.019	0.014	-136%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**MCP: Buckeye (All Ages, All CMHC)**  
Summary of Covariate Averages Before and After Propensity Score Matching

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	18.093	18.564	21.276	18.987	568%		
Female	0.588	0.518	0.544	0.531	82%		*
White	0.539	0.512	0.528	0.519	70%		*
Black	0.427	0.470	0.451	0.463	73%		*
County: Adams	0.005	0.013	0.004	0.015	-31%	YES	
County: Butler	0.034	0.027	0.100	0.031	-561%	YES	
County: Lawrence	0.002	0.002	0.003	0.001	2348%	YES	*
County: Lucas	0.957	0.951	0.893	0.946	773%	YES	
Medicaid Member Months	10.401	11.096	10.955	10.924	105%		*
MCP Member Months	9.728	9.583	9.613	9.695	158%		*
Dual Eligibility Member Months	0.006	0.015	0.014	0.016	79%		*
Waiver Member Months	0.001	0.000	0.000	0.000	N/A		N/A
ABD Member Months	0.596	1.661	1.731	1.383	128%		*
CFC Member Months	9.770	9.390	9.166	9.488	182%		*

**MCP: Buckeye (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.671	21.901	10.000	11.954	89%		
# ED Mental Health Visits	0.007	0.032	0.044	0.029	143%		*
# IP Mental Health Visits	0.003	0.026	0.027	0.023	111%		*
13 or More Mental Health Rx	0.014	0.129	0.115	0.100	111%		*
ADHD	0.026	0.271	0.214	0.205	103%		*
Acute bronchitis	0.042	0.039	0.050	0.044	-104%		*
Alcohol-related disorders	0.003	0.007	0.008	0.008	100%	YES	*
Anxiety Disorders	0.016	0.053	0.075	0.050	151%		
Asthma	0.081	0.133	0.138	0.123	126%		*
Autism	0.001	0.009	0.010	0.007	120%		*
Bipolar Disorder	0.006	0.067	0.064	0.057	108%		*
Blindness and vision defects	0.161	0.255	0.263	0.247	116%		*
Cancer	0.005	0.003	0.007	0.003	-45%	YES	*
Cardiac dysrhythmias	0.013	0.026	0.028	0.021	145%		*

<b>MCP: Buckeye (All Ages, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Chronic obstructive pulmonary disease and bronchiectasis	0.021	0.036	0.042	0.032	161%		*
Conduct Disorder	0.013	0.177	0.140	0.127	106%		*
Congestive heart failure; nonhypertensive	0.002	0.002	0.002	0.002	100%	YES	*
Coronary atherosclerosis and other heart disease	0.003	0.007	0.006	0.007	73%	YES	*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.004	0.002	0.004	35%	YES	*
Depression	0.031	0.217	0.251	0.192	124%		
Developmental disorders	0.024	0.079	0.066	0.066	100%		*
Diabetes	0.022	0.040	0.056	0.040	174%		*
Epilepsy; convulsions	0.010	0.019	0.022	0.017	153%		*
Esophageal disorders	0.013	0.018	0.025	0.020	192%		*
Essential hypertension	0.032	0.055	0.067	0.053	151%		*
HIV infection	0.001	0.001	0.002	0.001	-260%	YES	*
Intracranial injury	0.005	0.015	0.019	0.015	133%		*

<b>MCP: Buckeye (All Ages, All CMHC)</b>							
<b>Summary of Covariate Averages Before and After Propensity Score Matching</b>							
<b>Covariate</b>	<b>Full Group</b>		<b>Matched Samples</b>		<b>Bias Reduction<sup>1</sup></b>	<b>Excluded from PSM<sup>2</sup></b>	<b>Balanced<sup>3</sup></b>
	<b>Control</b>	<b>Treatment</b>	<b>Control</b>	<b>Treatment</b>			
Mental Disorder Not Otherwise Specified (NOS)	0.002	0.007	0.016	0.005	230%	YES	
Neoplasms of unspecified nature or uncertain behavior	0.008	0.028	0.029	0.025	114%		*
Obsessive-Compulsive Disorders	0.000	0.005	0.000	0.004	4%	YES	
Osteoarthritis	0.008	0.016	0.018	0.014	151%		*
Other Developmental Disorder	0.002	0.039	0.031	0.032	98%		*
Other nervous system disorders	0.031	0.060	0.068	0.052	149%		*
PTSD	0.003	0.035	0.035	0.033	105%		*
Pregnancy	0.055	0.030	0.056	0.034	12%		
Psychotic Disorder	0.006	0.053	0.067	0.045	135%		
Spondylosis; intervertebral disc disorders; other back	0.063	0.085	0.126	0.091	238%		
Substance-related disorders	0.013	0.029	0.033	0.027	134%		*
Thyroid disorders	0.010	0.022	0.030	0.021	158%		*

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**MCP: CareSource (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	20.482	36.935	34.801	33.840	105%		*
Female	0.574	0.557	0.571	0.553	-3%		*
White	0.831	0.740	0.802	0.782	78%		*
Black	0.137	0.245	0.182	0.202	81%		*
County: Adams	0.058	0.042	0.037	0.051	191%		*
County: Butler	0.611	0.114	0.207	0.149	87%		
County: Lawrence	0.084	0.110	0.149	0.132	156%		*
County: Lucas	0.058	0.450	0.309	0.344	93%		
Medicaid Member Months	10.277	11.173	10.971	10.982	99%		*
MCP Member Months	9.539	9.983	9.673	9.776	77%		*
Dual Eligibility Member Months	0.008	0.034	0.046	0.035	127%		*
Waiver Member Months	0.001	0.002	0.000	0.003	-284%		*
ABD Member Months	1.117	6.833	5.626	5.617	100%		*
CFC Member Months	9.135	4.267	5.242	5.285	101%		*

**MCP: CareSource (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.187	18.750	13.618	13.692	100%		*
# ED Mental Health Visits	0.012	0.090	0.093	0.079	115%		*
# IP Mental Health Visits	0.003	0.032	0.028	0.029	98%		*
13 or More Mental Health Rx	0.035	0.426	0.353	0.322	106%		*
ADHD	0.054	0.117	0.161	0.141	125%		*
Acute bronchitis	0.074	0.119	0.127	0.123	108%		*
Alcohol-related disorders	0.006	0.028	0.025	0.022	112%		*
Anxiety Disorders	0.031	0.105	0.142	0.108	134%		
Asthma	0.060	0.123	0.125	0.114	116%		*
Autism	0.002	0.002	0.003	0.003	359%	YES	*
Bipolar Disorder	0.013	0.154	0.128	0.126	101%		*
Blindness and vision defects	0.179	0.306	0.303	0.290	110%		*
Cancer	0.008	0.019	0.024	0.020	128%		*
Cardiac dysrhythmias	0.018	0.071	0.067	0.059	113%		*

**MCP: CareSource (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.047	0.154	0.145	0.142	103%		*
Conduct Disorder	0.014	0.065	0.096	0.074	130%		
Congestive heart failure; nonhypertensive	0.004	0.020	0.020	0.018	110%		*
Coronary atherosclerosis and other heart disease	0.011	0.050	0.046	0.042	110%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.012	0.007	0.008	89%		*
Depression	0.045	0.358	0.381	0.323	114%		
Developmental disorders	0.035	0.035	0.049	0.044	-5666%		*
Diabetes	0.036	0.148	0.134	0.124	107%		*
Epilepsy; convulsions	0.013	0.042	0.047	0.040	120%		*
Esophageal disorders	0.026	0.084	0.083	0.078	107%		*
Essential hypertension	0.056	0.242	0.216	0.201	107%		*
HIV infection	0.001	0.005	0.005	0.004	113%	YES	*
Intracranial injury	0.005	0.011	0.011	0.010	120%		*

**MCP: CareSource (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.004	0.037	0.033	0.030	108%		*
Neoplasms of unspecified nature or uncertain behavior	0.014	0.044	0.050	0.043	119%		*
Obsessive-Compulsive Disorders	0.001	0.012	0.008	0.009	95%		*
Osteoarthritis	0.017	0.095	0.070	0.077	92%		*
Other Developmental Disorder	0.003	0.009	0.014	0.012	128%		*
Other nervous system disorders	0.057	0.163	0.161	0.148	110%		*
PTSD	0.007	0.029	0.042	0.029	142%		
Pregnancy	0.046	0.025	0.038	0.029	54%		*
Psychotic Disorder	0.007	0.276	0.145	0.164	94%		*
Spondylosis; intervertebral disc disorders; other back	0.095	0.287	0.303	0.258	120%		
Substance-related disorders	0.022	0.063	0.071	0.062	118%		*
Thyroid disorders	0.019	0.064	0.053	0.056	94%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**MCP: Molina (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	23.476	33.613	35.566	33.741	118%		*
Female	0.557	0.556	0.560	0.559	-185%		*
White	0.889	0.911	0.897	0.914	20%		*
Black	0.081	0.077	0.095	0.074	-362%		*
County: Adams	0.127	0.186	0.148	0.188	34%		*
County: Butler	0.377	0.210	0.281	0.212	57%		
County: Lawrence	0.209	0.203	0.214	0.205	-36%		*
County: Lucas	0.017	0.060	0.045	0.052	85%		*
Medicaid Member Months	9.952	11.119	11.138	11.112	103%		*
MCP Member Months	9.067	9.543	9.714	9.621	121%		*
Dual Eligibility Member Months	0.018	0.032	0.053	0.033	219%		*
Waiver Member Months	0.001	0.003	0.000	0.003	-205%		*
ABD Member Months	2.290	6.621	6.897	6.569	107%		*
CFC Member Months	7.628	4.462	4.188	4.509	110%		*

**MCP: Molina (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	1.534	18.046	15.948	17.221	95%		*
# ED Mental Health Visits	0.014	0.082	0.103	0.083	124%		*
# IP Mental Health Visits	0.003	0.026	0.029	0.026	111%		*
13 or More Mental Health Rx	0.061	0.389	0.410	0.386	106%		*
ADHD	0.036	0.152	0.179	0.145	123%		*
Acute bronchitis	0.076	0.121	0.138	0.122	131%		*
Alcohol-related disorders	0.008	0.024	0.019	0.024	71%		*
Anxiety Disorders	0.036	0.135	0.179	0.136	133%		*
Asthma	0.060	0.142	0.150	0.140	111%		*
Autism	0.002	0.010	0.009	0.010	82%	YES	*
Bipolar Disorder	0.020	0.159	0.164	0.159	103%		*
Blindness and vision defects	0.159	0.275	0.290	0.276	111%		*
Cancer	0.012	0.022	0.024	0.022	114%		*
Cardiac dysrhythmias	0.021	0.051	0.041	0.052	70%		*

**MCP: Molina (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.084	0.159	0.212	0.160	158%		
Conduct Disorder	0.009	0.073	0.069	0.067	102%		*
Congestive heart failure; nonhypertensive	0.006	0.017	0.010	0.017	41%	YES	*
Coronary atherosclerosis and other heart disease	0.018	0.055	0.048	0.055	84%		*
Cystic fibrosis	0.000	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.009	0.000	0.007	-15%	YES	
Depression	0.051	0.336	0.366	0.331	109%		*
Developmental disorders	0.028	0.063	0.045	0.062	55%		*
Diabetes	0.052	0.131	0.147	0.131	116%		*
Epilepsy; convulsions	0.019	0.058	0.047	0.059	74%		*
Esophageal disorders	0.032	0.075	0.076	0.074	103%		*
Essential hypertension	0.082	0.217	0.240	0.217	114%		*
HIV infection	0.001	0.003	0.002	0.003	33%	YES	*
Intracranial injury	0.005	0.010	0.009	0.010	70%	YES	*

MCP: Molina (All Ages, All CMHC)							
Summary of Covariate Averages Before and After Propensity Score Matching							
Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.005	0.048	0.034	0.048	74%		*
Neoplasms of unspecified nature or uncertain behavior	0.015	0.046	0.038	0.045	81%		*
Obsessive-Compulsive Disorders	0.001	0.017	0.007	0.017	45%	YES	*
Osteoarthritis	0.022	0.063	0.074	0.064	120%		*
Other Developmental Disorder	0.001	0.017	0.003	0.014	32%	YES	*
Other nervous system disorders	0.062	0.135	0.176	0.134	146%		*
PTSD	0.007	0.043	0.050	0.043	114%		*
Pregnancy	0.042	0.027	0.033	0.028	63%		*
Psychotic Disorder	0.016	0.155	0.140	0.155	91%		*
Spondylosis; intervertebral disc disorders; other back	0.111	0.270	0.297	0.271	114%		*
Substance-related disorders	0.033	0.055	0.059	0.055	114%		*
Thyroid disorders	0.021	0.073	0.095	0.074	130%		*

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**MCP: Paramount (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	17.620	16.123	17.837	16.141	-15%		
Female	0.593	0.494	0.511	0.507	95%		*
White	0.591	0.561	0.591	0.560	-4%		
Black	0.375	0.412	0.384	0.412	25%		*
County: Adams	0.003	0.001	0.001	0.001	135%	YES	*
County: Butler	0.033	0.000	0.008	0.001	56%	YES	
County: Lawrence	0.001	0.000	0.000	0.001	323%	YES	*
County: Lucas	0.962	0.997	0.992	0.996	76%		*
Medicaid Member Months	10.218	11.232	11.113	11.042	108%		*
MCP Member Months	9.569	10.051	9.990	10.110	73%		*
Dual Eligibility Member Months	0.002	0.005	0.006	0.005	120%		*
Waiver Member Months	0.000	0.000	0.000	0.000	N/A		N/A
ABD Member Months	0.200	0.948	0.794	0.613	122%		
CFC Member Months	9.980	10.268	10.273	10.410	50%		*

**MCP: Paramount (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.559	19.716	8.206	10.127	88%		
# ED Mental Health Visits	0.004	0.050	0.032	0.025	120%		*
# IP Mental Health Visits	0.002	0.046	0.032	0.023	125%		*
13 or More Mental Health Rx	0.010	0.123	0.090	0.073	113%		*
ADHD	0.032	0.311	0.262	0.236	107%		*
Acute bronchitis	0.045	0.042	0.051	0.043	-151%		*
Alcohol-related disorders	0.003	0.009	0.009	0.008	121%		*
Anxiety Disorders	0.019	0.059	0.078	0.055	143%		
Asthma	0.066	0.130	0.144	0.120	133%		
Autism	0.001	0.008	0.009	0.008	106%		*
Bipolar Disorder	0.004	0.059	0.039	0.041	97%		*
Blindness and vision defects	0.163	0.298	0.304	0.278	118%		*
Cancer	0.004	0.007	0.012	0.008	214%		*
Cardiac dysrhythmias	0.011	0.023	0.030	0.021	163%		*

**MCP: Paramount (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.019	0.028	0.048	0.025	320%		
Conduct Disorder	0.012	0.190	0.154	0.145	104%		*
Congestive heart failure; nonhypertensive	0.001	0.002	0.000	0.001	-100%	YES	*
Coronary atherosclerosis and other heart disease	0.002	0.002	0.005	0.002	-932%	YES	*
Cystic fibrosis	0.000	0.000	0.000	0.001	-853%	YES	*
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.003	0.006	0.002	275%	YES	
Depression	0.028	0.210	0.227	0.164	127%		
Developmental disorders	0.024	0.097	0.094	0.077	120%		*
Diabetes	0.016	0.028	0.036	0.023	185%		
Epilepsy; convulsions	0.009	0.020	0.022	0.018	136%		*
Esophageal disorders	0.014	0.021	0.028	0.017	239%		
Essential hypertension	0.021	0.032	0.043	0.031	201%		
HIV infection	0.001	0.000	0.001	0.001	100%	YES	*
Intracranial injury	0.005	0.009	0.010	0.007	172%		*

**MCP: Paramount (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.000	0.009	0.005	0.005	100%		*
Neoplasms of unspecified nature or uncertain behavior	0.011	0.026	0.024	0.019	131%		*
Obsessive-Compulsive Disorders	0.000	0.001	0.003	0.000	621%	YES	
Osteoarthritis	0.007	0.011	0.015	0.009	229%		*
Other Developmental Disorder	0.004	0.067	0.053	0.049	105%		*
Other nervous system disorders	0.029	0.066	0.084	0.056	165%		
PTSD	0.003	0.031	0.026	0.023	109%		*
Pregnancy	0.057	0.031	0.042	0.033	58%		*
Psychotic Disorder	0.002	0.036	0.021	0.020	103%		*
Spondylosis; intervertebral disc disorders; other back	0.062	0.090	0.111	0.082	190%		
Substance-related disorders	0.010	0.029	0.036	0.026	142%		*
Thyroid disorders	0.011	0.016	0.026	0.016	273%		

## Notes:

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

**MCP: UnitedHealthcare (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Age	27.637	43.502	39.588	39.939	98%		*
Female	0.541	0.545	0.533	0.545	-232%		*
White	0.731	0.528	0.579	0.565	93%		*
Black	0.246	0.458	0.409	0.421	95%		*
County: Adams	0.025	0.001	0.000	0.003	137%	YES	*
County: Butler	0.243	0.004	0.049	0.009	69%	YES	
County: Lawrence	0.360	0.105	0.193	0.199	102%		*
County: Lucas	0.360	0.884	0.755	0.778	96%		*
Medicaid Member Months	10.059	11.103	10.686	10.548	114%		*
MCP Member Months	9.025	9.410	8.556	8.628	83%		*
Dual Eligibility Member Months	0.035	0.101	0.138	0.110	131%		*
Waiver Member Months	0.000	0.000	0.000	0.000	N/A		N/A
ABD Member Months	3.997	9.637	8.213	8.305	98%		*
CFC Member Months	6.016	1.350	2.314	2.124	96%		*

**MCP: UnitedHealthcare (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
# Mental Health Center Visits	0.878	24.462	10.597	11.476	96%		*
# ED Mental Health Visits	0.012	0.159	0.078	0.084	96%		*
# IP Mental Health Visits	0.004	0.059	0.040	0.049	88%		*
13 or More Mental Health Rx	0.046	0.531	0.320	0.311	101%		*
ADHD	0.032	0.042	0.098	0.072	274%		*
Acute bronchitis	0.055	0.073	0.078	0.072	130%		*
Alcohol-related disorders	0.011	0.059	0.046	0.043	105%		*
Anxiety Disorders	0.028	0.069	0.072	0.069	106%		*
Asthma	0.067	0.099	0.118	0.089	182%		*
Autism	0.003	0.004	0.000	0.009	-487%	YES	*
Bipolar Disorder	0.017	0.231	0.184	0.179	102%		*
Blindness and vision defects	0.118	0.177	0.182	0.161	132%		*
Cancer	0.014	0.022	0.037	0.023	231%		*
Cardiac dysrhythmias	0.032	0.078	0.058	0.058	100%		*

**MCP: UnitedHealthcare (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Chronic obstructive pulmonary disease and bronchiectasis	0.088	0.151	0.170	0.141	141%		*
Conduct Disorder	0.008	0.010	0.032	0.014	503%	YES	*
Congestive heart failure; nonhypertensive	0.016	0.016	0.023	0.012	-10660%		*
Coronary atherosclerosis and other heart disease	0.025	0.036	0.026	0.026	100%		*
Cystic fibrosis	0.001	0.000	0.000	0.000	N/A	YES	N/A
Delirium, dementia, and amnestic and other cognitive diseases	0.001	0.007	0.017	0.009	192%	YES	*
Depression	0.050	0.428	0.412	0.383	106%		*
Developmental disorders	0.027	0.018	0.035	0.023	-15%		*
Diabetes	0.067	0.150	0.115	0.144	68%		*
Epilepsy; convulsions	0.022	0.043	0.046	0.040	124%		*
Esophageal disorders	0.025	0.081	0.058	0.061	95%		*
Essential hypertension	0.106	0.242	0.222	0.202	114%		*
HIV infection	0.004	0.004	0.006	0.006	100%	YES	*
Intracranial injury	0.007	0.018	0.026	0.017	160%		*

**MCP: UnitedHealthcare (All Ages, All CMHC)**  
**Summary of Covariate Averages Before and After Propensity Score Matching**

Covariate	Full Group		Matched Samples		Bias Reduction <sup>1</sup>	Excluded from PSM <sup>2</sup>	Balanced <sup>3</sup>
	Control	Treatment	Control	Treatment			
Mental Disorder Not Otherwise Specified (NOS)	0.004	0.048	0.037	0.032	111%		*
Neoplasms of unspecified nature or uncertain behavior	0.018	0.036	0.040	0.037	113%		*
Obsessive-Compulsive Disorders	0.000	0.007	0.003	0.009	25%	YES	*
Osteoarthritis	0.041	0.114	0.110	0.081	136%		*
Other Developmental Disorder	0.002	0.004	0.009	0.003	363%	YES	*
Other nervous system disorders	0.075	0.169	0.159	0.147	111%		*
PTSD	0.006	0.021	0.026	0.026	100%		*
Pregnancy	0.038	0.020	0.017	0.026	153%		*
Psychotic Disorder	0.015	0.471	0.228	0.199	106%		*
Spondylosis; intervertebral disc disorders; other back	0.134	0.336	0.323	0.285	117%		*
Substance-related disorders	0.033	0.104	0.092	0.092	100%		*
Thyroid disorders	0.020	0.057	0.049	0.052	93%		*

**Notes:**

<sup>1</sup> Bias Reduction represents the reduction in the standardized bias coefficient as a result of the matching process. A figure greater than 0% and less than 200% represents reduced bias.

<sup>2</sup> Indicates if the covariate was excluded in the Propensity Score Model logistic regression.

<sup>3</sup> An asterisk (\*) indicates that the averages for the matched control group and treatment group are statistically equivalent.

## *APPENDIX C. PROPENSITY SCORE MODELS*

This section provides the detailed results of the propensity score-based matching for each level of analysis. For each of the 42 stratifications, summary statistics describe the matched control and treatment group samples and percentage matched.

## Summary of Propensity Score-Based Matching

Number of Members in Eligible Population and Matched Sample

Stratification	Full Group		Matched		Percentage Matched
	Eligible Control	Eligible Treatment	Control	Treatment	
All Health Homes (All Ages, All CMHC)	202,319	9,851	8,335	8,335	84.6%
All Health Homes (Under 18, All CMHC)	90,026	4,084	3,562	3,562	87.2%
All Health Homes (18 and Over, All CMHC)	112,293	5,767	4,649	4,649	80.6%
All Health Homes (All Ages, CMHC Experience)	13,792	7,710	5,212	5,212	67.6%
All Health Homes (All Ages, No CMHC Experience)	188,527	2,141	2,141	2,141	100.0%
Butler (All Ages, All CMHC)	202,319	613	613	613	100.0%
Butler (Under 18, All CMHC)	90,026	157	157	157	100.0%
Butler (18 and Over, All CMHC)	112,293	456	456	456	100.0%
Butler (All Ages, CMHC Experience)	13,792	395	395	395	100.0%
Butler (All Ages, No CMHC Experience)	188,527	218	218	218	100.0%
Harbor (All Ages, All CMHC)	202,319	2,522	2,522	2,522	100.0%
Harbor (Under 18, All CMHC)	90,026	2,022	2,015	2,015	99.7%
Harbor (18 and Over, All CMHC)	112,293	500	500	500	100.0%
Harbor (All Ages, CMHC Experience)	13,792	1,873	1,849	1,849	98.7%
Harbor (All Ages, No CMHC Experience)	188,527	649	649	649	100.0%
Shawnee (All Ages, All CMHC)	202,319	2,049	2,049	2,049	100.0%
Shawnee (Under 18, All CMHC)	90,026	634	631	631	99.5%
Shawnee (18 and Over, All CMHC)	112,293	1,415	1,415	1,415	100.0%
Shawnee (All Ages, CMHC Experience)	13,792	1,646	1,516	1,516	92.1%
Shawnee (All Ages, No CMHC Experience)	188,527	403	403	403	100.0%
Unison (All Ages, All CMHC)	202,319	1,669	1,652	1,652	99.0%

## Summary of Propensity Score-Based Matching

Number of Members in Eligible Population and Matched Sample

Stratification	Full Group		Matched		Percentage Matched
	Eligible Control	Eligible Treatment	Control	Treatment	
Unison (Under 18, All CMHC)	90,026	235	235	235	100.0%
Unison (18 and Over, All CMHC)	112,293	1,434	1,395	1,395	97.3%
Unison (All Ages, CMHC Experience)	13,792	1,387	1,293	1,293	93.2%
Unison (All Ages, No CMHC Experience)	188,527	282	282	282	100.0%
Zepf (All Ages, All CMHC)	202,319	2,998	2,997	2,997	100.0%
Zepf (Under 18, All CMHC)	90,026	1,036	1,025	1,025	98.9%
Zepf (18 and Over, All CMHC)	112,293	1,962	1,950	1,950	99.4%
Zepf (All Ages, CMHC Experience)	13,792	2,409	2,287	2,287	94.9%
Zepf (All Ages, No CMHC Experience)	188,527	589	589	589	100.0%
Pharmacist on Site (All Ages, All CMHC)	202,319	3,135	3,113	3,113	99.3%
No Pharmacist on Site (All Ages, All CMHC)	202,319	6,716	5,967	5,967	88.8%
Lucas County (All Ages, All CMHC)	95,275	7,187	4,933	4,933	68.6%
Lucas County (Under 18, All CMHC)	40,488	3,291	2,464	2,464	74.9%
Lucas County (18 and Over, All CMHC)	54,787	3,896	2,345	2,345	60.2%
Lucas County (All Ages, CMHC Experience)	5,413	5,669	3,134	3,134	55.3%
Lucas County (All Ages, No CMHC Experience)	89,862	1,518	1,518	1,518	100.0%
MCP: Buckeye (All Ages, All CMHC)	20,104	1,159	942	942	81.3%
MCP: CareSource (All Ages, All CMHC)	54,423	2,016	1,537	1,537	76.2%
MCP: Molina (All Ages, All CMHC)	16,453	586	580	580	99.0%
MCP: Paramount (All Ages, All CMHC)	41,141	2,466	1,930	1,930	78.3%
MCP: UnitedHealthcare (All Ages, All CMHC)	6,112	769	347	347	45.1%